

# UNDERGRADUATE CATALOG

2020-2021



MANHATTAN  
COLLEGE

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# Undergraduate Catalog

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Click here ([http://catalog.manhattan.edu/undergraduate/2019-20\\_undergraduate.pdf](http://catalog.manhattan.edu/undergraduate/2019-20_undergraduate.pdf)) for a PDF of the full Undergraduate catalog.

Welcome to our online catalog, the College's primary, comprehensive single source of departmental and college-wide information related to academic programs. Courses, degree programs, and policies that govern progress toward completion of a degree are described in this catalog. Students are responsible for knowing and understanding the contents of the catalog year they are following. The catalog provides a broad range of course information in a consistent online format and is searchable and user-friendly.

**While every effort is made to ensure that the course information, applicable policies and other materials presented in the *Catalog* are accurate and correct, the College reserves the right to make changes as circumstances require.**

# About Manhattan College

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## The Mission of Manhattan College

Manhattan College is an independent Catholic institution of higher learning that embraces qualified men and women of all faiths, cultures, and traditions. The mission of Manhattan College is to provide a contemporary, person-centered educational experience that prepares graduates for lives of personal development, professional success, civic engagement, and service to their fellow human beings. The College pursues this mission through programs that integrate a broad liberal education with a concentration in specific disciplines in the arts and sciences or with professional preparation in business, education, and engineering.

Established in 1853 by the Institute of the Brothers of the Christian Schools, the College continues to draw its inspiration from the heritage of John Baptist de La Salle, the innovator of modern pedagogy and patron saint of teachers. Among the hallmarks of this Lasallian heritage are excellence in teaching, respect for human dignity, reflection on faith and its relation to reason, an emphasis on ethical conduct, and commitment to social justice.

## Historical Note

In May 1853, five Christian Brothers moved their small Canal Street school to what was then known as Manhattanville, a section of New York City at 131st Street and Broadway. The Brothers brought with them more than their furniture and their students. They were the bearers of an educational tradition that began in 17th century France with Saint John Baptist de La Salle, the founder of their order and today acknowledged by the Catholic Church as the Patron Saint of Teachers. De La Salle formed a community of religious Brothers who would devote themselves exclusively to their work as teachers. Their students would be the children of the artisans and the underprivileged; their mission would be the intellectual, spiritual, moral, economic and social flourishing of those students. Responding to the needs of his time, De La Salle created a new type of school system and elevated the work of teaching school — treating it as a profession and a vocation. The Brothers were urged to go beyond rote memory to “touch the hearts” of the students. Practical subjects were taught that would lead to a useful role in society; religion was taught to impart a commitment to Christian ethics.

Between 1853 and 1863, the school grew significantly, adding college-level courses in 1859 and first using the name Manhattan College in 1861. It was chartered by the Board of Regents of the State of New York on April 2, 1863. Manhattan College was an unusual institution compared to its peer institutions at the time. From the beginning, the college sought to combine broad learning in the traditional liberal arts with rigorous technical and pre-professional training. As the first college catalog put it, the curriculum of Manhattan College combined the “advantages of a first-class College and Polytechnic Institute,” offering courses in both “the liberal and useful arts and sciences.”

As the school grew, new quarters were needed. The cornerstone of the “New Manhattan” was laid in 1922 on property bordered by the Hudson River and Van Cortlandt Park, in the Riverdale neighborhood of the Bronx, its present location. The addition of new buildings



and student residences has enlarged and enhanced the campus significantly. From this accessible site, the college is able to offer access to the cultural, educational, business and entertainment opportunities of New York City, as well as a self-contained residential campus environment.

Today Manhattan College identifies itself as a Catholic college in the Lasallian tradition. That tradition has continued to characterize the special educational experience offered by the College over its long history. Its constant focus has been the education of the disadvantaged. From its beginning, the College has paid particular attention to educating first-generation college students, and was an early proponent of access to disadvantaged and minority students, establishing special scholarship funds as early as 1938. That commitment continues today and is evident in Manhattan's diverse student body, many of whom are the first in their families to attend college, and most of whom are supported by significant financial aid.

The College continues to realize the objectives stated in its first catalog by maintaining a full range of programs in the liberal arts (<http://www.manhattan.edu/academics/arts/>) and sciences (<http://www.manhattan.edu/academics/science/>), combined with professional programs in engineering (<http://www.manhattan.edu/academics/engineering/>), business (<http://www.manhattan.edu/academics/business/>), and education (<http://www.manhattan.edu/academics/education/>). The quality of the undergraduate programs is demonstrated in many ways, for example, in the presence on campus of chapters of prestigious honor societies (<http://www.manhattan.edu/about/national-honor-societies/>) such as Phi Beta Kappa, Sigma Xi, and Tau Beta Pi.

Over the years, Manhattan College has seen many changes, and yet it maintains its deep commitment to its heritage and ideals. What were a predominantly Christian Brothers faculty has become predominantly lay and includes a significant percentage of women. The College became coeducational and accepted its first women undergraduate students in 1973. Currently, women comprise almost half of the full-time undergraduate student body.

With the opening of Horan Hall (1990) and its twin, East Hill (renamed Lee Hall) (2008), the College completed a major transformation from a majority-commuter to a majority-residential college. Manhattan College now offers a four-year guarantee of resident housing ([http://www.manhattan.edu/student\\_life/residence-halls/](http://www.manhattan.edu/student_life/residence-halls/)) and 80 percent of the student body chooses to live on or near campus. Currently, the College has a student body of approximately 3,500 — 2,900 undergraduates and 600 graduate and continuing education students. The student-faculty ratio is 12:1.

The College continues to follow the founding spirit of John Baptist de La Salle by being responsive to the needs of its place and time. Innovation grounded in tradition has always been a hallmark of Lasallian education, and Manhattan College's new strategic plan (<http://www.manhattan.edu/about/strategic-plan/>), "Renewing the Promise," commits the College to a course of continuous improvement of its programs and facilities in response to emerging needs.

## Recognition and Membership

Manhattan College is chartered and empowered to confer academic degrees by the New York State Education Department.



It is accredited by the Middle States Commission on Higher Education, 3624 Market Street, Philadelphia, PA 19104-2680, 215-662-5606, <http://www.msche.org/>. The college is approved by the American Chemical Society for the professional training of chemists and by the New York State Department of Health for Radiation Therapy Technology.

The School of Business is accredited by AACSB International, The Association to Advance Collegiate Schools of Business, the premier accrediting agency for business programs globally.

The undergraduate programs in Chemical Engineering, Civil Engineering, Electrical, and Computer Engineering, and Mechanical Engineering, and the masters of engineering program in Environmental Engineering are accredited by the Engineering Accreditation Commission of ABET Inc. ([www.abet.org](http://www.abet.org) (<http://www.abet.org/>)).

The teacher education programs at Manhattan College are accredited by the Teacher Education Accreditation Council (TEAC). Formally recognized by the Council for Higher Education Accreditation and by the U.S. Department of Education, TEAC is a nonprofit group dedicated to improving academic degree programs for professional educators. Its primary work is accrediting undergraduate and graduate professional education programs in order to assure the public about the quality of college and university programs. TEAC became part of CAEP (Council for the Accreditation of Educator Preparation) in 2013. CAEP awaits recognition by the Council for Higher Education Accreditation and by the U.S. Department of Education.

The College is a member of the Association of American Colleges, the American Council on Education, the Institute of International Education, the National Catholic Educational Association, the Association of Urban Universities, the Association of Governing Boards of Universities and Colleges, the American Association of University Women, the American Society for Engineering Education, Middle Atlantic Association of Colleges of Business Administration, Association of Continuing Higher Education, the National Association of College and University Summer Sessions, American Association of Colleges for Teacher Education, the College Entrance Examination Board, the National Commission for Cooperative Education, Association of Catholic Colleges and Universities (ACCU), Commission on Independent Colleges and Universities (CICU), National Association of Independent Colleges & Universities (NAICU), NY Campus Compact, Lilly Fellows Program, Lower Hudson Valley Consortium of Catholic Colleges & Universities (LHVCC), FSC DENA, International Association of Lasallian Universities (IALU), Annapolis Group.

The College is an associate member of The Hispanic Association of Colleges and Universities (HACU).

# Mission and History

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# Honors, Medals & Prizes

## Honors Enrichment Program

The Honors Enrichment Program is open to select students who meet published requirements. It is a co-curricular program designed to allow our honors students a broader range of experience consonant with their abilities and interests. The program offers opportunities to meet and grow intellectually with students from all five Schools in a wide variety of Honors Symposia offered each year. It also encourages students to explore the cultural riches of New York City and to take advantage of the many other lectures and presentations offered on campus each semester. Each year's events are organized around a specific theme.

Membership in a wide variety of professional and honorary societies may be earned by students of Manhattan College. These societies include:

**Alpha Iota Delta**, national honor society for students of decision sciences.

**Alpha Kappa Delta**, international honor society for students of sociology.

**Beta Beta Beta**, national honor society for students of biology.

**Beta Gamma Sigma**, national honor society for students of business.

**Chi Epsilon**, national honor society for students of civil engineering.

**Eta Kappa Nu**, national honor society for students of electrical engineering.

**Gamma Sigma Epsilon**, national honor society for students of chemistry and biochemistry.

**Kappa Delta Pi**, national honor society for students of education.

**Lambda Nu**, national honor society for students of training programs in radiological technology

**Lambda Pi Eta**, national honor society for students of communications.

**Mu Kappa Tau**, national honorary fraternity for students of marketing.

**Omega Chi Epsilon**, national honor society for students of chemical engineering.

**Omicron Delta Epsilon**, national honor society for students of economics.

**Phi Alpha Theta**, international honor society for students of history.

**Phi Epsilon Kappa**, national honor society for students of kinesiology and related career fields.

**Phi Sigma Tau**, national honor society for students of philosophy.

**Pi Delta Phi**, national honor society for students of French language and literature.

**Pi Mu Epsilon**, national honor fraternity for students of mathematics.

**Pi Sigma Alpha**, national honor society for students of Political Science.

**Pi Tau Sigma**, national honor society for students of mechanical engineering.

**Psi Chi**, national honor society for students of psychology.

**Sigma Delta Pi**, national honor society for students of Spanish language and literature.

**Sigma Iota Rho**, national honor society for students of international studies.

**Sigma Pi Sigma**, national honor society for students of physics.

**Sigma Tau Delta**, national honor society for students of English language and literature.

**Tau Chi Alpha**, national honor society for students of environmental engineering.

**Tau Sigma Kappa**, Manhattan College Honor Society for Computer Science.

**Theta Alpha Kappa**, national honor society for students of Religious Studies.

## Major National Honor Societies

Manhattan College hosts chapters of the major national honors societies: Phi Beta Kappa in the liberal arts, Sigma Xi in pure and applied scientific research, and Tau Beta Pi in engineering. Manhattan College is one of only four undergraduate institutions to host chapters of all three.

## Scholastic Honors

### Epsilon Sigma Pi Honor Society

Membership in this Society is the highest scholastic honor for which undergraduates of all programs of the College are eligible. Induction into this Society requires a cumulative scholarship index not less than 3.50. The following conditions for membership are applicable:

1. Students shall have completed six semesters with no fewer than 90 credits (including transfer credit, transient off-campus course credit, study-abroad credit, AP credit, CLEP credit, articulation or link-program credit).
2. Transfer students have the requisite index for the number of semesters completed at Manhattan College and have the same or higher index at all other colleges or universities attended prior to matriculation at Manhattan College. Students who have transferred from a country with a different grading system will have their transcripts reviewed by the Dean to determine that the requisite index at prior institutions was achieved.
3. Students may have no Ds or Fs on their transcripts from either Manhattan College or from any other colleges or universities attended after matriculation at Manhattan College.
4. Admission for Fall Honors Convocation shall be granted according to the following sliding scale of GPA based on the number of semesters in residence completed at Manhattan College:

Semesters at Manhattan	GPA
6	3.5
5	3.6

4	3.7
3	3.8
2	3.9

6. At graduation, all students with a GPA of 3.5 or better who have fulfilled conditions 1-3 listed above shall be inducted into Epsilon Sigma Pi.
7. Under unusual circumstances, a student who does not meet at graduation the above conditions but who seeks nomination to Epsilon Sigma Pi may petition the Provost for special consideration. The Provost shall convene a meeting of the Deans to consider the special application. Their decision shall be final.

**Dean's Honor List.** Students who complete a minimum of 12 credits in a Fall or Spring semester with a minimum grade point average of 3.40 with no course failures will be placed on the Dean's Honor list.

**Graduation With Honor.** Honors are awarded based on the following cumulative indexes:

GPA	Award
3.90-4.00	Summa Cum Laude
3.60-3.89	Magna Cum Laude
3.40-3.59	Cum Laude

Transfer students from other institutions are eligible for graduation honors if one half of the course credits for their degree are earned at Manhattan College. The required index for graduation honors will be based upon all course credits attempted at Manhattan College.

Students transferring from one program of the College to another are eligible for graduation honors. In calculating the required index for graduation honors, all course credits attempted at Manhattan College will be included.

## Medals and Prizes

The following medals and prizes are awarded annually:

**The Donald J. Carty Valedictory Medal.** Donated by faculty friends in memory of Dr. Donald J. Carty, Professor of Speech at Manhattan College. Awarded to the valedictorian of each graduating class.

**The Medal for Excellence in the Liberal Arts.** Founded by Joseph R. Holahan in memory of his brother, Major William V. Holohan of the class of 1925.

**The Medal for Art History.** This medal is awarded for academic excellence in the study of Art and Architecture.

**The Mendelian Medal for Biology.** Founded in memory of Dr. James G. Robilotti of the class of 1922.

**The Florence and Clarence Batt Medal for Biochemistry.** Founded by the Batt family in honor of their parents.

**The Medal for Chemistry.** Established by the Student Affiliate of the American Chemical Society.



**The John V. and Mildred G. Mahony Medal** . Founded by their sons, Brian, Kevin, and John, in memory of their parents. This medal is awarded for noteworthy contributions in undergraduate research work in environmental engineering that foretokens fundamental contributions to these fields in the future.

**The Medal for Communications.** This medal is awarded for academic excellence in Communications studies.

**The Brother John McNamara Medal for Computer Science.** Founded in 1985 by the faculty and former students of the Department of Mathematics and Computer Science in honor of Brother John McNamara in recognition of his efforts to bring Computer Science into the undergraduate curriculum.

**The Brother Birillus Thomas Medal for Mathematics.** Founded in his memory by his brother, Rt. Rev. Monsignor Francis J. McKeon, M.A., 1930.

**The Francis B. Taylor Medal for Excellence in Science and Mathematics.** Founded in honor of Francis B. Taylor '44, faculty member 1947-95.

**The Paul Cortissoz Award for English Literature.** Founded by family and friends in memory of Dr. Paul Cortissoz '47; faculty member 1949-1989.

**The Joseph L. McGoldrick Medal for English and World Literature.** Founded in honor of Dr. Joseph L. McGoldrick, '12, by his daughter, Miss Ann M. McGoldrick.

**The Harry J. Blair Memorial Medal for Renaissance Literature.** Founded in honor of Harry J. Blair, class of 1950; faculty member 1957-1976.

**The Brian S. Broderick Medal.** Founded in memory of Brian S. Broderick, Class of 1982, by his parents Michael and Mary Broderick, for award to a graduating senior who has conveyed through writing of distinction an understanding and appreciation of literature.

**The Brother Andrew O'Connor Medal for French.** Founded in 1998 by the members of the Sigma Beta Kappa Fraternity in memory of their Founding Moderator. This medal is awarded for excellence in the study of French and French literature.

**The Ryan Medal for Government.** Founded by Rev. Francis X. Ryan, C.S.P., '36, Mrs. Joseph F. Ryan, Jr. and Mrs. E. Gerard Ryan in honor of Joseph F. Ryan '26 and Gerard Ryan, '34.

**The McGoldrick Medal for History.** Founded by Joseph L. McGoldrick, '12, A.M., M.D., in memory of his parents, Lawrence and Mary McGoldrick.

**The Dorothy Nealy Sullivan Medal for International Studies.** Established in 2006 by former dean of the school of arts, Mary Ann O'Donnell, and her family, in loving memory of her mother, Dorothy Nealy Sullivan. The medal is awarded annually to the top graduating major in International Studies who has achieved a minimum of 3.5 overall GPA with no grades of D or F.

**The Harold E. Hazelton Humanities Medal.** Founded in honor of Harold E. Hazelton, class of 1951; faculty member 1957-1985. The medal will be awarded to the graduating senior who has manifested a deep commitment to the humanities and has made a significant contribution to the life of the college in the spirit of Harold E. Hazelton.

**The Frederick Mortati Medal for Italian.** Founded by Mrs. Frederick Mortati in memory of her husband.

**The Pope John XXIII Peace Studies Medal.** Founded by Mrs. Robert Beardsley in memory of her parents, Michael and Luisa Pecora. This medal is awarded for excellence in Peace Studies.

**The Brother Benignus Medal for Philosophy.** Founded by Phi Rho Pi Fraternity in memory of Brother Benignus, F.S.C., teacher and author.

**The Brother Gabriel Kane Medal for Physics.** Donated by Physics Alumni.

**The Broderick Medal for Psychology.** Founded by Most Reverend Edwin B. Broderick, D.D., Ph.D., and John M. Broderick of the class of 1935 in honor of their father, Patrick J. Broderick.

**The Edward J. Morris, M.D. Medal for Religious Studies.** Founded by the estate of Loretta R. Morris.

**The Sigma Xi Medal for Research in Science.** Donated by the Manhattan College Sigma Xi Chapter.

**The John T. Miller, Jr. Medal for Sociology.** Founded by Mrs. John T. Miller, Jr., in memory of her husband, class of 1972.

**The Cristina R. Toosie Medal for Spanish Studies.** Founded by Mrs. Thomas A. Toosie. This medal is awarded for excellence in the study of Spanish language, literature, and culture.

**The Draddy Medal for General Excellence in Engineering.** Founded in memory of Daniel Anthony Draddy of the class of 1913 and of Robert Emmet Draddy.

**The Brother Amandus Leo Call Engineering Medal.** Founded by Robert N. Pucci, class of 1940, and Margaret R. Pucci, M.D. Awarded annually to a graduating senior for distinguished leadership in academic, co-curricular and extra-curricular activities in Engineering. The winner of this medal is the student marshal for Engineering at the May Commencement.

**The Prutton Medal for Chemical Engineering.** Founded in honor of Dr. Carl F. Prutton by his friends.

**The Brother B. Austin Barry Medal for Civil Engineering.** Donated in honor of Brother B. Austin Barry, F.S.C. upon his retirement after forty-five years as a member of the faculty of Civil Engineering. This medal is to be awarded to a student for assiduity and competence in Civil Engineering and a spirit that bodes well for a future as a Civil Engineer.

**The John F. Hoban Medal for Civil Engineering.** Founded by friends in memory of John F. Hoban, class of 1951.

**The Brother Azarias Michael Medal for Civil Engineering.** Donated by the Civil Engineering Department in memory of Brother Azarias Michael, F.S.C.

**The Florence P. Wojtaszek Medal for Computer Engineering.** Given in memory of one who worked with the IBM Group, which wrote the first Fortran program.

**The Medal for Electrical Engineering.** Founded by Thomas R. Finn of the class of 1933 in honor of his mother, Mrs. Mary Finn.

**Lawrence Eckenfelder Award for Environmental Engineering.** Donated by the friends and family of W. Wesley Eckenfelder in memory of his son to recognize an outstanding undergraduate student in Environmental Engineering.

**The Brother Aubert Medal for Mechanical Engineering.** Founded by Phi Kappa Theta Fraternity in memory of Brother Aubert of Jesus, F.S.C.

**The Prize for Accountancy.** The New York State Society of Certified Public Accountants Superior Scholarship in Accounting Award.

**The Brother Cornelius Justin Brennan Medal.** Founded by Thomas J. Wright, Professor Emeritus of Managerial Sciences. Awarded to a graduating senior from Business in recognition of distinguished performance in academic and in co-curricular and/or extra-curricular activities.

**The Edward Dougherty Medal for Business.** Donated by Beta Sigma Fraternity in memory of Edward Dougherty of the class of 1928.

**The Professor William P. Cain Medal for Computer Information Systems.** Founded by the students and alumni of Business in tribute to Brother J. Anthony Flynn who established the program endowed by a gift from James Suarez, Dean of Business.

**The Richard J. Carey Medal for Economics.** Founded by Richard J. Carey of the class of 1942.

**The Captain Frederick J. Finn Medal for Finance.** Founded by Thomas R. Finn of the class of 1933 in memory of his brother, Captain Frederick J. Finn.

**The Dean James L. Fitzgerald Medal for Management.** Founded by the Faculty of Manhattan College in memory of Dr. James L. Fitzgerald, the first Dean of the School of Business, who served in that capacity from 1926 to 1962.

**The Medal for Marketing.** Donated by the Sales Executives of New York.

**The Thomas H. Lindgren Medal of Excellence in Education.** Founded in memory of Thomas H. Lindgren '55.

**The Brother A. James Norton Medal for Education.** Founded by the late Frank and Catherine Norton in honor of their son, Brother Adelbert James Norton, '40, professor and dean for many years in the School of Teacher Preparation.

**The John S. Sich Medal for Physical Education.** Founded by former students of Professor John S. Sich in honor of his 35 years of service to Manhattan College.

**The Paul R. Simon Medal for Radiological and Health Sciences.** Founded by Louis C. Simon in memory of his son, Paul R. Simon, a member of the first class of the Radiological Institute of Manhattan College.

**The David C. Broderick Medal for Campus Ministry.** Founded by David C. Broderick of the class of 1907 in memory of his son, David C. Broderick, Jr., of the class of 1939. Awarded to a graduating student for distinguished service to the Campus Ministry.

**The Signum Fidei Medal for Service and Social Action.** Founded by John M. Reilly of the class of 1975 and Lois Harr. Awarded to a graduating student for commitment to service and social action in the Bronx and beyond.

**The Joseph J. Gunn Alumni Medal.** This medal, awarded annually, is merited by the graduating senior who has been prominently involved in leadership activities over a period of four years at Manhattan College. Established in memory of Joseph J. Gunn, '30, by his family.

# FERPA

## Family Educational Rights and Privacy Act (FERPA)

The Family Educational Rights and Privacy Act (FERPA) of 1974 is a federal law that was enacted to protect the privacy of students and their educational records. The intent of the legislation is to protect the rights of students and to ensure the privacy and accuracy of 'educational information.' Educational Information refers to any record maintained by an educational institution, including files, documents, and materials of any type which contain information directly related to students, and which allows a student to be identified.

### What is *not* considered Educational Information?

- Sole possession records or private notes held by educational personnel which are not accessible or released to other personnel
- Records that are created by the campus law enforcement unit at least in part for a law enforcement purpose
- Records related to individuals who are employed by the college
- Records related to treatment provided by a physician, psychiatrist, psychologist or other recognized professional
- Records of the college which contain only information about an individual obtained after that person is no longer a student at the college (i.e., alumni records)

### Who is protected under FERPA?

Students who are protected under FERPA are those students who are currently enrolled or formerly enrolled, regardless of their age or status in regard to parental dependency. Students who have applied but have not attended the college, and deceased students do not fall under FERPA guidelines.

### Student's rights under FERPA

Eligible students have the right to inspect and review their educational records within 45 days of the day Manhattan College receives a request for access. The eligible student should submit the request to the Registrar and identify the record(s) they wish to inspect. The Registrar will make arrangements for access and will notify the student of the time/place where the records may be inspected.

An eligible student may also ask the college to amend a record believed to be inaccurate or misleading. If the school decides to not amend the record, the parent or student then has a right to a formal hearing. If, after the hearing, the school still chooses to not amend the record, the eligible student has the right to place a statement with the record commenting on the contested information.

Lastly, a student may formally request that Manhattan College not release Directory Information on their behalf. This request must be submitted to the Registrar. When this request is made, a notation will be flagged in the MC Student Information System and every reasonable effort will be made to safeguard the confidentiality of such information.

### When is a student's consent not required?

There are several exceptions to releasing information without a student's written approval. Some examples are:

- School officials with legitimate educational interests. A school official is a person employed by Manhattan College in an administrative, supervisory, academic, or support staff position (including law enforcement unit personnel and health staff); a person or company with whom Manhattan College has contracted (such as an attorney, auditor, or collection agent); a person serving on the Board of Trustees; or a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another school official in performing their tasks. A school official has a legitimate educational interest if the official needs to review an education record in order to fulfill their professional responsibility.
- In connection with Financial Aid
- Other schools to which a student is seeking to transfer/enroll
- Parents of a dependent student, as defined by the IRS. The college may release a student's records upon request, but the parent must submit proof of the student's dependency (via most recent federal tax form) prior to receiving the requested information
- Individuals who have obtained court orders or legally issued subpoenas
- Certain government officials in order to carry out lawful functions
- State and local authorities within a juvenile justice system, pursuant to specific State law
- Health and safety emergencies
- Accrediting organizations or organizations conducting studies for MC
- Any third party designated by a Federal or State Authority to evaluate a federal- or state-supported education program

### **Directory Information**

Under FERPA guidelines, a student's record may not be disclosed without written authorization unless the requested information falls under the category of 'Directory Information.' MC may disclose information on a student without violating FERPA if it has designated that information as Directory Information. The following information has been classified as Directory Information by Manhattan College and may be disclosed without a student's written authorization:

- Student name
- Address
- Electronic mail address
- Telephone number
- Dates of attendance
- Date and place of birth
- Major field of study
- Number of credit hours enrolled
- Grade level

- Degrees, honors, and awards received
- Participation in clubs and activities
- Photograph
- Weight and height of members of athletic teams
- Most recent educational institution

The College uses extreme discretion in releasing any student information to an outside source. While MC is legally entitled to release Directory Information, it generally does not disclose more than deemed necessary. The following items are defined as Personally Identifiable Information and can never be disclosed by the College:

- Social Security Number
- Race
- Gender
- Grades
- GPA
- Country of citizenship
- Religion

You have the right to request that any or all of your directory information not be released by Manhattan College. You may contact the Registrar with a written and signed notice not later than 2 weeks of beginning of the semester to withhold the release of any directory information you specify. This request is in effect until you provide written notice to the contrary.

You have the right to file a complaint with the U.S. Department of Education concerning alleged failures by Manhattan College to comply with the requirements of FERPA at:

Family Policy Compliance Office  
U.S. Department of Education  
600 Independence Avenue, S.W.  
Washington, D.C. 20202-4605



# Non-Discrimination Policy

## Non-Discrimination Policy

Manhattan College is committed to ensuring equal access to its educational programs and employment opportunities without regard to race, color, creed, religion, ethnicity, national origin, sex/gender identity/expression, sexual orientation, marital/partnership status, disability, age, citizenship status, veteran status, predisposing genetic characteristics, caregiver status, credit history, arrest/conviction record, unemployment status, status as a victim of domestic violence, sexual violence, or stalking, or any other legally protected status.

No person shall be denied admission or access to the programs or activities of Manhattan College, nor shall any person be denied employment at the College, solely because of any physical, mental or medical impairment within reasonable accommodations. Inquiries concerning this policy may be referred to Human Resources.

Auxiliary aids and academic adjustments within the guidelines of the ADA/Section 504 are provided without charge by the Specialized Resource Center, Thomas Hall, Room 3.15, Voice: (718) 862-7409, TTY: (718) 862-7885.

The Title IX and Age Act Coordinator is located within the Office of Human Resources, Memorial Hall, Room 305. The ADA/Section 504 Coordinator is located within the Specialized Resource Center, Miguel Hall, 300A.

# Location

The College is situated along Manhattan College Parkway on the heights above Van Cortlandt Park (242nd Street and Broadway) in the Riverdale section of New York City. It is a short distance from the 242nd Street station of the Broadway Seventh Avenue Subway, and can be easily reached from any part of the metropolitan or suburban areas. The exit of the Henry Hudson Parkway (West Side Highway) located at 239th Street several blocks to the west of the College puts the campus within easy reach of New Jersey. The College is also within easy commuting distance from Long Island and Westchester and Rockland counties because of its proximity to the New York State Thruway and the Major Deegan Expressway (exit at Van Cortlandt Park South or West 240th Street).

Campus Map (<http://manhattan.edu/admissions/tour/>)

## Directions to Manhattan College

### By Car:

#### From Long Island

##### ***Robert F. Kennedy Bridge (Triborough Bridge) (from South)***

Follow signs to Major Deegan Expressway North (I-87), exit at Van Cortlandt Park South, bear right off ramp and bear right onto Broadway. At second traffic light, turn left and then left again onto Manhattan College Parkway. Proceed up hill to main gate on right.

##### ***Whitestone or Throgs Neck Bridge (from East)***

To Cross Bronx Expressway (I-95), to Major Deegan Expressway (I-87) North, exit at Van Cortlandt Park South, bear right off ramp and bear right onto Broadway. At second traffic light, turn left and then left again onto Manhattan College Parkway. Proceed up hill to main gate on right.

#### From Upstate

##### ***Saw Mill River Parkway/Henry Hudson Parkway***

Traveling North: Exit at 239th Street. Go to stop sign, cross intersection and bear right onto Manhattan College Parkway. Proceed down hill to main gate on left.

Traveling South: Exit at 246th Street. Turn left at first traffic light, turn right onto Fieldston Road at circle and then turn left onto Manhattan College Parkway. Proceed down hill to main gate on left.

##### ***New York State Thruway (I-87) (from North)***

Thruway South (I-87) becomes the Major Deegan Expressway. Exit at Van Cortlandt Park South, turn right off ramp and bear right onto Broadway. At second traffic light, turn left and then left again onto Manhattan College Parkway. Proceed up hill to main gate on right.

#### From New Jersey

##### ***George Washington Bridge (from West)***

New Jersey Turnpike or Route 80 to George Washington Bridge. Follow signs to Henry Hudson Parkway North to 239th Street Exit (no commercial vehicles). At stop sign,

proceed straight across intersection (monument on left), pass traffic light and bear right at fork onto Manhattan College Parkway. Proceed down hill to main gate on left.

### **From New York City**

#### ***F.D.R. Drive (from South)***

F.D.R. Drive to Major Deegan Expressway North (I-87). Exit at Van Cortlandt Park South, bear right off ramp and bear right onto Broadway. At second traffic light, turn left and then left again onto Manhattan College Parkway. Proceed up hill to main gate on right.

#### ***West Side Highway (from South)***

West Side Highway to Henry Hudson Parkway North to West 239th Street Exit. At stop sign, proceed straight across intersection (monument on left), pass traffic light and bear right at fork onto Manhattan College Parkway. Proceed down hill to main gate on left.

### **From New England**

New England Thruway West to Cross Westchester Expressway, then onto New York State Thruway South. Exit at Van Cortlandt Park South, turn right off ramp and bear right onto Broadway. At second traffic light, turn left and then left again onto Manhattan College Parkway. Proceed up hill to main gate on right.

### **From Airports**

#### ***John F. Kennedy Airport (JFK)***

Take Van Wyck Expressway North to Grand Central Parkway to Robert F. Kennedy Bridge (Triborough Bridge), and follow the Long Island directions (above).

#### ***LaGuardia Airport (LGA)***

Take Grand Central Parkway to Robert F. Kennedy Bridge (Triborough Bridge), and follow Long Island directions (above).

#### ***Newark Liberty International Airport (EWR)***

Take N.J. Turnpike North to George Washington Bridge and follow the New Jersey directions (above).

#### ***Westchester County Airport (HPN)***

Go west on Tower Road toward Purchase Street (NY Route 120). Make a left turn onto Purchase Street (NY Route 120). Turn right onto the ramp. Merge onto the Hutchinson River Parkway South. Keep left to take the Cross County Parkway West (Exit 15) toward the George Washington Bridge. Take the Saw Mill River Parkway South exit toward NYC and follow the Saw Mill River Parkway (travelling south) directions above.

### **By Public Transportation:**

#### ***MTA Subway***

Take the 1 train to Van Cortlandt Park-242 Street (last stop). Walk up the hill on W. 242nd Street to main gate on right. For more information on subway schedules, visit [mta.info](http://mta.info).

#### ***Metro North***

Take the Hudson Line to Marble Hill. Exit the Marble Hill station, cross Broadway and enter the 1 train subway station at 231st Street. Then follow the MTA Subway directions above. For more information on train schedules, visit [mta.info](http://mta.info).

***Amtrak Train***

Amtrak trains arrive into New York City's Penn Station located in midtown approximately 12 miles from campus. Once arriving at Penn Station, you can take public transportation to campus per the directions above.

***MTA Bus***

Bus routes near the College are the 7, 10 and 24, all of which stop at W. 239th Street and Riverdale Avenue.

For more information on city bus schedules, visit [mta.info](http://mta.info).

***Bus from New Jersey***

Take bus to Port Authority Terminal at either W. 42nd Street or W. 178th Street.

Take the 1 train to Van Cortlandt Park-242 Street (last stop).

Walk up the hill on W. 242nd Street to main gate on right.

# College-wide Educational Goals

Core Competency		Learning Objective
1.	Effective Communication	Demonstrate an ability to: <ul style="list-style-type: none"><li>• 1.1 write in an effective manner based on audience, purpose, and context appropriate to discipline and medium.</li><li>• 1.2 communicate orally in an effective manner based on audience, purpose, and context appropriate to discipline and medium.</li></ul>
2.	Critical Thinking	Demonstrate an ability to analyze and synthesize information and arguments in order to ask appropriate questions and generate ideas aimed at drawing conclusions.
3.	Information Literacy	Demonstrate an ability to locate, evaluate, use effectively, and cite appropriately a variety of sources.
4.	Technology Literacy	Demonstrate an ability to identify, evaluate and use relevant technologies appropriate to disciplinary practices.
5.	Quantitative Literacy	Demonstrate an ability to: <ul style="list-style-type: none"><li>• 5.1 explain information presented in mathematical forms such as equations, graphs, diagrams, and tables</li><li>• 5.2 recognize how to approach problems by quantitative methods.</li></ul>
6.	Scientific Literacy	Demonstrate an ability to: <ul style="list-style-type: none"><li>• 6.1 Explain the fundamentals of the scientific method while identifying or formulating a testable scientific hypothesis</li><li>• 6.2 Explain relevant scientific concepts</li><li>• 6.3 Evaluate and interpret descriptions and representations of scientific data.</li></ul>
7.	Global Awareness	Demonstrate an awareness of:

		<ul style="list-style-type: none"> <li>• 7.1 perspectives and issues across both Western and non-Western societies</li> <li>• 7.2 diversity* within and across world cultures. *Diversity is defined as: individual and collective differences (e.g. age, sex, gender, physical abilities and characteristics, race/ethnic heritage, religious beliefs, sexual orientation, socio-economic status, as well as other expressions of difference).</li> </ul>
8.	Religious and Ethical Awareness	<p>Demonstrate an ability to identify and evaluate potential courses of action with regard to complex issues of self and society by taking into consideration:</p> <ul style="list-style-type: none"> <li>• 8.1 ethical perspectives that are consistent with Catholic social teaching and the Lasallian heritage, including respect for human dignity and a commitment to social, economic, and ecological justice;</li> <li>• 8.2 a range of philosophical and religious viewpoints, including but not limited to the Catholic intellectual tradition.</li> </ul>
9.	Independent and Collaborate Work	<p>Demonstrate the ability to:</p> <ul style="list-style-type: none"> <li>• 9.1 function as independent thinkers</li> <li>• 9.2 as members of a collaborative group.</li> </ul>

# Liberal Arts - General Information

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Students seeking entry to health professions schools are encouraged to enroll in the pre-health concentration. Students are not required to join the concentration in order to receive a HPAC committee evaluation letter; however, participation is recommended in order to be included in the competitive cohort that applies to health professions schools each year.

## Historical Note

Since its founding, Manhattan College has sought to broaden the intellectual horizons of its students while preparing them for the various professions. The School of Liberal Arts supports Manhattan College's tradition of liberal inquiry, reflection on faith in relation to reason, emphasis on ethical conduct and commitment to social justice by offering diverse foundation courses for all students, no matter their school or major. In addition, the School of Liberal Arts furthers Manhattan's emphasis on high academic standards by offering challenging majors in the humanities and social sciences and innovative interdisciplinary majors. These include courses taught by outstanding teacher-scholars committed to the advancement of knowledge in their classrooms and in their disciplines. Courses and majors emphasize the skills of analysis and criticism that are central to an understanding of the contemporary world, providing students with the informational and ethical base for that understanding and the written and oral skills necessary for its critique and communication. The faculty of Liberal Arts seeks to provide the broad, flexible, and thoughtful education essential for students to develop professionally, live successful and rewarding lives, and contribute effectively to a rapidly changing society.

## The Curriculum

The faculty of the School of Liberal Arts offers a program of education that provides students with the opportunity for a life of continuing growth and development in the twenty-first century. The core of the program is entitled The Roots of Learning. Its development was supported by a generous grant from the National Endowment for the Humanities.

Foundation courses include composition, modern language, religious studies, science, and mathematics. Students then proceed to studies of the modern age through courses in the humanities and social sciences. The program is structured to provide a common learning experience for all students in Liberal Arts.

## The Core: The Roots of Learning

The Roots of Learning represents a commitment to an educational program that judiciously combines content and process. The program seeks to:

- Equip students with the intellectual skills essential to a productive professional life of learning and leadership
- Immerse students in the traditions of humanism, the sciences, and the social sciences
- Provide the global perspective essential to living and growing in our ever smaller, but increasingly complex, world



- Develop critical reasoning and analytical skills through an intensive study of fundamental texts

## School of Liberal Arts Core Curriculum Requirements

All first-year students in the School of Liberal Arts take one First Year Seminar in Fall and one in Spring semester. One seminar should be in the humanities and one in the social sciences. These seminars, which are designated by the number 151, are small discussion-based and writing-intensive courses that meet the School of Liberal Arts Core Curriculum Requirements.

### General Requirements

College Writing (a first-year requirement)	3
Religious Studies	9
RELS 110            The Nature and Experience of Religion or RELS 152       Nature & Experience of Religion-FYS	
A course in Catholic Studies	
A course in Global Studies or Contemporary Issues	
Modern Language (a full year requirement of the same language; placement by Modern Languages Department)	6
Mathematics (course requirement dependent upon program specifications)	3
Science (Select three of the following courses): *	9
SCI 230            Great Ideas in Physics	
SCI 231            Chemistry in the Modern World	
SCI 201            Introduction Astronomy	
SCI 202            Introduction Geology	
SCI 203            Topics in Science I	
SCI 204            Topics in Science II	
SCI 221            Introduction Meteorology	
BIOL 103          Introduction to Biology	
Global/Non-Western	
Two courses from the total required for graduation must focus on global and/or non-western topics	
Computer Proficiency	
Computer proficiency in the area of major concentration demonstrated by passing a test on entrance or taking a computer course	
Total Credits	30

- \* Part of the science requirement may also be satisfied by a full year of chemistry, biology, or physics.

### Roots of Learning Core Requirements

LLRN 102            Classical Origins: West Culture	3
or LLRN 151        Classical Origins of Western Culture-1st Year Seminar	

The Roots of the Social Sciences (students choose three courses from the following four disciplines): 9

ECON 150	Roots: Economics *
PSYC 150	Roots: Psychology
or PSYC 153	Roots: Psychology - FYS
POSC 150	Roots: Government
SOC 150	Roots: Sociology
or SOC 153	Roots: Sociology - FYS

The Roots of the Modern Age (students take English, History, Philosophy, and either Art or Music): 12

ENGL 150	Roots: Literature
or ENGL 151	Roots: Literature-1st Year Seminar
HIST 150	Roots: History
or HIST 152	Roots: History - FYS
PHIL 150	Roots: Philosophy
or PHIL 152	Roots of Modern Age: Philosophy - FYS
ART 150	Roots: Art
or ART 151	Roots:Art -1st Year Seminar
or MUSC 150	Roots: Music
or MUSC 151	Roots:Music-1st Year Seminar

Total Credits 24

\* Courses open only to students in the School of Liberal Arts and the School of Science.

## The Major

A major is an extensive and detailed study of a particular discipline or a coherent combination of disciplines. Each student in Liberal Arts selects a major field of study. It is chosen on the basis of the individual's interests, educational and career goals, and abilities. Double majors are possible with careful planning, but students are encouraged to take as many elective courses as possible.

In Liberal Arts, the areas of specialization from which a student selects a major include the following fields:

- Art history
- Communication
- Economics
- English
- French
- History
- Philosophy
- Political Science

- Psychology
- Religious Studies
- Sociology
- Sound Studies
- Spanish

In addition, five interdisciplinary majors are available to students in Liberal Arts:

- Environmental Studies
- International Studies
- Labor Studies
- Peace and Justice Studies
- Urban Studies

These programs are designed to enhance a student's knowledge of a particular area of study not easily confined to a traditional academic department and to help the student develop an ability to address multiple perspectives.

Requirements for the major fields are listed under the department or program.

Students may not take more than 42 credits in their major without the permission of the Department Chair and the Dean. There is a residency requirement in the major for all transfer students: no more than 12 credits (9 credits in Communication) may transfer toward the major. Students are encouraged to develop a minor or a cluster.

## Minor Fields of Study

Minors may be earned in all departments and major programs offered by the School of Liberal Arts and in some interdisciplinary areas such as Catholic Studies, Critical Race & Ethnicity Studies, Digital Arts & Humanities, Ethics, Film Studies, Medieval Studies, and Women and Gender Studies. Minimum grade requirements for the minor are the same as those for the major. A minor consists of 15 credits. The same course cannot be used to satisfy the requirements of both a major and a minor.

Students in Liberal Arts may pursue minors in other schools at Manhattan: in Computer Information Systems, Finance, General Business, Management, and Marketing in the School of Business; a general Education minor without state certification in the School of Education & Health; or a minor in Science or in a specific Science or in Mathematics or Computer Science. Students must earn a grade of C or better in all courses taken for the minor in these schools. Students generally take no more than fifteen credits in Business or Education.

## Electives

Most programs in Liberal Arts include the opportunity for a student to select particular electives to meet individual needs. Often elective courses are selected on the basis of their relationship to the student's major field of study; they also enable students to develop a minor field of study, to structure a second major, or to explore new areas of knowledge.

Electives should not be selected without serious consideration. Students are advised to consult regularly with their advisors concerning their electives.

Students generally take no more than fifteen credits in Business, Education, Science, or Engineering. Any courses taken in these programs must be approved by the appropriate chair. Students interested in exercising any of these options must consult with the Academic Advisor in the School of Liberal Arts.

Please note: Credits earned in Aerospace Studies may not be used for any degree program in Liberal Arts. Students may not take more than three credits total in health and physical education courses.

## **Student Course Load**

Students may not take more than eighteen credits in the Fall or the Spring semester without the written approval of the Dean of Liberal Arts. Students may not take more than three credits in the January or May intersession or the summer session without the written approval of the Dean of Liberal Arts.

## **Bachelor of Science in General Studies**

The curriculum for the degree program in General Studies is an alternative to the usual undergraduate curriculum. It features an area of concentration rather than a major, and three areas of lesser concentration. Consequently, there is less specialization, but opportunity for broader and more structured general education. Each program provides core requirements in English, fine arts, history, mathematics and science, philosophy, psychology, religious studies, and sociology as a foundation for self-enrichment, appreciation, and understanding. The basic core requires forty-eight credits, including nine credits in religious studies.

A student is required to take one area of greater concentration (a minimum of eighteen credits beyond the core curriculum) in one of the following areas:

- Art history
- Biology
- Chemistry
- Computer science
- Economics
- Education
- English
- French
- History
- International studies
- Mathematics
- Peace and Justice Studies
- Philosophy
- Physics

- Political Science
- Psychology
- Religious studies
- Sociology
- Spanish
- Urban studies

No language courses at the 100-level count in the greater concentration and no more than two 200-level courses or six credits of AP may count toward the greater concentration. Students must achieve a grade of C or better in all courses in the greater concentration.

In addition, a student must follow three areas of lesser concentration (a minimum of twelve credits each beyond the core curriculum) in fields other than the area of greater concentration. Fields of lesser concentration may be selected from the following areas:

- Accounting
- Applied science
- Art history
- Business (general)
- Biology
- Chemistry
- Computer science
- Computer information systems
- Economics
- Education
- Engineering
- English
- Fine arts
- French
- General science
- History
- International studies
- Japanese
- Management
- Marketing
- Mathematics
- Peace and Justice Studies
- Philosophy
- Physics
- Political Science
- Psychology

- Religious studies
- Sociology
- Spanish
- Urban studies

No language courses at the 100-level count in the lesser concentration and no more than two 200-level courses or six credits of AP may count toward the lesser concentration. Students must achieve a grade of C or better in all courses in the lesser concentrations.

The balance of the program will include electives. A student's program should not include electives that exceed twenty-four credits in the field of greater concentration or eighteen credits in the fields of lesser concentration. No more than 18 credits in any combination may be taken in courses offered by the Schools of Business, Education, or Engineering, including courses taken in a concentration. No more than 3 credits may be taken in Physical Education and/or Health Education combined. Credits earned in Aerospace Studies do not count toward graduation in this program. Students in this program must take at least 75 credits in the liberal arts and sciences.

## Academic Advising

All freshmen and those sophomores who have not yet declared a major are advised by the Academic Advisor for the School of Liberal Arts. Students who have chosen their major are advised by the Chair of their department or their assigned delegate. Transfer students plan their first semester with the Academic Advisor.

## Study Abroad Opportunities

The School of Liberal Arts encourages students to broaden their educational horizons by participating in foreign study programs. In order to participate in such a program a student must have a minimum cumulative index of 2.75.

Liberal Arts is affiliated with the American Institute for Foreign Study and is also associated with the Institute for European Study and its campuses worldwide. Foreign study opportunities are available in many countries.

Further information about these and a wide range of other study abroad opportunities is available through the Office of Study Abroad and Director Ricardo A. Dello Buono, Ph.D.

## Credit for Off-Campus Courses

Once matriculated into a degree-granting program (major) at Manhattan College (College), a student may not take off-campus courses offered by another accredited institution for transfer to the College without prior written approval from the student's academic advisor and the student's dean. A maximum of **12** credits may be taken in off-campus courses after matriculation. Each school may set limitations on what types of courses may or may not be approved for its students that are consistent with the College's overall requirements.

Credit for courses taken at other institutions by matriculated students of Manhattan College will be recognized under the following conditions:

1. Required courses in a major or in a minor may not be taken off-campus except in extenuating circumstances and with compelling reasons, and with the approval of the chair of the major or minor program.
2. Only courses from accredited two- and four-year colleges and from accredited universities will be considered.
3. Written approval to take courses with departmental or school course numbers is obtained in advance. First, the chair of the department offering the course at Manhattan must approve the off-campus course based on the equivalency or substitutability of the course. Second, the Dean of the student's school must approve the off-campus course based on the chair's assessment and other circumstances. On-line courses are acceptable if approved. Approval to take courses without departmental or school course numbers may be approved by the dean.
4. The required form and transcript are filed with the Registrar and the required fee is paid to the Bursar.
5. The grade received at the other institution must be equivalent to or higher than the Manhattan College grade of C.
6. Grades earned at other institutions will not be transferred to the student's record at Manhattan College.
7. Study-abroad courses do not count toward the 12-credit maximum.
8. The required nine (9) credits of Religious Studies courses – RELS 110, a 200-level course in Catholic Studies, and a 300-level course from Global Studies and Contemporary Issues – are at the core of the Lasallian heritage of the College. Generally, these courses will be taken on-campus. These courses are offered in both in-class and online formats by the College. A required RELS course may be taken off-campus if the RELS program does not offer enough openings in the course. Any exceptions will only be permitted for **one** of the three-credit RELS courses and as part of the overall 12 credits allowed. Any RELS course taken off-campus to meet the nine credit hour requirement will require review for equivalency or substitutability by the dean of the School of Liberal Arts before approval by the student's dean.
1. Each School may adopt additional guidelines to meet specific accreditation or curricular requirements for its programs.

This policy will come into force starting the 2017-2018 academic year for all students enrolled at that time and subsequently.

## Honor Societies and Research Opportunities

The faculty of Liberal Arts, in order to encourage and reward the development of serious scholarship among its students, have established on campus a number of national honor societies. Chief among these are Phi Beta Kappa and Sigma Xi.

Phi Beta Kappa, founded in 1776, is dedicated to the ideal of excellence in scholarship in the liberal arts and sciences and is widely regarded as a mark of the highest distinction. The Manhattan College Chapter, the Upsilon of New York, was chartered in 1971. Students elected to Phi Beta Kappa are chosen from among those students who have achieved general scholastic excellence.



Sigma Xi is a national honor society founded in 1886 that encourages original research in the pure and applied sciences. Students are elected to membership on the basis of their accomplishments in research and their enthusiasm for continued scientific investigation.

In addition, most academic departments sponsor local chapters of national honor societies in their disciplines. The faculty are dedicated to encouraging student research efforts and are pleased to have students join them in their own research. Indeed, one of the hallmarks of Manhattan College is the frequency with which students and faculty join together in research projects.

Independent study courses are available in most departments for students seeking the opportunity to do advanced-level study with a faculty member in an area not ordinarily covered by regular coursework. In addition, many departments sponsor supervised internships and field-study opportunities through the department or through the Cooperative Education Program.

Of special note are the Branigan Scholars Grants. These grants, established in 1967 through the generous contributions of Edward Vincent Branigan '40 with matching gifts from major corporations and support from the National Endowment for the Humanities, provide summer stipends for students pursuing research projects independent of their course work.

## **Internships**

Opportunities for off-campus work experiences that carry course credit toward graduation are available to juniors and seniors in the School of Liberal Arts through internship courses offered by departments and programs. Internship courses are numbered 375 or 475. Frequent meetings with the internship advisor and a paper are required. Internships are arranged through the Center for Career Development and must be approved in advance by their chair or advisor and by the Dean of the School of Liberal Arts.

## **Graduate Awards and Fellowships**

Manhattan College is among a small, select group of American Colleges sending large numbers of students on to graduate schools. To continue this tradition, the college has developed programs to assist students seeking information about graduate programs and particularly about fellowships and scholarships for graduate study. Further information is available from the Center for Graduate School and Fellowship Advisement and from the departmental chairs.

## **Prelegal Advisory Committee**

Students interested in entering law school should seek guidance through the Prelegal Advisory Committee. In addition to personal interviews, the Committee conducts group meetings to advise students on specialized fields of law. The Committee also makes information available on requirements for admission to law schools, the availability of scholarships, and special opportunities in the legal profession. Further information is available from Professor Patricia Sheridan of the School of Business.

## Health Professions Advisory Committee

The Health Professions Advisory Committee is a body of faculty members from several schools who give guidance to students interested in preparing for careers in medicine, dentistry and allied fields. The Committee advises students on the selection of programs of study that will furnish them with specialized pre-professional courses in the sciences and with a broad liberal education to prepare them for effective participation in the health-care community. Further information is available from the Office of the Chair of the Health Advisory Committee, Dr. Bruce Liby of the Physics Department.

## Preparation for Medicine and Dentistry

Requirements are established by the Association of American Medical Colleges, the American Dental Association, and other professional associations in the health field. The pre-professional requirements in the sciences are met within the context of a broad liberal education. Pre-professional students are expected to maintain an average of at least a B in their science courses.

The minimum required courses for admission to professional schools are:

BIOL 111 & BIOL 112	General Biology I and General Biology II	8
BIOL 113 & BIOL 114	General Biology I Laboratory and General Biology II Laboratory	0
CHEM 101 & CHEM 102	General Chemistry I and General Chemistry II	6
CHEM 319 & CHEM 320	Organic Chemistry I and Organic Chemistry II	6
CHEM 323 & CHEM 324	Organic Chemistry Laboratory I and Organic Chemistry Laboratory II	4
ENGL 110	First Year Composition	3

**6 Credits of MATH are required.**

**Students should take:**

MATH 155	Calculus for the Life Sciences I	3
MATH 185	Calculus I	3
MATH 187	Honors Calculus I	3
MATH 230	Elementary Statistics	3

**Optional 2nd MATH course**

MATH 156	Calculus for the Life Sciences II	3
MATH 186	Calculus II	3
MATH 188	Honors Calculus II	3

**PHYS requirements:**

PHYS 101 & PHYS 191	Physics I and Physics I Lab	4
PHYS 102 & PHYS 192	Physics II and Physics II Lab	4

OR		
PHYS 107 & PHYS 197	Introduction to Physics I and Introduction to Physics I Lab	4
PHYS 108 & PHYS 198	Introduction to Physics II and Introduction to Physics II Lab	4
<b>Highly Recommended:</b>		
CHEM 433	Biochemistry I	3
BIOL 319	Cellular BioChemistry/Physiology	4
PSYC 150 or SOC 150	Roots: Psychology Roots: Sociology	3

*Specific schools may require or recommend other courses.*

*At least one course each in Biochemistry, Psychology, and Sociology are highly recommended by all medical [and dental] schools.*

Students seeking entry to health professions schools are encouraged to enroll in the pre-health concentration. Students are not required to join the concentration in order to receive an HPAC committee evaluation letter; however, participation is recommended in order to be included in the competitive cohort that applies to health professions schools each year.

# Outline of Course Requirements Leading to a Bachelor of Arts Degree with a Major in the Humanities or the Social Sciences Excluding Psychology

<b>First Year</b>	<b>Credits</b>	
LLRN 102		3
Roots Humanities or Social Sciences <sup>1</sup>		9
SCI <sup>2</sup>		3
Language both semesters <sup>3</sup>		6
RELS 110		3
ENGL 110		3
MATH <sup>4</sup>		3
		30
<b>Second Year</b>	<b>Credits</b>	
Roots Humanities or Social Sciences <sup>1</sup>		9
SCI <sup>2</sup>		6
Catholic Studies		3
Major and/or Elective		12
		30
<b>Third Year</b>	<b>Credits</b>	
Roots Humanities or Social Sciences <sup>1</sup>		6

RELS Global Studies/Contemporary Issues	3
Major and/or Elective	21
	30
<b>Fourth Year</b>	<b>Credits</b>
Major and/or Elective	30
	30
<hr/>	
Total Credits: 120	

- <sup>1</sup> Students choose three from Roots Social Science Courses: ECON 150 Roots: Economics, POSC 150 Roots: Government, SOC 150 Roots: Sociology, PSYC 150 Roots: Psychology. Students take the following Roots Humanities courses: ENGL 150 Roots: Literature; HIST 150 Roots: History; PHIL 150 Roots: Philosophy; ART 150 Roots: Art or MUSC 150 Roots: Music.
- <sup>2</sup> The science courses SCI 201 Introduction Astronomy, SCI 202 Introduction Geology, SCI 203 Topics in Science I, SCI 204 Topics in Science II, SCI 221 Introduction Meteorology, SCI 230 Great Ideas in Physics, SCI 231 Chemistry in the Modern World and BIOL 103 Introduction to Biology. In place of the nine credit SCI requirement, students may take a full year of one of the following: PHYS 101 Physics I, PHYS 102 Physics II or PHYS 107 Introduction to Physics I, PHYS 108 Introduction to Physics II, CHEM 101 General Chemistry I, CHEM 102 General Chemistry II, BIOL 111 General Biology I, BIOL 112 General Biology II, BIOL 113 General Biology I Laboratory or BIOL 115 Principles of Biology I, BIOL 116 Principles of Biology II or BIOL 117 Principles of Biology Laboratory I, BIOL 118 Principles of Biol Lab II, along with one SCI course in a different science.
- <sup>3</sup> Placement by Modern Language Department.
- <sup>4</sup> Students generally take MATH 151 Topics in Modern Mathematics, MATH 185 Calculus I or MATH 230 Elementary Statistics.

*Note: Students pursuing a B.A. are required to complete at least 99 credits in the Liberal Arts and Sciences.*

## Outline of Course Requirements Leading to a Bachelor of Arts Degree with a Major in Psychology

<b>First Year</b>	<b>Credits</b>
PSYC 214	3
LLRN 102	3
ENGL 110 (first or second semester)	3
RELS 110	3
MATH first or second semester <sup>4</sup>	3
Roots Humanities or Social Sciences first or second semester <sup>2</sup>	6
PSYC 150	3
Language both semesters <sup>1</sup>	6
	30

Second Year	Credits
PSYC 314	3
PSYC 414	3
Roots Humanities or Social Sciences <sup>2</sup>	6
PSYC Applied	3
Catholic Studies	3
Electives	6
SCI <sup>3</sup>	6
	30
Third Year	Credits
PSYC Social/Developmental	6
RELS Global Studies/Contemporary Issues	3
SCI <sup>3</sup>	3
Electives	15
Roots Humanities or Social Sciences <sup>2</sup>	3
	30
Fourth Year	Credits
PSYC Clinical/Cognitive/Physiological	9
Electives	21
	30
Total Credits: 120	

<sup>1</sup> Placement by Modern Language Department.

<sup>2</sup> Students choose two from Roots Social Science courses: ECON 150 Roots: Economics, POSC 153 Roots:Government - FYS or SOC 153 Roots: Sociology - FYS. Students take the following Humanities courses: ENGL 151 Roots: Literature-1st Year Seminar; HIST 152 Roots: History - FYS; PHIL 152 Roots of Modern Age: Philosophy - FYS; ART 151 Roots:Art -1st Year Seminar or MUSC 151 Roots:Music-1st Year Seminar.

<sup>3</sup> The science courses are SCI 201 Introduction Astronomy, SCI 202 Introduction Geology, SCI 203 Topics in Science I, SCI 204 Topics in Science II, SCI 221 Introduction Meteorology, SCI 230 Great Ideas in Physics, SCI 231 Chemistry in the Modern World and BIOL 103 Introduction to Biology. In place of the nine credit SCI requirement, students may take one full year of the following: PHYS 101 Physics I and PHYS 102 Physics II or PHYS 107 Introduction to Physics I and PHYS 108 Introduction to Physics II, CHEM 101 General Chemistry I and CHEM 102 General Chemistry II, BIOL 111 General Biology I, BIOL 112 General Biology II, BIOL 113 General Biology I Laboratory or BIOL 115 Principles of Biology I, BIOL 116 Principles of Biology II, BIOL 117 Principles of Biology Laboratory I, BIOL 118 Principles of Biol Lab II, along with one SCI course in a different science.

<sup>4</sup> MATH 230 Elementary Statistics is highly recommended for students pursuing a degree in Psychology.

*Note: Students pursuing a B.A. are required to complete at least 99 credits in the Liberal Arts and Sciences.*

## Outline of Course Requirements Leading to a Bachelor of Science Degree with a Major in Psychology

First Year	Credits
LLRN 102	3
Language both semesters <sup>1</sup>	6
One of the following groups	8
BIOL 111 & BIOL 113	
BIOL 112 & BIOL 114	
ENGL 110 (first or second semester)	3
MATH 185 or 230	3
PSYC 150	3
PSYC 214	3
	<hr/> 29
Second Year	Credits
One of the following groups	8
PSYC 314	3
BIOL 207 & BIOL 208	8
RELS 110	3
PSYC 414	3
CHEM 101 & CHEM 102	
PHYS 107 & PHYS 108	
Electives	3
Roots Humanities or Social Sciences <sup>2</sup>	6
	<hr/> 34
Third Year	Credits
Roots Humanities or Social Sciences <sup>2</sup>	12
Catholic Studies	3
Electives	3
PSYC Applied/Developmental/ Psychological/Social	12
	<hr/> 30
Fourth Year	Credits
Electives	18

PSYC Cognitive/Clinical	9
RELS Global Studies/Contemporary Issues	3
	30

Total Credits: 123

- <sup>1</sup> Placement by Modern Language Department.
- <sup>2</sup> Students choose two from Roots Social Science courses: ECON 150 Roots: Economics, POSC 150 Roots: Government, or SOC 150 Roots: Sociology. Students take the following Humanities courses: ENGL 151 Roots: Literature-1st Year Seminar; HIST 150 Roots: History; PHIL 150 Roots: Philosophy; ART 151 Roots: Art -1st Year Seminar or MUSC 151 Roots: Music-1st Year Seminar.

# Summary of Course Requirements Bachelor of Science - General Studies

ENGL 110	First Year Composition	3
ENGL Elective <sup>1</sup>		3
One of the following:		3
ENGL 210	Advanced First Year Composition	
ENGL 211	Written Communication	
ENGL 240	Introduction to Creative Writing	
ENGL 326	Writing Studies	
ENGL 333	Sin and Syntax: Grammar, Identity, and the Writer	
HIST Elective		3
POSC Elective		3
Three courses from SCI, MATH or CMPT		9
FINE ARTS Elective		3
RELS (110, Catholic Studies, and Global Studies/Contemporary Issues		9
SOC Elective		3
PHIL Elective		3
PSYC Elective		3
Field of Greater Concentration <sup>2</sup>		18
Three Fields of Lesser Concentration <sup>3</sup>		36
Seven courses chosen as free electives <sup>4</sup>		21
Total Credits		120

- <sup>1</sup> Students may not fulfill this requirement with ENGL 106 Introduction to Composition, ENGL 210 Advanced First Year Composition, ENGL 211 Written Communication, ENGL 240 Introduction to Creative Writing, ENGL 255 Introduction to Film Studies, ENGL 256 Types of Film Experience, ENGL 326 Writing Studies, ENGL 331 History of the English Language or ENGL 333 Sin and Syntax: Grammar, Identity, and the Writer.
- <sup>2</sup> Students will be required to complete a minimum of eighteen credits beyond the core requirements.

- <sup>3</sup> *Students will be required to complete a minimum of twelve credits in each of three disciplines beyond the core requirements.*
- <sup>4</sup> *Students registered in General Studies are not permitted to exceed 18 credits in any combination of business, education, engineering, or applied science courses.*



# Catholic Studies

Dr. Natalia Imperatori-Lee  
Program Coordinator

The Catholic Studies minor offers students in all majors the opportunity to study in depth the many, complex aspects of this important subject: Catholic beliefs, religious practices, moral teachings; Catholicism in history and literary texts; philosophical foundations; artistic manifestations; race/class/gender factors; social justice issues; and Catholicism in everyday life. Because Catholicism is not just an institution or a set of cultural traditions, students explore the subject systematically across disciplines, including Fine Arts, Literature, History, Philosophy, and Religious Studies. In fostering a deeper understanding of faith, values, experience, and ethics with regard to the Catholic imagination, Catholic Studies resonates with the mission of Manhattan College. A minimum grade of C in all courses is required for credit toward the minor.

Note: The Department of Religious Studies also offers a concentration in Catholic Studies as an option in its major and minor.

## Minor

### Requirements for a Catholic Studies Minor

A Catholic Studies minor comprises 15 credits to be taken from the following three categories. If possible, students should take at least one course focusing on Catholicism outside of Europe and the United States:

1. Foundations. Take one of the following:	3
RELS 213	Catholic Thought
RELS 225	Contemporary Catholicism
2. Disciplinary areas. Take one course from three of the following areas:	9
Fine Arts	
ART 260	Monasticism and the Arts
MUSC 240	Catholic Mass and its Music
History	
HIST 304	Europe in the Middle Ages
HIST 318	Mexico, Central America and the Caribbean
HIST 319	The Crusades
Literature	
ENGL 280	Irish Literary Revival
SPAN 350	Masterworks in Spanish I
Philosophy	
PHIL 315	Medieval Philosophy
PHIL 210	Faith and Reason
3. Elective. Take an additional course from the above areas or one of the following:	3
ART 321	Medieval Art
ART 322	Renaissance Art

HIST 225	Modern Latin America
HIST 305	Early Modern Europe
ITAL 340	Medieval and Renaissance Italian Civilization
Any 200-level Religious Studies course	
PHIL 401	Major's Seminar
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Total Credits	

# Critical Race & Ethnicity Studies

Program Coordinator  
David Witzling

This interdisciplinary minor program explores processes of racial and ethnicity formation both globally and within the United States, and it encourages comparative study of such formations. It treats the experiences of people of color as central, focusing on how they have challenged their subordination. It includes the study of groups that have been defined by their proximity to “whiteness,” aiming to forge solidarity on behalf of the oppressed.

The program requires a minimum of 15 credit hours, distributed as follows:

Required core course (**3 credits**):

CRES 150: Introduction to Critical Race and Ethnicity Studies

Four electives (**3 credits each**), which must include:

\*at least one 300-level course in a social science department (Government, Psychology, Sociology)

\*at least one 300-level course in a humanities department (English, History, Modern Languages and Literatures, Philosophy, Religious Studies, Visual and Performing Arts)

# Communication

Dr. Michael Grabowski  
Chair of the Department

With the opportunity to specialize in six different concentrations, the major in Communication is designed to prepare students for a career in the media industry while helping them to develop habits of ethical practices. Balancing theory and practice, coursework in Communication encourages thinking about the use of media by citizens and consumers, the impact of media on individuals and cultures, and the necessity of journalism to provide the information necessary to support a participatory democratic system of governance.

Irrespective of their concentration, all graduates should be aware of certain core values and competencies and be able to:

- Understand and apply the principles and laws of freedom of speech and press, as well as understand the range of systems of freedom of expression around the world, including the right to dissent, to monitor and criticize power, and to assemble and petition for redress of grievances;
- Demonstrate an understanding of the history and role of professionals and institutions in shaping communication;
- Demonstrate an understanding of gender, race, ethnicity, sexual orientation and, as appropriate, other forms of diversity in domestic society in relation to mass communication;
- Demonstrate an understanding of the diversity of peoples and cultures and of the significance and impact of mass communications in a global society;
- Understand concepts and apply theories in the use and presentation of images and information;
- Demonstrate an understanding of professional ethical principles and work ethically in pursuit of truth, accuracy, fairness and diversity;
- Think critically, creatively and independently;
- Conduct research and evaluate information by methods appropriate to the communication professions in which they work;
- Write correctly and clearly in forms and styles appropriate for the communication professions, audiences and purposes they serve;
- Critically evaluate their own work and that of others for accuracy and fairness, clarity, appropriate style and grammatical correctness;
- Apply basic numerical and statistical concepts;
- Apply tools and technologies appropriate for the communication professions in which they work.

## Majors

Students planning to major in the department must consult with the Chair by no later than their sophomore year. Transfer students with a background in communication must consult with the Chair and may present a portfolio of written and production-based work.

Requirements for a Major

33 credits including COMM 101 Introduction to Communication and Media to be completed during the first year, COMM 201 Ethics in Communication & Media to be completed by sophomore year, COMM 301 Media Theory & Research to be completed during junior year, and COMM 409 Senior Seminar to be completed during senior year. All Communication majors must also select a concentration as their main area of study within the department as early as possible and take five required courses in that area. In addition, they must take two elective courses from any area presuming the proper prerequisites. Juniors and seniors who qualify may apply for an internship, which may serve as one of their electives.

The six areas of concentration are:

- 1. Advertising
- 2. Integrated Marketing Communications
- 3. Journalism
- 4. Media Production
- 5. Public Relations
- 6. Sports Media Production

Students must take the following in their concentration:

Advertising

COMM 216	Introduction to Advertising	3
COMM 230	Advertising and Communication Research	3
COMM 304	Digital Storytelling	3
or COMM 305	Digital Print Design	
or COMM 306	Web Design	
COMM 315	Media Planning and Buying	3
COMM 414	Advanced Advertising Strategies	3

Integrated Marketing Communications

COMM 218	Introduction to Integrated Marketing Communications	3
COMM 230	Advertising and Communication Research	3
COMM 304	Digital Storytelling	3
or COMM 305	Digital Print Design	
COMM 307	Writing for Public Relations	3
COMM 414	Advanced Advertising Strategies	3
or COMM 420	Advanced Public Relations	

Journalism

COMM 209	Introduction to Journalism	3
COMM 213	Reporting and Newswriting	3

COMM 304	Digital Storytelling	3
COMM 318	Advanced Reporting/Newswriting	3
COMM 330	The Journalistic Tradition	3

## Media Production

COMM 222	Introduction to Story and Post-Production	3
COMM 304	Digital Storytelling	3
COMM 308	Studio Television Production	3
COMM 350	Field and Post-Production	3
COMM 419	Advanced TV Production	3

## Public Relations

COMM 217	Introduction to Public Relations	3
COMM 304	Digital Storytelling	3
or COMM 305	Digital Print Design	
or COMM 306	Web Design	
COMM 307	Writing for Public Relations	3
COMM 320	Strategic Planning in Public Relations	3
COMM 420	Advanced Public Relations	3

## Sports Media Production

COMM 225	Introduction to Sports Media	3
COMM 250	Sports Media Performance	3
COMM 310	Sports Media Production	3
COMM 350	Field and Post-Production	3
COMM 431	Advanced Sports Media Production I	3

\*It is recommended that students repeat COMM 431 twice for credit as COMM 432 and COMM 433

Additionally, Communication majors are required to minor or major in another discipline. The rationale behind this requirement is that work in the information industries is not only about producing content for audiences, readers, and users, but, more importantly, about the nature of that content and its purpose. Students must therefore seek to develop expertise in a specific content area.

## Requirements for a Minor

A minor in Communication consists of 15 credits. Students must take:

COMM 101	Introduction to Communication and Media	3
COMM 110	Public Speaking and Presentation	3
COMM 201	Ethics in Communication & Media	3

Electives. After completing the above three courses, minors may take any Communication course for which they have met the prerequisite.	6
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Total Credits	15
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The minor contract should be signed before registration for the second semester of the Junior year and must be approved by the Chair.

## Grade and Transfer Credit Requirements

Majors and minors must attain a minimum grade of C in all Communication courses. A maximum of three courses/nine credits from a communication or related department will be accepted for transfer from another institution.

## Communication Concentrations

### Advertising

#### Required Courses:

COMM 216	Introduction to Advertising	3
COMM 230	Advertising and Communication Research	3
COMM 304	Digital Storytelling	3
or COMM 305	Digital Print Design	
or COMM 306	Web Design	
COMM 315	Media Planning and Buying	3
COMM 414	Advanced Advertising Strategies	3

#### Recommended Electives:

COMM 110	Public Speaking and Presentation	3
COMM 209	Introduction to Journalism	3
COMM 214	Magazine Writing	3
COMM 217	Introduction to Public Relations	3
COMM 222	Introduction to Story and Post-Production	3
COMM 271	Transnational Mass Communication	3
COMM 304	Digital Storytelling	3
COMM 305	Digital Print Design	3
COMM 306	Web Design	3
COMM 316	Scriptwriting	3
COMM 340	Media Criticism	3
COMM 371	Intercultural Communication	3
COMM 375	Internship for Juniors	3
COMM 400	Political Communication	3
COMM 406	Mass Communication Law	3
COMM 422	Organizational Communication	3
COMM 423	Programming	3
COMM 461	Independent Study in Communication	3

COMM 470	Special Topic	3
COMM 475	Internship for Seniors	3

## Integrated Marketing Communications

### Required Courses:

COMM 218	Introduction to Integrated Marketing Communications	3
COMM 230	Advertising and Communication Research	3
COMM 304	Digital Storytelling	3
or COMM 305	Digital Print Design	
COMM 307	Writing for Public Relations	3
COMM 414	Advanced Advertising Strategies	3
or COMM 420	Advanced Public Relations	

### Recommended Electives:

COMM 110	Public Speaking and Presentation	3
COMM 120	Forensics/Debate	3
COMM 214	Magazine Writing	3
COMM 222	Introduction to Story and Post-Production	3
COMM 271	Transnational Mass Communication	3
COMM 304	Digital Storytelling	3
COMM 305	Digital Print Design	3
COMM 306	Web Design	3
COMM 315	Media Planning and Buying	3
COMM 320	Strategic Planning in Public Relations	3
COMM 340	Media Criticism	3
COMM 360	Corporate Video	3
COMM 371	Intercultural Communication	3
COMM 375	Internship for Juniors	3
COMM 400	Political Communication	3
COMM 406	Mass Communication Law	3
COMM 422	Organizational Communication	3
COMM 461	Independent Study in Communication	3
COMM 470	Special Topic	3
COMM 475	Internship for Seniors	3

## Journalism

### Required Courses:

COMM 209	Introduction to Journalism	3
COMM 213	Reporting and Newswriting	3
COMM 304	Digital Storytelling	3
COMM 318	Advanced Reporting/Newswriting	3



COMM 330	The Journalistic Tradition	3
Recommended Journalism Elective		
COMM 338	Feature Writing	

### Recommended Electives:

COMM 110	Public Speaking and Presentation	3
COMM 214	Magazine Writing	3
COMM 271	Transnational Mass Communication	3
COMM 304	Digital Storytelling	3
COMM 305	Digital Print Design	3
COMM 306	Web Design	3
COMM 335	Electronic Journalism	3
COMM 336	Sports Reporting and Writing	3
COMM 340	Media Criticism	3
COMM 371	Intercultural Communication	3
COMM 375	Internship for Juniors	3
COMM 400	Political Communication	3
COMM 406	Mass Communication Law	3
COMM 461	Independent Study in Communication	3
COMM 470	Special Topic	3
COMM 475	Internship for Seniors	3

## Media Production

### Required Courses:

COMM 222	Introduction to Story and Post-Production	3
COMM 304	Digital Storytelling	3
COMM 308	Studio Television Production	3
COMM 350	Field and Post-Production	3
COMM 419	Advanced TV Production	3
Recommended Broadcasting/Telecommunications Elective		
COMM 316	Scriptwriting	

### Recommended Electives:

COMM 100	Television Production Company	1
COMM 110	Public Speaking and Presentation	3
COMM 271	Transnational Mass Communication	3
COMM 304	Digital Storytelling	3
COMM 306	Web Design	3
COMM 317	Audio Production	3
COMM 335	Electronic Journalism	3
COMM 340	Media Criticism	3

COMM 360	Corporate Video	3
COMM 371	Intercultural Communication	3
COMM 375	Internship for Juniors	3
COMM 400	Political Communication	3
COMM 406	Mass Communication Law	3
COMM 423	Programming	3
COMM 461	Independent Study in Communication	3
COMM 470	Special Topic	3
COMM 475	Internship for Seniors	3

## Public Relations

### Required Courses:

COMM 217	Introduction to Public Relations	3
COMM 304	Digital Storytelling	3
or COMM 305	Digital Print Design	
or COMM 306	Web Design	
COMM 307	Writing for Public Relations	3
COMM 320	Strategic Planning in Public Relations	3
COMM 420	Advanced Public Relations	3

### Recommended Electives:

COMM 110	Public Speaking and Presentation	3
COMM 120	Forensics/Debate	3
COMM 216	Introduction to Advertising	3
COMM 271	Transnational Mass Communication	3
COMM 304	Digital Storytelling	3
COMM 305	Digital Print Design	3
COMM 306	Web Design	3
COMM 340	Media Criticism	3
COMM 360	Corporate Video	3
COMM 371	Intercultural Communication	3
COMM 375	Internship for Juniors	3
COMM 400	Political Communication	3
COMM 406	Mass Communication Law	3
COMM 422	Organizational Communication	3
COMM 461	Independent Study in Communication	3
COMM 470	Special Topic	3
COMM 475	Internship for Seniors	3

# Sports Media Production

## Required Courses:

COMM 225	Introduction to Sports Media	3
COMM 250	Sports Media Performance	3
COMM 310	Sports Media Production	3
COMM 350	Field and Post-Production	3
COMM 431	Advanced Sports Media Production I	3

\*It is recommended that students repeat this course twice for credit as COMM 432 and COMM 433

## Recommended Electives:

COMM 100	Television Production Company	1
COMM 110	Public Speaking and Presentation	3
COMM 209	Introduction to Journalism	3
COMM 213	Reporting and Newswriting	3
COMM 222	Introduction to Story and Post-Production	3
COMM 223	Introduction to Broadcasting	3
COMM 271	Transnational Mass Communication	3
COMM 304	Digital Storytelling	3
COMM 306	Web Design	3
COMM 308	Studio Television Production	3
COMM 316	Scriptwriting	3
COMM 317	Audio Production	3
COMM 330	The Journalistic Tradition	3
COMM 335	Electronic Journalism	3
COMM 336	Sports Reporting and Writing	3
COMM 338	Feature Writing	3
COMM 340	Media Criticism	3
COMM 360	Corporate Video	3
COMM 371	Intercultural Communication	3
COMM 375	Internship for Juniors	3
COMM 406	Mass Communication Law	3
COMM 423	Programming	3
COMM 461	Independent Study in Communication	3
COMM 470	Special Topic	3
COMM 475	Internship for Seniors	3

## Communication Courses

### **COMM 100. Television Production Company. 1 Credit.**

This one-credit course is open to non-majors, and is offered as a vehicle for students to produce a series of television programs during the semester for possible air on MCTV. The format and length of the programs may vary. This course does not carry credit toward the major.

### **COMM 101. Introduction to Communication and Media. 3 Credits.**

A survey of the major fields of communication and media, their history and evolution, with emphasis on new media and on the way media function in modern society.

### **COMM 102. Quadrangle I. 1 Credit.**

Basic elements of the news story, with emphasis on writing accurate, vivid campus news. Introduction to journalism ethics, news-gathering techniques, and copy-editing. By permission of instructor.

### **COMM 103. Quadrangle 2. 1 Credit.**

Survey of methods for writing features, investigative reports, editorials, and sports, with emphasis on documenting campus events and issues. By permission of instructor. Prerequisite: COMM 102.

### **COMM 104. Quadrangle 3. 1 Credit.**

An internship with the campus newspaper, the Quadrangle, in which students work in editorial positions and with the paper's advisor. Development of editing and news writing skills. Requires attendance at staff and editorial board meetings. Prerequisite: COMM 103.

### **COMM 110. Public Speaking and Presentation. 3 Credits.**

Basic principles of oral communication before audiences in a variety of settings, with emphasis on informing and persuading. Attention to research, rhetoric, logic and the use of technology to enhance public presentation.

### **COMM 120. Forensics/Debate. 3 Credits.**

An introduction to strategies of argumentation and persuasion in oral presentation. Emphasis on competitive debating. Prerequisites: COMM 101 and 110, or permission of the Chair.

### **COMM 201. Ethics in Communication & Media. 3 Credits.**

A survey and analysis of major ethical and legal issues in the mass communication industry, its business and production practices, and its content. Emphasis is on case studies from the industry. Prerequisite: COMM 101.

### **COMM 209. Introduction to Journalism. 3 Credits.**

A study of the print journalism industry in the United States, including the history and purposes of journalistic practice, the present-day workings of the profession and how the developments of electronic journalism and the Internet continue to impact and transform the role of journalism in political, civic, and social life. Prerequisites: COMM 101.

### **COMM 213. Reporting and Newswriting. 3 Credits.**

A study of basic procedures and techniques of reporting, writing, and editing the news with emphasis on developing clear, vigorous writing. Background readings in the media and American society. Writing is limited to relatively basic stories: accidents, conferences, interviews. Prerequisite: COMM 209.

**COMM 214. Magazine Writing. 3 Credits.**

Problems and methods in design, topography, and editing in magazine productions. Students learn how to research, write and market quality articles in magazine format. Prerequisite: COMM 213.

**COMM 215. Introduction to Advertising and Public Relations. 3 Credits.**

An introduction to the development of advertising and public relations as media practices and industries in the United States. Includes an analysis of the history and development of each, current practices and techniques from both a theoretical and a practical perspective, and the impact of and trends resulting from the introduction of new media. Prerequisites: COMM 101.

**COMM 216. Introduction to Advertising. 3 Credits.**

This course teaches the role of advertising in socio-economic environs, its social and ethical implications in the current environment of marketing and promotions, and its basic function in the enhancement of the value of goods and services. Course content is organized to broaden students' theoretical knowledge, sharpen reading and writing skills, and hone analytical thought. Prerequisites: COMM 101.

**COMM 217. Introduction to Public Relations. 3 Credits.**

The purpose of this introductory course is to orient students to the field of public relations, introduce theoretical and practical considerations that form the basis of the field, and provide a platform upon which to understand the market sectors that employ public relations professionals. The course includes an introduction to ethical standards that shape and govern the field, processes for conducting research and strategic planning in public relations, the mechanics of public relations writing, and the various 'publics' of any organization including internal and external stakeholders. Prerequisites: COMM 101.

**COMM 218. Introduction to Integrated Marketing Communications. 3 Credits.**

This introductory course begins to examine areas of marketing communications which includes branding, advertising, digital media and corporate communications. The course will cover strategic decisions in advertising, corporate communications and promotions, as well as consumer insights, creative decisions and execution, and media deliveries. Theories of communication will be studied to better understand audiences, dialogues, and messages. Case studies will further explore issues in each of these areas. Prerequisite: COMM 101.

**COMM 222. Introduction to Story and Post-Production. 3 Credits.**

An introduction to building documentary and fiction stories, narrative theory and aesthetics, and the technology and workflows of post-production. Nonlinear editing, visual and sound effects and mixing are covered. Pre-requisite: COMM 101.

**COMM 223. Introduction to Broadcasting. 3 Credits.**

A study of broadcasting in the United States from its origins to the present. Radio and television history, development, and technology are emphasized as well as an analysis of the broadcasting industry from both a practical and theoretical perspective. Prerequisites: COMM 101.

**COMM 225. Introduction to Sports Media. 3 Credits.**

A study of the sports-media-entertainment complex in the United States and the world. Includes the role of sports in society, the history of professional sports including the evolution of sports journalism and mass media production of sports, current industry practice, and emphasis on the future of sports media production and careers. The course concludes with an introduction to remote sports production. Prerequisite: COMM 101.

**COMM 230. Advertising and Communication Research. 3 Credits.**

This course concentrates on the role of qualitative and quantitative research in advertising. Through the use of discussion, case studies and projects, the course focuses on how advertisers and agencies use quantitative and qualitative methods including surveys, questionnaires, focus groups, in-depth interviews, and ethnography to uncover consumer insights. The course investigates the design and execution of these various kinds of research techniques and is a foundation for students wishing to pursue a career in advertising research and planning. Prerequisites: COMM 216 or COMM 218.

**COMM 250. Sports Media Performance. 3 Credits.**

An introduction to sports announcing and performance. Students learn and practice how to prepare, including the compiling and organizing of materials needed to professionally 'call' a game/event, and how to call play-by-play action and provide color commentary and analysis. Prerequisite: COMM 225.

**COMM 271. Transnational Mass Communication. 3 Credits.**

A study of the different types of mass media systems in the world, the media systems of the world's countries and territories, the ways in which globalization has affected mass media to bring about a global media culture, and the ramifications of global media culture for the future.

**COMM 301. Media Theory & Research. 3 Credits.**

This course examines core theoretical approaches to the study of mass media and communication and provides students with an historical and critical overview of theory and research on communication, everyday social practices, systems of representation, and media environments. The course includes discussions on research methods, including quantitative, qualitative, textual, and critical cultural studies. The class is designed as a prerequisite to Senior Seminar and culminates in a project proposal for the seminar course. Pre-requisites: COMM101 and COMM201.

**COMM 304. Digital Storytelling. 3 Credits.**

This course is designed to prepare students for professional work in a news organization that will require them to report stories in text, audio, and video formats. Course work involves significant practice in producing print copy as well as gathering and editing audio and video content, all while learning how storytelling techniques change in each medium. Pre-requisites: COMM209 or COMM216 or COMM 218 or COMM217 or COMM222.

**COMM 305. Digital Print Design. 3 Credits.**

Introduces students to fundamental components of writing, designing, and producing for graphic communication, including graphic design, color theory, digital typesetting, image manipulation, and aesthetics of form. Industry standard programs will be used as tools to shape ideas into visually engaging print and digital presentations. Pre-requisites: COMM209, COMM216 or COMM217 or COMM218.

**COMM 306. Web Design. 3 Credits.**

This course focuses on the developmental process of the Internet and the World Wide Web. The history of the technology and the strategies behind it will be covered, as well as HTML, the language of the Internet. The class will gain a greater understanding of the growing possibilities and advantages of using and communicating through interactive multimedia in the place of traditional media. Prerequisite: COMM 209, COMM 216, or COMM 217.

**COMM 307. Writing for Public Relations. 3 Credits.**

This course explores the various types of writing that are essential components of best public relations practices. The course is structured to include progressive assignments that culminate in a writing portfolio. Prerequisite: COMM 217 or COMM 218.

**COMM 308. Studio Television Production. 3 Credits.**

The elements of television production techniques including camera, audio, lighting, staging, graphics, on-camera appearance and directing. Prerequisite: COMM 101 or Film Studies Minor.

**COMM 310. Sports Media Production. 3 Credits.**

An introduction to the discipline and techniques of sports media production in a mobile production unit. Students learn the tasks required of the various production crew, the operation of all equipment, and the whole of the production process from assignment to wrap. Prerequisite: COMM 225.

**COMM 315. Media Planning and Buying. 3 Credits.**

An introduction to media planning and buying in and among all media formats. Focus is placed on the analysis of media vehicles as advertising venues, as well as on the analysis and development of target audiences and target markets, media objectives and strategies, and media plan construction. Prerequisite: COMM 230.

**COMM 316. Scriptwriting. 3 Credits.**

Planning and writing concepts for radio and television broadcasting in a variety of program areas. Prerequisite: COMM 222 or Film Studies Minor.

**COMM 317. Audio Production. 3 Credits.**

Techniques for audio engineering/processing and sound design for television production. Prerequisite: COMM 222.

**COMM 318. Advanced Reporting/Newsriting. 3 Credits.**

Students learn to handle complex, intellectually demanding material involving the real and pressing problems that exist in the world around them. Prerequisite: COMM 213.

**COMM 320. Strategic Planning in Public Relations. 3 Credits.**

This course focuses on the process of strategic planning within the public relations field, including the writing of plans, strategic relationships with upper management, and the forming of relationships with the media for mutual advantage. This practical course examines the fundamental processes inherent in best practices in public relations, taking a long-term, strategic view of tactics, tools, and campaign planning. Prerequisite: COMM307.

**COMM 330. The Journalistic Tradition. 3 Credits.**

An upper-level course designed to show aspiring journalists the historical and sociological frameworks of great journalism. They will explicate iconic works by famous journalists who practiced in a range of genres, and try their hand at replicating the forms of inquiry and narrative structures they see. They will finish the course with a final research paper that requires qualitative analysis. Pre-requisite: COMM209.

**COMM 335. Electronic Journalism. 3 Credits.**

This course focuses on broadcast journalism and news writing for radio and television. Both hard and soft news writing and broadcast news editing are emphasized, as well as an overview of the role of the electronic news media in American society. Prerequisite: COMM 222.

**COMM 336. Sports Reporting and Writing. 3 Credits.**

This course is an introduction to sports journalism. A study of basic procedures and techniques of sports reporting, writing, and editing for both print and electronic media will be emphasized. Prerequisite: COMM 213.

**COMM 338. Feature Writing. 3 Credits.**

Methods of researching and writing feature stories and commentary for the print media. Markets open to freelance writers, published articles, newspaper feature sections, and Sunday supplements. Prerequisite: COMM 213.

**COMM 340. Media Criticism. 3 Credits.**

A critical analysis of the mass media including major theories and research in the field. The course explores media institutions, content, and economic structure, and also offers an in-depth investigation into media effects and influence on individuals, society, and culture. Prerequisite: COMM 101.

**COMM 350. Field and Post-Production. 3 Credits.**

An introduction to the equipment, techniques, and practices of electronic field production (EFP) and electronic news gathering (ENG), as well as to non-linear editing equipment and techniques used to produce packages using footage collected in the field. Prerequisite: COMM 222; open only to media production concentration students.

**COMM 360. Corporate Video. 3 Credits.**

An introduction to the role and purpose of video production in corporate communication, including types of productions, their purpose, and how they are conceived and shaped for intended audiences. Basic productions will be carried out by the class. Prerequisite: COMM 217 or COMM 308.

**COMM 365. Game Design & Development. 3 Credits.**

This interactive course is designed to prepare students for professional work in game design and development. Coursework involves practice in producing game design, storytelling and strategy blueprints as well as gathering and creating gaming assets and using scripts, professional game engines and 3D modeling software.

**COMM 371. Intercultural Communication. 3 Credits.**

A study of the basic principles of intercultural communication and the impact of culture on one's perceptions, beliefs, meanings, and communication.



**COMM 375. Internship for Juniors. 3 Credits.**

Students participate in an off-campus training experience closely related to their area of communication. Frequent meetings with the advisor plus a paper are required.

Prerequisites: Junior status, 3.0 GPA, and permission of the student's advisor or the Chair.

**COMM 400. Political Communication. 3 Credits.**

Examines from a theoretical and practical standpoint the planning, execution, and evaluation of communication strategies in modern political campaigns.

**COMM 406. Mass Communication Law. 3 Credits.**

A course designed to cover the chief legal issues, especially in the regulated broadcast industries. Some legal problems to be considered: libel, national security, the meaning of the First Amendment, privacy, shield laws, the press and the courtroom, the Federal Communications Act, and the FTC versus the advertising industry.

**COMM 409. Senior Seminar. 3 Credits.**

Students will select a topic in their area of concentration, culminating in a major paper involving original research and an oral presentation in front of the class illustrated by audio-visual accompaniment. Prerequisite: Senior Status.

**COMM 414. Advanced Advertising Strategies. 3 Credits.**

Focuses on advanced issues in advertising and brand strategy development. Study and analysis of existing advertising campaigns, writing of creative and strategic briefs, and the planning, research, and presentation of a campaign are some areas that are explored. This course also explores new strategies for building relationships with consumers in a multicultural society. Prerequisite: COMM 315.

**COMM 419. Advanced TV Production. 3 Credits.**

Practical discussion of techniques in TV production. Practical experience is offered to improve lighting, proper use of special effects, and advanced graphics. Creativity is encouraged, utilizing the abilities acquired in television production. Prerequisite: COMM 308 and COMM 350; open only to media production concentration students.

**COMM 420. Advanced Public Relations. 3 Credits.**

The primary intent of this course is to examine public relations from a communicative perspective, integrating theory and practice. In doing so, students will participate in traditional class lectures and will be involved in all phases of the planning, implementation, writing for, and evaluation of a 'real life' PR campaign and/or event. Pre-requisite: COMM320.

**COMM 422. Organizational Communication. 3 Credits.**

The organizational structure of a company will be explored with emphasis on practical experience in interviewing, resume writing, audio-visual usage, symposia, and sales presentations. Field visits are included in the course.

**COMM 423. Programming. 3 Credits.**

Examines philosophies and techniques used in programming television and radio stations and networks. The organizational set-up of programming departments, development of competitive strategies for radio and television schedules, and insights into audience behavior and measurement are emphasized. Prerequisite: COMM 222.

**COMM 431. Advanced Sports Media Production I. 3 Credits.**

Students pre-produce and produce Jaspers Athletics games and events for live-streaming using the College's mobile production unit. Students serve in the various positions on a sports media production crew, including serving as talent to call games, and as a result gain professional production experience as part of their academic program. (The course can be repeated twice for credit, as COMM 432 and COMM 433.).

**COMM 432. Advanced Sports Media Production II. 3 Credits.**

Students pre-produce and produce Jaspers Athletics games and events for live-streaming using the College's mobile production unit. Students serve in the various positions on a sports media production crew, including serving as talent to call games, and as a result gain professional production experience as part of their academic program. (The course can be repeated twice for credit, as COMM 431 and COMM 433.).

**COMM 433. Advanced Sports Media Production III. 3 Credits.**

Students pre-produce and produce Jaspers Athletics games and events for live-streaming using the College's mobile production unit. Students serve in the various positions on a sports media production crew, including serving as talent to call games, and as a result gain professional production experience as part of their academic program. (The course can be repeated twice for credit, as COMM 431 and COMM 432.).

**COMM 461. Independent Study in Communication. 3 Credits.**

Independent study is designed for the student majoring in Communication with demonstrated proficiency to work independently on a project related to an area of communication and approved in advance by the Chair and the project advisor. Frequent meetings with the advisor are required. Independent study is not typically offered for production-based projects. Prerequisite: Junior status and a 3.0 GPA.

**COMM 470. Special Topic. 3 Credits.**

This course deals with a topic in communication to be announced. Each topic is selected by the department and is in a specialized area. The course is offered as demand warrants. See the Chair for topics, prerequisites, and other details. This course can be repeated under different topics.

**COMM 475. Internship for Seniors. 3 Credits.**

Students participate in an off-campus training experience closely related to their area of concentration. Frequent meetings with the advisor plus a paper are required. Prerequisites: Senior status, 3.0 GPA, and permission of the student's advisor or the Chair.

## Speech Courses

**SPCH 204. Fundamentals of Speech. 3 Credits.**

The techniques and preparation of informative and persuasive short speeches, and small group dynamics. Assessment of personal speech skills for effectiveness and self-improvement. Not open to students who have taken COMM 205 or COMM 110.

# Cultural Anthropology

The Cultural Anthropology minor is offered by the Department of Sociology. It is recommended for students who wish to supplement any major with the comparative and social scientific insights offered by Cultural Anthropology.

## Requirements for a Minor in Cultural Anthropology

Minors must take 15 credits, including the following:

SOC 202	Introduction to Cultural Anthropology	3
Four of the following courses:		12
SOC 204	Urban Anthropology	
SOC 217	Visual Anthropology	
SOC 317	Anthropology of Drugs	
SOC 328	Societies and Cultures of Latin America	
SOC 331	Workers and the Workplace	
SOC 335	Culture, Health, and Illness	
SOC 466	Research in Anthropology	
Total Credits		15

Students who wish to minor in Cultural Anthropology should see the advisor in the Department of Sociology. A minimum grade of C is required for all courses in the minor.

# Digital Arts & Humanities

Maeve Adams  
Program Director

Digital Arts and Humanities (DAsH) is an interdisciplinary minor that brings humanistic and social scientific studies into the digital age, applying multimedia tools to our inquiries. The DAsH Minor teaches data retrieval, analysis, and visualization skills as well as digital-media production that bolster training in the humanities and social sciences.

Irrespective of their Major, all DAsH Minors should be aware of certain core values and competencies and be able to:

- Graduate with competency in data retrieval, analysis, and visualization;
- Produce and edit digital media products;
- Perform data mining and -management techniques through course assignments and research projects (this includes archival research, data and text mining, and metadata production);
- Demonstrate analytical and quantitative abilities through class assignments, including large-corpus analysis, internet content management and analysis, and digital analysis in a variety of programs;
- Execute data mining, management, and data analysis through hands-on experience in a number of software and web-based programs;
- Use data visualization technologies to develop new methodological and conceptual approaches;
- Critically interpret and evaluate all tools, methods, and products of DAsH study.

15 credits including DASH 200 Introduction to Digital Humanities to be completed. Of the 15 credits, 12 can be comprised of other “electives” listed below.

Students must take the following to Minor in DAsH:

Students must take four (4) additional electives to Minor in DAsH. Students must take courses in at least three departments. Overall, the student will be expected—overseen by their advisor—to maintain a balance in their studies, aiming to take two courses in the Humanities and two courses in the Social Sciences. The DASH 200 course may count towards this expectation, counting as humanities or social science course according to the discipline of the faculty member teaching the course:

ART 212	Art of Digital Photography	3
ART 213	Digital Drawing	3
ART 214	Introduction to Graphic Design	3
ART 380	Digital Video Art: Editing and Production	3
COMM 101	Introduction to Communication and Media	3
COMM 201	Ethics in Communication & Media	3
COMM 209	Introduction to Journalism	3
COMM 222	Introduction to Story and Post-Production	3
COMM 225	Introduction to Sports Media	3

COMM 230	Advertising and Communication Research	3
COMM 271	Transnational Mass Communication	3
COMM 307	Writing for Public Relations	3
COMM 304	Digital Storytelling	3
COMM 305	Digital Print Design	3
COMM 306	Web Design	3
COMM 317	Audio Production	3
COMM 340	Media Criticism	3
COMM 371	Intercultural Communication	3
ENGL 335	Victorian Media	3
HIST 304	Europe in the Middle Ages	3
HIST 387	New York City and the American Urban Experience	3
MUSC 390	Digital Audio Recording and Editing	3
PSYC 214	Statistics and Research Methods I	3
PSYC 314	Statistics and Research Methods II	3
RELS 372	Religion and Science	3
RELS 376	Religion and the Media	3
SOC 217	Visual Anthropology	3
SOC 250	Introduction to GIS	3
SOC 303	Urban Planning	3
SOC 305	Urban Sociology	3
SOC 307	Research Methods	3
SOC 329	Political Economy of Global Migration	3

# Economics

## Major

Students enrolled in the School of Liberal Arts and who wish to pursue a major in Economics must take:

MATH 153	Linear Mathematical Analysis	3
MATH 154	Calculus for Business Decisions	3
BUAN 227	Business Statistics	3
ECON 203	Microeconomics	3
ECON 204	Macroeconomics	3
or ECON 150	Roots: Economics	
ECON 301	Intermediate Price Analysis	3
ECON 302	Intermediate Macroeconomics	3
ECON 305	Money and Banking	3
ECON 334	International Economics	3
ECON 433	Econometrics	3
Three approved electives in Economics		9

\*Or approved substitutes

A minimum grade of C is necessary to receive major credit.

## Minor

Students who are in Schools other than Business may pursue a minor in Economics. Students must obtain the permission of the School in which they are enrolled.

ECON 203	Microeconomics	3
ECON 204	Macroeconomics	3
or ECON 150	Roots: Economics	
Three approved electives in Economics		9
Total Credits		15

## Courses

### **ECON 150. Roots: Economics. 3 Credits.**

An explanation and critical examination of selected concepts in the social sciences. Students examine the logic and methods of social science research and engage in analysis of contemporary social issues from the perspective of the discipline of economics. The main emphasis of the course is to study the behavior of households and business firms in the marketplace. ECON 150 or ECON 203 is the prerequisite for ECON 204.

**ECON 203. Microeconomics. 3 Credits.**

An introductory study of the behavior of households and business firms in the marketplace, including households as consumers and resource suppliers, business firms as producers of goods and services and buyers of resources, market structures for outputs and inputs, role of the government, and free trade vs. protection.

**ECON 204. Macroeconomics. 3 Credits.**

An introductory study of the determination of the level of production and the price level in the macro economy. Topics covered include inflation and unemployment, money and banks, federal budget and national debt, monetary and fiscal policy, and economic growth and development.

**ECON 301. Intermediate Price Analysis. 3 Credits.**

Market and factor pricing under pure competition, imperfect competition conditions and monopoly; the pricing process and the allocation of resources. Prerequisites: ECON 203, ECON 204, BUAN 227.

**ECON 302. Intermediate Macroeconomics. 3 Credits.**

The nature and causes of unemployment and inflation and the debate over the policies used to fight these problems in a global economy. Prerequisites: ECON 203, ECON 204, BUAN 227.

**ECON 303. Mathematical Economics. 3 Credits.**

A course that applies linear algebra, calculus, and unconstrained and constrained optimization techniques to solve economic problems and perform economic analysis. Topics covered include equilibrium analysis, comparative static analysis, and optimization. Prerequisite: MATH 153 and MATH 154.

**ECON 305. Money and Banking. 3 Credits.**

This course considers the nature of money, the markets that allocate money to a variety of uses, the institutions that create and control the money stock, the flow of money and how it is related to employment levels, GDP, inflation and interest rates, and international financial matters. Much attention will be paid to problems and issues requiring the attention of policymakers. Prerequisites: ECON 203, ECON 204.

**ECON 332. Introduction to Environmental Economics. 3 Credits.**

An introductory study of the way economists approach environmental problems. Topics covered include externalities, market failure, public goods, common-pool resources, policy instruments (e.g. taxes, command and control policies, cap and trade, and tradable pollution permits, and cost-benefit analysis. Prerequisites: ECON 203 and MATH 154.

**ECON 334. International Economics. 3 Credits.**

A study of international trade and financial relationships. Topics covered include theory of international trade, public and private barriers to trade, commercial policy of the U.S., regional economic integration, foreign exchange markets, balance of payments, disequilibrium and the adjustment process, international monetary systems, and economic development of the developing nations. Prerequisites: ECON 203 and ECON 204, and by permission of instructor.

**ECON 375. Assimilating the Internship Experience in Economics.. 3 Credits.**

In consultation with the faculty advisor, students design and complete an independent project related to their Economics internship. This project aids in assimilating a practical off-campus work experience in business, industry, government or cultural organization with the students' studies and/or career interests. This course is subject to the approval of the Department Chair, Dean and Internship Coordinator of the School of Business. The student is required to pre-register with the Internship Coordinator and to obtain internship placement prior to the start of the semester. (Free elective).

**ECON 401. Advanced Microeconomics. 3 Credits.**

The course will focus on the analytical tools of modern microeconomics – especially game theory and information economics – and will apply these tools to economics problems such as imperfect competition, auctions, bargaining, price discrimination, moral hazard and adverse selection. Prerequisite: ECON 301.

**ECON 402. Seminar in Macroeconomics and Financial Markets. 3 Credits.**

Advanced topics in macroeconomics and financial market will be discussed. Emphasis will be placed on a theoretical understanding and the applications to forecasting cyclical and dynamic movements in the economy. Prerequisites: ECON 203 or ECON 150 or ECON 204, and ECON 302.

**ECON 403. Seminar in Monetary Theory and Policy. 3 Credits.**

Econ 403 is designed as a survey of modern monetary policies and theories. The primary objective of the course is to examine how unconventional monetary phenomena and policies are determined, and how they impact the domestic and foreign economies. The course will also provide rigorous training for the College Federal Reserve Challenge Competition. This competition is designed to bring real-world economics into the classroom - student teams assume the role of monetary policymakers by analyzing economic conditions and recommending a course for monetary policy. Prerequisite: ECON 302.

**ECON 405. Labor Economics. 3 Credits.**

A study of the labor market, employment and wage determination; theories that explain wage differentials and unemployment; and alternative policies that can reduce labor market problems. Prerequisites: ECON 203, ECON 204, BUAN 227 or by permission of instructor.

**ECON 412. Economic Growth and Development. 3 Credits.**

This course offers a broad overview of the economic problems that developing countries face along with policies to mitigate these issues. Topics may include poverty, inequality, institutional breakdowns, failures in education and health care systems, environmental degradation, the international trade regime, and financial crises. Prerequisites: ECON 203 or ECON 150 and ECON 204 or by permission of instructor.

**ECON 432. Applied Environmental Economics. 3 Credits.**

A study of the applications of economic theory and econometric methods to analyze environmental problems and to value environmental improvements. Topics include: game theory, behavioral economics experiments focused on common resources, public goods, and nudges, as well as revealed and stated preference methods and applications to value improvements to the environment. Prerequisites: ECON 203 and BUAN 227.



**ECON 433. Econometrics. 3 Credits.**

A systematic attempt of setting theoretical hypotheses about economic reality against empirical evidence produced by real-world situations and problems. Emphasis is on the process and application of statistical inference through the use of various distributions and on the estimation and measurement of relationships among economic variables. Prerequisites: ECON 203, ECON 204 and BUAN 227 or its equivalent.

**ECON 434. Advanced Econometrics. 3 Credits.**

Advanced Econometrics: It is the second of a two-course sequence that introduces the student to econometric analysis. EC444 focuses on Gauss Markov Theorem and its classical assumptions which guarantee that the OLS is the optimal estimator of the classical linear regression model. The course delves deeper into the consequences associated with violating the classical OLS assumptions and how to detect and correct for them. Course topics include the different functional forms of regression models, dummy variable regression models, multicollinearity, heteroscedasticity, autocorrelation, model specification and diagnostic testing, simultaneous-equation models, and identification problem. Prerequisites: ECON 433.

**ECON 441. Economics Seminar. 3 Credits.**

A program of supervised research and reading related to a theme or topic of economics. Open to a limited number of students majoring in economics or finance who meet the departmental requirements and have the approval of the Chair of the Department. Open to economics and finance majors only.

**ECON 444. Special Topic: in Economics. 3 Credits.****ECON 445. The Economics of Public Issues. 3 Credits.**

A study of the economics of contemporary public and social issues. Using micro- and macro-economic analysis, the course analyzes specific issues and events of inherently economic nature as well as issues and events of controversial and seemingly non-economic nature. It also examines policy alternatives and outcomes in the context of each issue. Topics include the economics of government spending and regulation, the environment, use of natural resources, health care and aging, education, crime, drug and alcohol use, sex and race discrimination, immigration, organ sale, property rights, poverty, global affairs, and others. Prerequisites: ECON 203 or ECON 150 and ECON 204 and BUAN 227.

**ECON 470. Economics Tutorial/Independent Study. 3 Credits.**

A single-semester tutorial course, related to a particular topic of economics, directed by a faculty member from the department. Open to qualified students who meet the departmental requirements and have the approval of the Department Chair and the Dean.

**ECON 471. Economics Thesis Project I. 3 Credits.**

An in-depth program of research, under the direction of a member of the department (mentor), leading to a comprehensive research proposal which includes a topic, a review of the literature, the research methodology, sources of data and potential results. Open to qualified students who meet the departmental requirements and have the approval of the Department Chair and the Dean.

**ECON 472. Economics Thesis Project II. 3 Credits.**

An in-depth program of research, under the direction of a member of the department (mentor), leading to a completion of the research project proposed in ECON 471 Thesis Project I. A defense of the thesis is required. Prerequisite: ECON 471 Thesis Project I.

**ECON 475. Assimilating the Internship Experience in Economics. 3 Credits.**

This course may be used as a second internship experience and/or with senior status.

(Free elective).

# English

Dr. Jeffrey Myers  
Chair of the Department

The goals of the English major at Manhattan College are to develop in students an understanding of literary texts and issues that is coherent, informed, and broadly responsive; to develop in students the ability to articulate that understanding orally and in writing through a critical vocabulary and a variety of methodological and rhetorical structures; and to develop that understanding in a range of courses in English literature, American literature, and world literature in translation.

**For students entering in Fall 2019 or later**

**Requirements for the Major in English. Thirty credits at the 300 level, including three foundational courses (9 credits) and six distribution courses (18 credits).**

**Foundational Courses**

ENGL 306	Introduction to Literary Study	3
ENGL 395	Senior Seminar	3
English 300 Elective a seminar each semester	Sophomore/Junior Seminar (one regular 300 level course will be designated as	3
Total Credits		9

**Elective Distribution Requirements**

All students must take three courses in the Literary History and National Traditions category (9 credits total) as follows:

Pre-18th Century (3 credits)  
18th and 19th Centuries (3 credits)  
20th and 21st Centuries (3 credits)

They must also take one course each from three of the following categories (9 credits total):

Theory, Media, and Praxis  
Global and Cultural Perspectives  
Writing  
Author and Genre  
Free Elective (3 credits)

**Literary History & National Traditions**

**Literary History and National Traditions** courses seek to foster students' knowledge of the complex history of literature and the development of specific literary traditions across a range of cultures, emphasizing the diversity of American and British cultures and resistance to those cultures. Analyzing continuities and changes, courses will offer a focused study of major literary periods, authors, and texts within their historical contexts.

**Three courses** from the following are required: one in pre-18th c. studies; one in 18th and 19th c. studies; and one in 20th and 21st c. studies. At least one course should focus on American literature.

### Pre-18th Century Studies

ENGL 309	British Literature: Beowulf to the Augustan Age	3
ENGL 312	Studies in Medieval British Literature	3
ENGL 323	Studies in Eighteenth-Century British Literature	3
ENGL 329	Shakespeare: Comedies, Histories, and Hamlet	3
ENGL 330	Shakespeare II	3
ENGL 331	History of the English Language	3
ENGL 343	The Art of Dying: Studies in Renaissance Literature	3
ENGL 369	Chaucer	3
ENGL 370	Milton	3

### 18th & 19th Century Studies

ENGL 310	British Literature II: The Romantics through the 20th Century	3
ENGL 334	Romantic Matter(s): Subjects & Objects	3
ENGL 335	Victorian Media	3
ENGL 372	American Literature to 1914	3
ENGL 374	Lust, Passion, and the Body: The American Novel to 1914	3
ENGL 375	Landscape & Identity: Studies in Early & Nineteenth Century American Literature	3

### 20th & 21st Century Studies

ENGL 305	African American Literature	3
ENGL 338	Studies in Twentieth-and Twenty-first-Century American Literature	3
ENGL 346	Twentieth Century Irish Literature	3
ENGL 364	The Modern & Contemporary British Novel	3
ENGL 373	American Fiction since 1914	3
ENGL 378	Modern American Literature	3
ENGL 379	Contemporary American Literature	3
ENGL 381	Studies in Identity: 20th Century American Drama	3
ENGL 376	American Poetry	3
ENGL 356	Latino New York: Cultural Identities and Expressions	3
ENGL 357	Postcolonial Caribbean Literatures: Defining a Region	3
ENGL 366	Modernism: Eliot, Woolf, Lawrence, and Company	3
ENGL 382	New York City, Modernity, and Postmodernity	3
ENGL 386	Literature and Early Cinema at the Turn of the Twentieth Century	3

### Theory, Media, and Praxis

**Theory, Media, and Praxis** courses devote specific attention to the study, critique, and/or application of particular theoretical paradigms that do not merely and implicitly guide learning objectives or methods of critical reading and writing but rather form an object of explicit inquiry and engagement in course readings and assignments. These courses may also introduce and investigate new media forms or practices for the dissemination, reading, and analysis of primary and secondary works, including new digital tools and platforms while also attending to the mediated nature of all literary and artistic communication.

ENGL 333	Sin and Syntax: Grammar, Identity, and the Writer	3
ENGL 334	Romantic Matter(s): Subjects & Objects	3
ENGL 335	Victorian Media	3
ENGL 337	Gender, Sexuality, and Literature	3
ENGL 345	Environmental Literature and Ecocriticism	3
ENGL 348	Postcolonial Literature	3
ENGL 358	Bibliomania, Archives, and the Afterlives of Books	3
ENGL 359	Technotopias & Cyborg Dreams	3
ENGL 360	The Little Magazine: Contemporary Literary Publishing	3
ENGL 367	Literary Criticism	3
ENGL 382	New York City, Modernity, and Postmodernity	3
ENGL 384	Violence & Performativity	3
ENGL 385	Film Narrative	3
ENGL 386	Literature and Early Cinema at the Turn of the Twentieth Century	3

### **Global and Cultural Perspectives**

**Global and Cultural Perspectives** courses focus on poetry, short stories, dramas, novels, and films that embrace and/or interrogate the complexities of human identity, either in a historical or a contemporary context. Students can expect to examine such issues as race, ethnicity, gender, sexual orientation, class, and national identity, with several courses prioritizing how these various identities intersect and inform one another. Many of the courses also inquire into various historical institutions (colonialism, slavery, etc.) and practices (immigration, globalization, war, etc.) that shape both practical and theoretical understandings of identity.

ENGL 305	African American Literature	3
ENGL 337	Gender, Sexuality, and Literature	3
ENGL 339	Poetics of Witness	3
ENGL 346	Twentieth Century Irish Literature	3
ENGL 347	Literature and War	3
ENGL 348	Postcolonial Literature	3
ENGL 356	Latino New York: Cultural Identities and Expressions	3
ENGL 357	Postcolonial Caribbean Literatures: Defining a Region	3
ENGL 374	Lust, Passion, and the Body: The American Novel to 1914	3

ENGL 380	Growing Up Ethnic: The Ethnic-American Bildungsroman	3
ENGL 381	Studies in Identity: 20th Century American Drama	3

### **Writing**

**Writing** courses provide an opportunity for students to practice and interrogate a range of literary genres (fiction, poetry, and creative non-fiction) while examining the cultural and literary responsibilities of the writer. Through active and close reading, as well as the rigorous practice of craft and technique, these courses invite students to see the writing of an imaginative text as a critical and cultural act that illuminates what the best literature always does: what it means to be human. These courses will include assignments and activities for students interested in publishing, teaching, and communications.

ENGL 326	Writing Studies	3
ENGL 332	Theories of Composition	3
ENGL 333	Sin and Syntax: Grammar, Identity, and the Writer	3
ENGL 340	Studies in Creative Writing - Poetry Workshop (Repeatable with Poetry)	3
ENGL 350	Studies in Creative Writing: Fiction Workshop	3
ENGL 355	Studies in Creative Writing: Non-Fiction Workshop	3
ENGL 360	The Little Magazine: Contemporary Literary Publishing	3

### **Genre & Author Studies**

**Genre and Author Studies** courses will interrogate and analyze the conventions, writers, and structures of literary genres (fiction, drama, poetry, and creative non-fiction) and specific subgenres, while also learning how texts both reflect and complicate their social, historical, and cultural contexts. Students will incorporate literary theory to amplify and enhance their understanding of form and content. Courses listed under author studies allow students to read deeply the works of a single author, or a select group of authors, in order to gain a rich and complex understanding of the scope and breadth of their work.

ENGL 323	Studies in Eighteenth-Century British Literature	3
ENGL 329	Shakespeare: Comedies, Histories, and Hamlet	3
ENGL 330	Shakespeare II	3
ENGL 347	Literature and War	3
ENGL 359	Technotopias & Cyborg Dreams	3
ENGL 364	The Modern & Contemporary British Novel	3
ENGL 365	Children's Literature	3
ENGL 366	Modernism: Eliot, Woolf, Lawrence, and Company	3
ENGL 369	Chaucer	3
ENGL 370	Milton	3
ENGL 373	American Fiction since 1914	3
ENGL 374	Lust, Passion, and the Body: The American Novel to 1914	3
ENGL 376	American Poetry	3

ENGL 381	Studies in Identity: 20th Century American Drama	3
ENGL 400	The Theater and the City	3

\*      Students in the School of Education with a concentration in Childhood Education must take ENGL 365 Children's Literature

Additional details about elective options for Education majors will be found in the Education section of this catalog.

A minimum grade of C is required for all major courses. ENGL 110 First Year Composition or its equivalent is a prerequisite for all 300 level courses.

## Minor

Requirements for a Minor in English: Fifteen credits on the 300 level including:

ENGL 306	Introduction to Literary Study	3
Elective		3
One 300 level class in Literary History and National Traditions		3
Of the three remaining 300 level courses, at least two must be from different categories		6
Total Credits		15

Students from the Schools of Business, Engineering, and Education may count one 200-level Literature course toward credit for the minor. A minimum grade of C is required for courses to satisfy these requirements.

## Courses

### **ENGL 103. Writing Lab: Introduction to Composition for Science Students. 2 Credits.**

This course introduces science students in the C-Step program to college-level expository writing. Focusing on writing and research about science, it pursues an inquiry-driven approach to teach analysis and argumentation. Students will develop a range of rhetorical skills as they learn the process of writing. Open only to C-STEP students. Permission of C-STEP Advisor.

### **ENGL 106. Introduction to Composition. 3 Credits.**

English 106 prepares students for English 110 through introductory level assignments designed to acclimate students to narrative, argumentative, and expository writing. The course employs a variety of exercises to teach students about the stages of composition: invention, revision, and reflection. Course assignments provide students with the intellectual tools to write argumentative essays.

**ENGL 110. First Year Composition. 3 Credits.**

English 110 pursues an inquiry-driven approach to writing and research, teaching rhetorical analysis and argumentation. The course emphasizes writing as an intellectual, social process both in terms of content and structure. Sections are thematically organized and use writing to explore that particular theme and frame writing as a process that involves stages of invention, revision, and reflection; course activities and assignments provide students with the rhetorical tools to understand how language works in defining reality, explaining positions, and persuading others. The course aims to prepare students for the responsibilities of literate adult citizenship and the rhetorical challenges of their chosen fields and careers.

**ENGL 150. Roots: Literature. 3 Credits.**

An intensive and critical examination of selected literary texts and developments from the medieval period to the present that contribute to an understanding of the modern world.

**ENGL 151. Roots: Literature-1st Year Seminar. 3 Credits.**

An intensive and critical examination of selected literary texts and developments from the medieval period to the present that contribute to an understanding of the modern world. First Year Seminar.

**ENGL 205. Reading & Writing the Theater. 3 Credits.**

A study of the art and craft of playwriting focused on dramatic structure, genre, and audience. The course combines analysis of significant plays from various historical periods and workshopping of students' original dramatic work.

**ENGL 209. Writing Consultant Training. 1 Credit.**

This course is designed to train students to be competent tutors in the Manhattan College Writing Center. By permission of instructor. Does not satisfy English literature requirement in Business, Education, or Engineering.

**ENGL 210. Advanced First Year Composition. 3 Credits.**

An advanced alternative to English 110, the course emphasizes writing as an intellectual, social process both in terms of content and structure. An exploration of strategies for expository and argumentative writing and research techniques, English 210 pursues an inquiry-driving approach to writing and research, teaching rhetorical analysis and argumentation. Emphasizing writing as a process that involves stages of invention, revision, and reflection, course activities and assignments provide students with the rhetorical tools to understand how language works in defining reality, explaining positions, and persuading others. This course will fulfill the ENGL 110 requirement for advanced freshman students placed by the Department Chair. Does not satisfy English literature requirement in Business, Education, or Engineering.

**ENGL 211. Written Communication. 3 Credits.**

An intermediate course focusing on the specialized communications skills required by professionals. Emphasis on research techniques and on the rhetoric and diction necessary to persuade different audiences, as demanded by a variety of case studies. (For students in the School of Business only). Does not satisfy their English literature elective.

**ENGL 212. Latino/Latina Literature. 3 Credits.**

The course examines key themes and narrative impulses of Latino/a literature. Students will engage the work of authors from a range of time periods. They will also study a variety of genres, such as novels, short stories, drama, poetry, and/or non-fiction essays.



**ENGL 240. Introduction to Creative Writing. 3 Credits.**

A study of the craft of poetry, fiction, and creative non-fiction writing. Exercises in form and technique and the creation of original stories and poems. Introduction to the creative writing workshop.

**ENGL 245. Introduction to Shakespeare. 3 Credits.**

Survey of the major histories, comedies, and tragedies.

**ENGL 248. British Literature and Culture. 3 Credits.**

Readings selected from the prose, poetry, and drama of the British Isles from the Anglo-Saxon period to the present.

**ENGL 253. American Literature and Culture. 3 Credits.**

Readings selected from the prose, poetry, and drama of America from the Colonial period to the present.

**ENGL 255. Introduction to Film Studies. 3 Credits.**

An introduction to the formal/aesthetic analysis of film. Through screening and discussion of representative films, students develop their ability to describe, analyze, interpret, and evaluate the film experience. Not open to students who have taken COMM 212. Does not satisfy English literature requirement in Business, Education, or Engineering.

**ENGL 256. Types of Film Experience. 3 Credits.**

An introduction to the cultural/ideological analysis of film. Through screening and discussion of representative films, students explore the ways in which cinema reflects and shapes contemporary society. Specific topics covered include, but are not limited to, race and ethnicity, gender and sexuality, and class and power as they relate to film experience. (Does not satisfy English literature requirement in Business, Education, or Engineering.) Repeatable with permission of the Chair.

**ENGL 260. Comedy and Tragedy. 3 Credits.**

An attempt to define comedy and tragedy by examining texts in each genre.

**ENGL 262. Gender and Literature. 3 Credits.**

An introduction to interpreting literature through the lens of gender. A specific theme (for example, women's writing, masculinity, gay and lesbian literature, the gendered body) will be explored in selected literary texts.

**ENGL 265. Global Literature in English. 3 Credits.**

A comparative study of selected literary texts by African, Asian, Caribbean, Australian, and Latin and North American writers responding to the impact of Western colonization and imperialism.

**ENGL 270. Crime and Detection. 3 Credits.**

The origin, development, and achievement of the detective story and the crime novel. Most readings will be drawn from 19th and 20th century authors, but some attention will be given to possible precursors such as Sophocles and Shakespeare.

**ENGL 274. Reading Poetry. 3 Credits.**

An introduction to the experience of reading, interpreting, and evaluating poetry.

**ENGL 275. The Short Story. 3 Credits.**

The origin, development, and theories of the genre as exemplified in short stories chosen from the major writers in this form.

**ENGL 276. Introduction to Drama. 3 Credits.**

A survey of world drama through selected play texts and representative dramatic styles, ranging from classical to contemporary.

**ENGL 279. Literature and the Environment. 3 Credits.**

The study of the important role the environment plays in literary texts. Themes may include the relationship between the urban and the wild, the role of animals in human affairs, and the question of human stewardship of this planet.

**ENGL 280. Irish Literary Revival. 3 Credits.**

A study of the major Irish writers of the late 19th and 20th centuries whose works constitute the modern Irish literary renaissance.

**ENGL 284. Myth and Fairy Tale. 3 Credits.**

An introduction to selected traditional myths and western European fairy tales, focusing on the literary rather than on the oral folk tradition and analyzing the pervasive influence of myth and fairy tale on modern western literature.

**ENGL 285. Literary New York. 3 Credits.**

A study of selected literary works in which New York City figures prominently as a subject, a metaphor, or a muse. Satisfies 200-level literature elective in Business, Engineering, and Education.

**ENGL 287. Fantasy and Science Fiction. 3 Credits.**

An introduction to speculative literature: fantasy, gothic, and science fiction; their relation to each other; the relation of the fantastic to fiction.

**ENGL 292. Topic in the Study of Literature. 3 Credits.**

An intensive study of a genre, period, literary form, or theme not currently listed in the general literature courses (200-level). The subject to be studied will vary from semester to semester. This course may be repeated with permission of the Chair.

**ENGL 305. African American Literature. 3 Credits.**

Examination of important texts by African-American authors, with special emphasis on recent writings.

**ENGL 306. Introduction to Literary Study. 3 Credits.**

Learning to think and write like an English major. Emphasis on close reading of texts, developing a heightened sense of language, making cogent literary arguments with well-integrated evidence, and developing familiarity with literary terms and different critical approaches. Should be taken during the first semester of major course-work. For English majors and minors only.

**ENGL 309. British Literature: Beowulf to the Augustan Age. 3 Credits.**

The development and continuity of British literature studied in significant writers, works, literary movements, social and historical backgrounds. For English majors and minors only.

**ENGL 310. British Literature II: The Romantics through the 20th Century. 3 Credits.**

Continuation of the study of key British writers, works, and literary movements and their social and historical backgrounds. For English majors and minors only.

**ENGL 312. Studies in Medieval British Literature. 3 Credits.**

An in-depth study of medieval writers, themes, genres, on literary movements through critical reading of prose, drama, and poetry of Great Britain. The subject to be studied will vary from semester to semester.

**ENGL 323. Studies in Eighteenth-Century British Literature. 3 Credits.**

An in-depth study of eighteenth-century writers, themes, genres, or literary movements through critical reading of prose, drama, and poetry from Great Britain. The subject to be studied will vary from semester to semester.

**ENGL 326. Writing Studies. 3 Credits.**

This course focuses on writing about or within a specific topic, genre, or theory to be announced in advance and will vary by semester. This course is writing intensive and offers students a practical, historical, and theoretical understanding of the art and craft of writing they may not otherwise have the opportunity to explore. Examples include, but are not limited to: Feminist and Critical Writing Pedagogies; Memoir Writing; and Multimodal Writing.

**ENGL 329. Shakespeare: Comedies, Histories, and Hamlet. 3 Credits.**

Beginning with *Romeo and Juliet* and culminating with *Hamlet*, this course explores the comedies, histories, and early tragedies that earned Shakespeare his reputation as England's leading dramatist. Class sessions will focus on close readings of the plays, the conditions under which they were originally performed, and the society and culture from which they emerged.

**ENGL 330. Shakespeare II. 3 Credits.**

This course explores the works that secured Shakespeare's status as the greatest writer in any language, including *Othello*, *King Lear*, and *Macbeth*. Class sessions will focus on close readings of the plays, the conditions under which they were originally performed, and the society and culture from which they emerged.

**ENGL 331. History of the English Language. 3 Credits.**

The development, structure, and function of the English language. (Does not satisfy English literature requirement in Business, Education, and Engineering.).

**ENGL 332. Theories of Composition. 3 Credits.**

An overview of contemporary composition studies, examining various movements in the field and the ways in which these movements define the act of writing. The course will focus on both theoretical principles of composition and practical concerns of writing pedagogy. Does not satisfy English literature requirement in Business, Education, and Engineering.

**ENGL 333. Sin and Syntax: Grammar, Identity, and the Writer. 3 Credits.**

This course provides an in-depth analysis of how grammar works by contextualizing grammar usage in a variety of contexts. We examine not only standard usage, but also language use in daily life, including the impact of emerging technologies on usage. Students will be encouraged to write academically as well as personally in order to cultivate a space where we can see grammar at work and how it helps us achieve the goals of our work—whether those goals be creative, academic, or otherwise.

**ENGL 334. Romantic Matter(s): Subjects & Objects. 3 Credits.**

An in-depth study of writers, themes, genres, and literary movements through critical reading of prose, drama, and poetry from the British Romantic period (1789-1832).

**ENGL 335. Victorian Media. 3 Credits.**

This course studies one of the world's great media revolutions. We investigate the full range of media technologies invented by British writers, artists and scientists during the reign of Queen Victorian (1837-1901): from the photograph, the telegraph, and the moving image to new forms of fiction, journalism, and advertising. We study art and literature that recount the experience of new media. Through readings in literary and media theory, we furthermore explore the social and political ramifications of those innovations.

**ENGL 336. History of the Essay. 3 Credits.**

An intensive study of the history and development of the essay genre. With an emphasis on historicizing the definition and function of the essay, this course investigates how issues regarding authorship and authority have evolved and contributed to how we understand the form today, including, but not limited to, its rhetorical and academic functions.

**ENGL 337. Gender, Sexuality, and Literature. 3 Credits.**

A study of the intersections of gender studies and literary analysis. Focusing on a specific theme (e.g. women's writing, the nature of gender, masculinity and race, queer identity), this course will study how literature shapes and is shaped by issues of gender and sexuality as they intersect with other markers of difference and power, including race, class, nation, ability, and species.

**ENGL 338. Studies in Twentieth-and Twenty-first-Century American Literature. 3 Credits.**

An in-depth study of twentieth and twenty-first century American writers, themes, genres, and literary movements through critical reading of prose, drama, and/or poetry.

**ENGL 339. Poetics of Witness. 3 Credits.**

An intensive study of poetics of witness in the creation and consumption of literature. The course will use various historical periods, geographic locations, and cultural and social movements to interrogate a poetry of witness.

**ENGL 340. Studies in Creative Writing - Poetry Workshop. 3 Credits.**

Advanced creative writing workshop in poetry with generative exercises, and with a focus on aspects of poetic craft such as images, figurative language, forms, rhythm, and poetic leaps. Students will develop voice, style, and technique. Each technique element will also be accompanied by an extensive study of contemporary poetic texts and poetic craft theory. Writing will culminate in small and large-scale workshops where students will read each other's work and learn to offer constructive feedback on revision.

**ENGL 343. The Art of Dying: Studies in Renaissance Literature. 3 Credits.**

Working at the intersection of literary and historical analysis, this course investigates how early modern writers responded to a culture-wide preoccupation with death and its relationship to commemoration. Authors include John Donne, Christopher Marlowe, and William Shakespeare.

**ENGL 345. Environmental Literature and Ecocriticism. 3 Credits.**

An exploration of environmental literature, a genre whose primary focus is the natural world and the human relationship to it. Primary literary texts will be viewed through the lens of ecocriticism, an emergent critical theory that examines the representation of the natural world in literature and culture with a commitment toward environmentalism.

**ENGL 346. Twentieth Century Irish Literature. 3 Credits.**

An examination, through readings in various genres, of the expressive and varied literature of Ireland in the 20th century as well as the development of cultural narratives of Ireland.

**ENGL 347. Literature and War. 3 Credits.**

A study of the representation in fiction, poetry, drama, and film of such catastrophic human conflicts as the World Wars and the Vietnam War.

**ENGL 348. Postcolonial Literature. 3 Credits.**

A sampling of world fiction (in English) written since the era of decolonization. Authors employ widely divergent techniques to address the issues of colonialism, history, politics, social change, and art. Emphasis on the novel as an arena for heterogeneity of sensibilities and the clash of ideologies.

**ENGL 350. Studies in Creative Writing: Fiction Workshop. 3 Credits.**

This course is designed for students to examine the short story form and to provide space to practice their own short story writing. By closely examining the ways in which some of the most influential short story writers have engaged with voice, style, characterization, plot, aesthetics, and experimentation, this course will help students develop a finer understanding of the elements of fiction.

**ENGL 355. Studies in Creative Writing: Non-Fiction Workshop. 3 Credits.**

Advanced creative writing workshop in non-fiction with generative exercises, and with a focus on developing the craft of lyrical essay techniques. Students will also develop voice and style. Each technique element will be accompanied by an extensive study of contemporary non-fiction texts. Writing will culminate in small and large-scale workshops where students will read each other's work and learn to offer constructive feedback on revision.

**ENGL 356. Latino New York: Cultural Identities and Expressions. 3 Credits.**

This course examines the literature and culture of Latinos in New York City. It explores how authors of Latin American and Spanish Caribbean descent have contributed and responded to New York City as a multilingual and multicultural modern metropolis and considers recurrent topics such race/ethnicity, class, bilingualism, and immigration.

**ENGL 357. Postcolonial Caribbean Literatures: Defining a Region. 3 Credits.**

This course provides an overview of postcolonial fiction, poetry, drama, and essays from the Caribbean region. It explores major themes and theoretical concepts on issues such as identity, migration, race, gender, nationhood, and representation, as well as the specific cultural and historical contexts from which postcolonial Caribbean literatures emerge.

**ENGL 358. Bibliomania, Archives, and the Afterlives of Books. 3 Credits.**

This course studies the material lives and afterlives of books. Working in digital archives and physical archives around New York City, students have hands-on experience of rare books and literary artifacts. Through experiential learning, students investigate printing practices, publication histories and preservation techniques. We learn to tell stories in and with archives, contemplating the manifold pasts and futures of books.

**ENGL 359. Technotopias & Cyborg Dreams. 3 Credits.**

This course studies works of fantasy and science fiction that explore the radical potential of technology. Considering the new worlds--the technotopias--envisioned by them, we explore a range of topics: the relationship between imagination and reality; the consequences of progress; the fear of/desire for newness and "the other"; and perhaps most exciting and unsettling of all, what it means to be human.

**ENGL 360. The Little Magazine: Contemporary Literary Publishing. 3 Credits.**

This course is an introduction to literary magazines and to the work of editing, examining the history of "little" magazines from the mid-nineteenth-century to the present day and investigating their impact on literary culture. We will take stock of the current magazine landscape, print and digital, with a special focus on Manhattan Magazine, for which students will also engage in active editing work.

**ENGL 361. Radical Stages: Modern and Contemporary British Drama. 3 Credits.**

Survey of celebrated and innovative British plays from the nineteenth century through the present. Close reading of text will supplement discussions of genre and production, alongside considerations of British history and politics.

**ENGL 364. The Modern & Contemporary British Novel. 3 Credits.**

A study of major innovations in the British novel from the early 20th century to the present. The course will explore the formal and stylistic upheavals of modernism, in relation to radically new ideas concerning gender, psychology, and social structures, as well as the legacy of these experiments through the contemporary period.

**ENGL 365. Children's Literature. 3 Credits.**

A study of widely read, influential and sometimes controversial books for children, surveying major achievements and genres in children's literature, examining various approaches to the field, and commenting on social and pedagogical issues that surround it. Limited to students in the School of Education.

**ENGL 366. Modernism: Eliot, Woolf, Lawrence, and Company. 3 Credits.**

An exploration of literary modernism in English as a phenomenon that swept European cities in the early twentieth century, which will consider experiments with literary form that meditate on the relationship of the individual consciousness to the material reality surrounding it. We will explore the modernist scene through intellectual contexts, periodical culture, and the relationship of literature to art.

**ENGL 367. Literary Criticism. 3 Credits.**

A study of major texts in criticism from Plato to the present, with special emphasis on the relation of critical theory to the experience of literature and on the relevance of the great critics of the past to current critical concerns. Does not satisfy English literature requirement in Business, Education, and Engineering.

**ENGL 369. Chaucer. 3 Credits.**

A study of the Canterbury Tales, Troilus and Criseyde, and the minor poems. Spring.

**ENGL 370. Milton. 3 Credits.**

A study of Paradise Lost, Paradise Regained, Samson Agonistes, and selected shorter works.

**ENGL 372. American Literature to 1914. 3 Credits.**

A study of major figures and significant trends in American Literature from the colonial era to 1914. For English majors and minors only.

**ENGL 373. American Fiction since 1914. 3 Credits.**

A study of significant trends in the novel and other forms of prose narrative written by United States-based writers in the twentieth and early twenty-first centuries. Some emphasis will be placed on the relationship between fiction and historical events, such as world war, civil and human rights movements, and globalization.

**ENGL 374. Lust, Passion, and the Body: The American Novel to 1914. 3 Credits.**

This course focuses on how issues of lust, passion, and the body figure in the American novel from the late eighteenth century to 1914. Students also will examine the rise of the novel as a genre (a relatively new art form at the time) and the crisis it evoked regarding reading, readership, and morality.

**ENGL 375. Landscape & Identity: Studies in Early & Nineteenth Century American Literature. 3 Credits.**

This course explores the converging representations of race, ethnicity, and the environment in American literature and culture from the seventeenth century to the nineteenth, with a theoretical grounding in critical race theory and ecocriticism. Texts will include both novels and non-fiction accounts, along with art, music, and period films.

**ENGL 376. American Poetry. 3 Credits.**

A survey of the American poetic tradition, from its beginnings to the present, with a focus on major authors, themes, and/or movements.

**ENGL 377. American Fiction Since 1914. 3 Credits.**

A study of American fiction in the modern and contemporary eras, focusing on key developments in the genre.

**ENGL 378. Modern American Literature. 3 Credits.**

A study of major writers and significant trends in American literature from 1914 to 1945: fiction, drama, poetry.

**ENGL 379. Contemporary American Literature. 3 Credits.**

A study of major writers and significant trends in American literature since 1945: fiction, drama, poetry.

**ENGL 380. Growing Up Ethnic: The Ethnic-American Bildungsroman. 3 Credits.**

This course examines the Ethnic American Bildungsroman, broadly construed, in order to understand how America's ethnic and racial diversity is expressed in literature and helps create a more inclusive national imaginary. We will study "coming-of-age" narratives by Native American, African American, Jewish American, Italian American, Asian American and/or Latinx writers, among others, and explore how their accounts of "growing up ethnic" broaden and challenge the boundaries of what constitutes representative U.S. literary voices.

**ENGL 381. Studies in Identity: 20th Century American Drama. 3 Credits.**

A study of major and transformative American dramas of the 20th and 21st century, from Arthur Miller and Eugene O'Neill to Sarah Ruhl and Paula Vogel. Course will consider what it is that defines these plays as "American," and how do these plays challenge previously held assumptions about identity, race, gender, and sexuality in America. Texts will be studied as literature and well as blueprints for theatrical events. That is, we will consider not just the text on the page but its performative aspects and its production history, wherever possible.



**ENGL 382. New York City, Modernity, and Postmodernity. 3 Credits.**

This course explores representations of New York in 20th and 21st century literature and culture. It covers various literary genres and other cultural forms. The primary focus is on New York's iconic presence in American literature and culture, emphasizing its status as an emblem of "modernity" and "postmodernity."

**ENGL 384. Violence & Performativity. 3 Credits.**

This course seeks to explore how select playwrights, across centuries and a variety of genres, have engaged violence as a means to represent and explore the human condition. This class will be guided by questions of what a damaged body onstage mean to an audience, how playwrights differ in their use of stage violence, and what the limits are, for scholars of theatre and performance, of understanding theatre as an efficacious form of public art and expression.

**ENGL 385. Film Narrative. 3 Credits.**

An intensive examination of the components and history of film narrative. Students view films and read critical essays and foundational theoretical works in order to gain an understanding of the unique mechanisms of film narrative (cinematography, sound, editing, etc.).

**ENGL 386. Literature and Early Cinema at the Turn of the Twentieth Century. 3 Credits.**

An examination of U.S. literature and select silent films from the turn into the twentieth century, which will study—and problematize—important categories of writing in this era such as realism, naturalism, local color, and novels of manners. Studying select silent films, students will show how authors in the era relied heavily on visual images and often borrowed strategies from early silent cinema.

**ENGL 392. Topics in Literature. 3 Credits.**

A major-level study of a genre, period, literary form, author, or theme not currently listed in the general literature courses. The subject to be studied will vary for each offering.

**ENGL 395. Senior Seminar. 3 Credits.**

A capstone course that examines 1. a literary period, genre, theme, or author(s); or 2. an issue, theme, theory or practice of composition or rhetoric through readings, class discussion, and student papers; student papers will emphasize research methodologies and will be presented and critiqued in class. The subject of the course will vary each semester. Required for senior English majors in the School of Arts and for those concentrating in adolescent or childhood English in the School of Education and Health.

**ENGL 399. Independent Study. 3 Credits.**

Individual study of a major writer or movement in English or American literature with a member of the department. Open only to seniors majoring in English who secure the approval of the Chair of the Department and the consent of the individual instructor. A student may elect this course once only.

**ENGL 400. The Theater and the City. 3 Credits.**

Taking full advantage of the spectrum of Broadway and Off-Broadway performance, this course invites students to experience theater as a multi-dimensional and collaborative art. Class discussions, on-site performances, and behind-the-scene accounts of selected theatrical events will enlighten the students' knowledge and appreciation of drama. (Special fee; permission of the chair.).



**ENGL 475. Internship. 3 Credits.**

Students participate in an off-campus training experience closely related to their area of study. Frequent meetings with the internship advisor and a paper are required. Internships are arranged through the Center for Career Development and must be approved in advance by the chair and the Dean of the School of Arts.

# Environmental Studies

Dart Westphal  
Program Director

Environmental Studies is an interdisciplinary course of study that promotes an understanding of the relationship between human beings and their environment. Open to all students of the College, the program is designed as a major or minor for students in the School of Liberal Arts and as a minor or second major for students in any other school. The program provides students with a liberal arts experience that focuses on the complex interrelationship among the scientific, political, economic, ethical, and aesthetic ideas that underlie environmental issues. The program has been designed for both science and non-science majors, serving to broaden their environmental education in ways that can help all students prepare for future careers in the fields of environmental policy or education, while giving students who plan careers in science or engineering a crucial background for understanding the social contexts in which their work will take place.

## Major

Requirements for a major in Environmental Studies

A minimum of thirty (30) credits, distributed as follows:

Sciences and Engineering: Students in the major must take a minimum of nine (9) credits in environmental science or engineering from the approved list of courses below. Students should be advised that there may be pre-requisites they must meet in order to take advanced science courses.

BIOL 223	Ecology	4
BIOL 231	Evolution	4
BIOL 304	Invertebrate Zoology	4
BIOL 305	Plant Biology	4
BIOL 326	Animal Behavior	4
BIOL 409	Marine Biology	4
BIOL 431	Freshwater Ecology	4
BIOL 432	Estuarine and Coastal Ecology	4
CEEN 305	Energy & the Environment	3
ENGS 204	Environmental Engineering Principles I	3
ENSC 101	Intro to Environmental Science	3
ENVL 316	Environmental Engineering Field Applications	3
MATH 151	Topics in Modern Mathematics *	3
SCI 203	Topics in Science I *	3
SCI 204	Topics in Science II *	3
SCI 323	Topics in Applied Conservation	3
ENSC 301	Environmental Science I	3
ENSC 302	Environmental Science II	4

- \* When these courses are on an environmental topic. Must be approved by the Environmental Studies program director.

Humanities and Social Sciences: Students in the major must take a minimum of eighteen (18) credits in the Humanities and Social Sciences from the approved list of courses below. **All students in the program must take POSC 223 Environmental Politics.**

CEEN 309	Environmental Law	3
ENGL 279	Literature and the Environment **	3
ENGL 345	Environmental Literature and Ecocriticism **	3
EVST 399	Independent Study in Environmental Studies	3
EVST 400	Field Project in Environmental Studies	3
HIST 377	Science, Technology, and Society	3
PHIL 205	Environmental Ethics	3
POSC 223	Environmental Politics	3
RELS 372	Religion and Science ***	3
RELS 377	Religion and Environmentalism ***	3
SOC 303	Urban Planning	3
URBN 302	Sustainable Cities	3
SOC 250	Introduction to GIS	3
SOC 350	Advanced Topics in Geographic Information Systems (GIS)	3
SOC 307	Research Methods	3
With permission of Director and Instructor		
ECON 332	Introduction to Environmental Economics	3
ECON 432	Applied Environmental Economics	3
SOC 334	Sustainable Development	3
POSC 210	Research Methods in Political Science	3
With permission of Instructor and Director		
With permission of Instructor and Director		
POSC 318	Community Organizing for Social Change	3
With permission of Instructor and Director		
RELS 204	Religion and Social Justice	3
With Permission of Instructor and Director		
RELS 205	Urban America and Catholic Social Teaching	3
With permission of Instructor and Director		

\*\* Only one English course permitted

\*\*\* Only one Religious Studies course permitted

Capstone: All students in the major must take the three-credit capstone course during their senior year.

EVST 490 Senior Seminar in Environmental Studies

A minimum grade of C is required for all courses counting toward the major.

## Minor

Requirements for a Minor in Environmental Studies:

Students in the minor must take at least fifteen (15) credits from the approved list of courses below. At least one course (but no more than two) must be from the approved list of science and engineering courses. Students should be advised that there may be pre-requisites they must meet in order to take advanced science courses. **All students in the program must take POSC 223 Environmental Politics.**

### Sciences and Engineering:

BIOL 223	Ecology	4
BIOL 231	Evolution	4
BIOL 304	Invertebrate Zoology	4
BIOL 305	Plant Biology	4
BIOL 326	Animal Behavior	4
BIOL 409	Marine Biology	4
BIOL 431	Freshwater Ecology	4
BIOL 432	Estuarine and Coastal Ecology	4
CEEN 305	Energy & the Environment	3
ENGS 204	Environmental Engineering Principles I	3
ENSC 101	Intro to Environmental Science	3
MATH 151	Topics in Modern Mathematics *	3
ENVL 316	Environmental Engineering Field Applications	3
SCI 202	Introduction Geology *	3
SCI 203	Topics in Science I *	3
SCI 204	Topics in Science II *	3
SCI 210	Introductory Oceanography	3
SCI 221	Introduction Meteorology	3
SCI 323	Topics in Applied Conservation	3
ENSC 301	Environmental Science I	3
ENSC 302	Environmental Science II	4

\* When these courses are on an environmental topic. Must be approved by the Environmental Studies program director.

### Humanities and Social Sciences:

CEEN 309	Environmental Law	3
ENGL 279	Literature and the Environment **	3
ENGL 345	Environmental Literature and Ecocriticism **	3
EVST 301	Special Topics in Environmental Studies	3
EVST 399	Independent Study in Environmental Studies	3
EVST 400	Field Project in Environmental Studies	3
HIST 377	Science, Technology, and Society	3

PHIL 205	Environmental Ethics	3
POSC 223	Environmental Politics	3
RELS 372	Religion and Science ***	3
RELS 377	Religion and Environmentalism ***	3
SOC 303	Urban Planning	3
URBN 302	Sustainable Cities	3
ECON 332	Introduction to Environmental Economics	3
ECON 432	Applied Environmental Economics	3
POSC 318	Community Organizing for Social Change	3
With permission of Instructor and Director		
POSC 210	Research Methods in Political Science	3
With permission of Instructor and Director		
SOC 250	Introduction to GIS	3
SOC 350	Advanced Topics in Geographic Information Systems (GIS)	3
SOC 334	Sustainable Development	3
SOC 307	Research Methods	3
With permission of Instructor and Director		
RELS 205	Urban America and Catholic Social Teaching	3
With permission of Instructor and Director		
RELS 204	Religion and Social Justice	3
With permission of Instructor and Director		

A minimum grade of C is required for all courses counting toward the minor.

\*\* Only one English course permitted

\*\*\* Only one Religious Studies course permitted

## Courses

### **EVST 090. Environmental Studies Elective. 3 Credits.**

### **EVST 301. Special Topics in Environmental Studies. 3 Credits.**

An intensive study of an environmental topic not currently listed in the course catalogue. The subject to be studied will vary from semester to semester.

### **EVST 399. Independent Study in Environmental Studies. 3 Credits.**

An in-depth independent study in any field of Environmental Studies, undertaken with a faculty member in the appropriate field. Open only to students enrolled in the Environmental Studies major or minor. Permission of the sponsoring faculty member and the Environmental Studies coordinator is required.

### **EVST 400. Field Project in Environmental Studies. 3 Credits.**

An experiential learning opportunity with an environmental organization or government agency - locally, domestically or abroad. Open only to students enrolled in the Environmental Studies major or minor. Permission of Environmental Studies coordinator is required.

**EVST 490. Senior Seminar in Environmental Studies. 3 Credits.**

In this course students will work as a group with a client — a governmental agency, public interest group, international organization, corporation, or research institution — on a significant issue in environmental policy. Designed as a capstone experience for students majoring in Environmental Studies, for whom it is a graduation requirement. Permission of the Environmental Studies program director required.

# Ethics

The interdisciplinary **Ethics Minor** helps students learn how to address ethical dilemmas that they may face at work and in their daily lives. In addition, students interested in exploring challenges that confront our nation and the world — global warming, resource management, inequality, discrimination — will also find the minor rewarding. Although geared toward real world ethical challenges, the minor will also provide the conceptual background necessary to respond to ethical dilemmas. The minor is open to all undergraduates at Manhattan College.

Students choosing the minor will be assigned a faculty adviser who will assist them in planning a course of studies suited to their interests.

The minor will require fifteen hours of coursework, two core courses and three electives.

The minor is intended to be interdisciplinary. A maximum of nine credit hours may be taken in one discipline.

## Core Requirements: 6 credits

PHIL 201	Ethics	3
PHIL 215	Ancient Greek Philosophy	3
Total Credits		6

## Electives: 9 credits

Courses that fulfill the elective requirement must cover a substantial amount of material on ethics, moral theory, or social justice.

The following are courses currently approved to fulfill the elective requirement. Courses will be added to the list, including new interdisciplinary ones, for example, Technology and Ethics, Cyberethics, and Biomedical Ethics. NOTE: Courses other than those listed below may be counted as electives at the discretion of the student's adviser and with the permission of department chairs and faculty in different disciplines.

PHIL 205	Environmental Ethics	3
PHIL 230	Philosophy of Law	3
PHIL 238	Philosophies of War and Peace	3
PHIL 325	Marx and Marxism	3
PHIL 334	Existentialism	3
PHIL 342	Chinese and Japanese Philosophies	3
PHIL 350	Philosophers on Race, Class, and Gender	3
RELS 362	Ethics in the Workplace	3
RELS 381	Religious Dimensions of Peace	3
COMM 406	Mass Communication Law	3

## Courses

# Film Studies

Dr. Margaret Toth  
Program Coordinator

The Film Studies minor is an interdisciplinary course of study that focuses on the history, analysis, and production of the medium of film. The minor is grounded in the principle that cinema itself has always been an interdisciplinary art form, borrowing from the traditions of theater, music, written narrative, photography, and--more recently--televisual and digital technologies. Students in the minor are encouraged to study the history and application of these related arts while also learning about the distinctive elements of cinematic aesthetics. At the same time, film is a form of cultural expression that holds the power to shape our understanding of the societies we live in, engaging such diverse subjects as history, politics, religion, and social identities. Several courses, therefore, ask students to make connections between the films we watch and the world we occupy.

The Film Studies Minor brings together, in a valuable and systematic way, multiple existing courses across at least six departments. The curriculum is organized so that students will gain a broad understanding of the evolution of film as an artistic medium while also having the opportunity to study various genres, modes of production, social issues, and philosophical approaches in depth. Students will also be able to take advantage of the multiple and unique opportunities to access film screenings and archives that our location in New York City provides.

## Minor

### Requirements for a Film Studies Minor

15 credits to include:

ENGL 255	Introduction to Film Studies	3
One of the following:		3
ENGL 256 or ENGL 385	Types of Film Experience Film Narrative	
Three additional courses chosen from the following:		9
ART 212	Art of Digital Photography	
ART 380	Digital Video Art: Editing and Production	
COMM 308	Studio Television Production	
COMM 316	Scriptwriting	
MUSC 390	Digital Audio Recording and Editing	
COMM 340	Media Criticism	
FREN 303	French Culture Through Film	
ITAL 303	Italian Through Film	
PHIL 228	Philosophy & Film	
RELS 218	The Bible & Film	
RELS 376	Religion and the Media	
SPAN 303	Spanish Culture Through Film	



**\*Requires permission of the department chair.**

With approval of the program coordinator, Special Topics courses focused on film may also count toward the elective requirements. A minimum grade of C is required for all courses. Only two courses from a single department count towards requirements for the minor.

# History

Dr. Jennifer Edwards  
Chair of the Department

A history major can be an ideal choice for a variety of careers. In addition to preparing students to be professional historians or researchers, it lays the foundation for professions such as law or teaching and for careers in business, public service, the military, the media, library science, and archival work.

## Major

Requirements for a Major in History. Students in the School of Liberal Arts who major in history must complete a minimum of 33 credits in history courses. These credits must include:

HIST 100	Experiencing History	3
HIST 300	Historical Methods	3
HIST 490	Senior Seminar	3
One of the following (or another 200-level course approved by chair):		
HIST 217	World History to 1600	3
or HIST 225	Modern Latin America	
or HIST 231	Introduction to African American History	
or HIST 240	East Asian Civilizations	
or HIST 242	African Civilizations	
Course designated as pre-modern		*
European History at 300-level or above		6
US History at 300-level or above		6
World History at 300-level or above		6
Additional 300-level Electives		3
Total Credits		33

\*can also fulfill another History requirement

A minimum grade of C is necessary to receive credit in the major. Students are encouraged to pursue opportunities for study abroad. In addition, internships in a wide variety of related fields are available for history majors.

Students in the School of Education who concentrate in Social Studies must complete 27 credits in history courses if they specialize in Adolescent Education, and 24 credits if they specialize in Childhood Education. These credits must include:

HIST 206	United States Through 1876	3
HIST 207	United States Since 1876	3
HIST 217	World History to 1600	3
HIST 218	World History Since 1600	3

Both Adolescent and Childhood Education majors must complete 6 credits in world history, at least 3 of which must be at the 300 level. In addition, Adolescent Education majors must complete HIST 300 Historical Methods and HIST 490 Senior Seminar. A minimum grade of C is necessary to receive credit in the major.

## Double-Major with Education

Students in the School of Education concentrating in Social Studies may earn a double-major in the History Department in the School of Liberal Arts. They must complete a minimum of 30 credits in history courses. These credits must include:

HIST 206	United States Through 1876	3
HIST 207	United States Since 1876	3
HIST 217	World History to 1600	3
HIST 218	World History Since 1600	3
HIST 300	Historical Methods	3
HIST 490	Senior Seminar	3
World History at 300-level or above		6
Additional 300-level electives**		6
Total Credits		30

\*\*History 100 may be counted as the second Additional 300-level elective.

A minimum grade of C is necessary to receive credit in the major.

## Minor

### Requirements for a Minor in History

15 credits of history courses, with most at the 300-level or above. The program is worked out individually with the department chair. A minimum grade of C is required to receive credit in the minor.

All history majors and minors are invited to participate in the social, co-curricular, and vocational activities of the department. The department houses a chapter of Phi Alpha Theta, the international history honor society. Outstanding history majors are elected to its membership. In addition, the department has two lecture series honoring the memory of past department chairs. An annual lecture in honor of Brother Casimir Gabriel Costello, F.S.C., features European history, and a biennial series focuses on topics in early American history in honor of Professor Robert Christen.

## Courses

### HIST 100. Experiencing History. 3 Credits.

This seminar course puts history into practice and focuses on experiential explorations of historical topics. Approaches and subjects will vary by instructor and semester, but might include role-playing immersion scenarios, walking tours, service learning, museum work, and archival research. Formal writing is required.

**HIST 124. American Civilization. 3 Credits.**

This course surveys the major political, social, and cultural events, movements, and ideas of the American past.

**HIST 150. Roots: History. 3 Credits.**

An intensive and critical examination of selected historical texts and developments from the medieval period to the present that contribute to an understanding of the modern world.

**HIST 152. Roots: History - FYS. 3 Credits.**

An intensive and critical examination of selected historical texts and developments from the medieval period to the present that contribute to an understanding of the modern world.

**HIST 204. History of the Ancient World. 3 Credits.**

This course examines the development, spread, and transformation of empires in the Mediterranean world during antiquity. Special emphasis will be on the poleis of Greece, the Hellenistic World, and the Roman Republic and Empire.

**HIST 206. United States Through 1876. 3 Credits.**

The United States, from its origins through the Civil War and Reconstruction, with an emphasis on the main political, economic, and social developments. Major wars and cultural trends will also be addressed, as well as the lives of important and representative individuals.

**HIST 207. United States Since 1876. 3 Credits.**

The United States since the end of Reconstruction, with an emphasis on the major political, economic, and social developments. Major wars and cultural trends will also be addressed, as well as the lives of important and representative individuals.

**HIST 210. Great Issues American History. 3 Credits.**

An examination of selected critical issues and events in the history of the United States.

**HIST 217. World History to 1600. 3 Credits.**

This course surveys the history of civilization before the seventeenth century. Focus will be on the developments of world cultures in Europe, South and East Asia, the Middle East, and Africa, as well as encounters between these regions. Topics will include the growth of cities, court culture, and the agricultural economies that supported them; global trade networks; spread of disease; religious movements, and military conflicts.

**HIST 218. World History Since 1600. 3 Credits.**

This course surveys the history of the world from the European encounter with the non-Western world to the present day. It will explore the major trends which have shaped the modern world, including the rise of modern states; the revolutionary era; the ideologies of socialism, liberalism, and nationalism; European imperialism, and the shifting balance of power in the postcolonial world.

**HIST 225. Modern Latin America. 3 Credits.**

An introduction to the history of the Spanish-speaking regions of the Western hemisphere beginning with the pre-Columbian period. Special attention will be given to the era since independence.

**HIST 230. History of the American Economy. 3 Credits.**

This course on the rise of American economy from the colonial period to the present will go beyond economic history to examine issues of politics, philosophy, and legal theory and their impact on economic developments. Special emphasis will be given to advancements in science and technology, the creation of educational systems, and the links between global economic conditions and the economy of the nation-state. The course will highlight themes of continuity and change that have characterized American economic history.

**HIST 231. Introduction to African American History. 3 Credits.**

Survey from before Columbus until the present, focusing on what is now the United States, including origins and growth of the trans-Atlantic slave trade, racial discrimination, resistance, the American Civil War, emancipation, Reconstruction, struggles against Jim Crow, black life under segregation, the civil rights struggles, and post-civil rights developments.

**HIST 240. East Asian Civilizations. 3 Credits.**

This course explores how the distinct cultures of China, Korea and Japan developed within a broadly shared civilization over the last 4000 years, but with an emphasis on early-modern and modern times. The focus is on socio-political, religious and cultural developments.

**HIST 242. African Civilizations. 3 Credits.**

This course introduces the geography and economy of the African peoples. A general survey of the continent and national case studies illustrate the differing regional experiences and diversity of African civilizations.

**HIST 290. Special Topics. 3 Credits.**

An introduction to a theme, problem, movement, or era in history.

**HIST 300. Historical Methods. 3 Credits.**

This course introduces students to the discipline of history. An overview of historical methodologies contributes to an understanding of how the craft of history is practiced and has evolved. Class assignments will develop and strengthen techniques of historical research, information literacy, and writing skills. Required for history majors and Adolescent Education majors concentrating in social studies and intended to be taken during the first or second semester of major course work. This course is open to others with permission of the instructor.

**HIST 304. Europe in the Middle Ages. 3 Credits.**

This course will explore the economic, social, and cultural history of Europe from the fifth through the fifteenth centuries. Major topics will include the transformation of the Roman Empire into Christendom; the development of the church with the rise of the papacy and monastic reform; Germanic migrations; consolidation of the medieval monarchy; the Commercial Revolution; scholasticism and the universities; pilgrimage and the cult of the saints; the crusades, heretical movements, and the medieval family.

**HIST 305. Early Modern Europe. 3 Credits.**

This course traces the transformation of Europe between the Renaissance and the French Revolution. Special emphasis will be placed on the wars of religion, the revolution in European military practice, the emergence of national states, the structure and function of the absolutist monarchies and, especially, the wide-ranging impact of the Enlightenment.

**HIST 306. History of the Modern Middle East. 3 Credits.**

This course is an introduction to the history of the modern Middle East with an emphasis on the twentieth century. The first four weeks of the course will briefly cover the Ottoman history of the Middle East from the sixteenth through the nineteenth centuries, and the remaining weeks will introduce important topics relating to twentieth-century Middle Eastern history, such as the creation of nation-states, the Israel-Palestine conflict, authoritarian regimes, Islamist movements, and the Arab Uprisings.

**HIST 307. Genocide and Racism. 3 Credits.**

This course investigates the emergence of modern racism and its expression as genocide. In-depth examinations of the events in Armenia, Rwanda, Bosnia, East Timor, Cambodia, and Darfur complement an exploration of the German attempt to annihilate certain groups like the Jews during World War II. Recommended for Education majors to satisfy state education laws in New York and New Jersey that require the teaching of the Holocaust in all schools.

**HIST 308. European Women to 1500. 3 Credits.**

This course examines the history of women in Europe from the ancient period through the end of the Middle Ages. Emphasis is on women's lives and experiences as well as representations of women constructed during the period. Topics include women's roles in religious communities, the family, the workforce, politics, and portrayals of women in literary, legal, medical, and religious discussions. Special emphasis is on women's perceptions of their social and cultural lives, described in their own words.

**HIST 312. Modern China 1839 - Now. 3 Credits.**

The modern transformation of China, its values and institutions, resulting from the impact of the West and revolution.

**HIST 313. Vietnam to the Philippines. 3 Credits.**

Political, social, economic change, and the kaleidoscope of outside intervention in modern Southeast Asia since the founding of Singapore in 1819.

**HIST 314. Modern Africa. 3 Credits.**

This course introduces the multiple histories, diverse cultures and complicated geography of modern Africa. Three areas: modern-day Algeria; Ghana; and South Africa will serve as case studies in order to place continent-wide trends in their local contexts and to explore key historical events and developments from a consistent perspective that will illustrate change over time. This course will also emphasize the dynamic role of Africans in the events and processes that have shaped modern Africa.

**HIST 318. Mexico, Central America and the Caribbean. 3 Credits.**

Political, economic, and cultural developments of the region, including the history of relations with the U.S.

**HIST 319. The Crusades. 3 Credits.**

The course examines the crusading energy of the High Middle Ages. Focus will be on the medieval imagination of the Latin West as Christendom and attacks on threats to that identity. Topics will include the strengthening of the papacy; the growth of chivalry; the history of Jerusalem and its crucial holy sites; relations between Christendom and the Byzantine Empire; the Islamic world; the Reconquista; the Albigensian Crusade; the rise of anti-Semitism; and the military orders.

**HIST 320. History of Rome. 3 Credits.**

This course examines the history of Rome from the city's foundation through the decline of its empire. Emphasis will be on the major political, social, military, and cultural developments of Rome's history.

**HIST 321. Special Topics. 3 Credits.**

An extensive study of a theme, problem, movement, or era in history.

**HIST 322. Special Topics. 3 Credits.**

An extensive study of a theme, problem, movement, or era in history.

**HIST 325. The Byzantine Empire. 3 Credits.**

The political, social, and cultural history of the Eastern Roman Empire from the fourth to the fifteenth centuries and its relations with Islam, the Latin West, and the Slavs.

**HIST 326. Diplomatic History of Europe 1815-1914. 3 Credits.**

The international relations among the European states from the Congress of Vienna through the era of Imperialism and the origins of the First World War.

**HIST 328. Cold War Diplomacy in Asia. 3 Credits.**

This course investigates Cold War diplomacy and international relations in the Asian context. Focus is not only on the politics and economics of international relations, but also on their interplay with societies, cultures and individuals. Topics include the Soviet-China split, the Korean War, the Vietnam wars, Nixonian diplomacy, and Japan's role as an aircraft carrier for American military bases.

**HIST 334. Diplomatic History of the Vietnam Wars. 3 Credits.**

This course explores the diplomatic history of the Vietnam Wars, approximately from 1945 to 1975. It treats these wars not as an American conflict, but as an international conflict between a multitude of actors, especially the Vietnamese themselves.

**HIST 337. England to 1688. 3 Credits.**

An overview of the history of the British Isles from antiquity to the Glorious Revolution. The creation of England as a unified kingdom with a centralized monarchy and its influence over Wales, Scotland, and Ireland. Emphasis will be on the power and personalities of the monarch and the nobility as well as on the lives of ordinary people. Roman Britain, the Anglo-Saxon period, Norman conquest, Plantagenet Empire, Hundred Years War, Tudor and Stuart dynasties, Anglican Reformation, civil war, plague, constitutionalism, monasticism, and the universities.

**HIST 347. The Sixties. 3 Credits.**

This important, contentious era in the United States will be examined from various angles, from the various protest movements to the conservative reaction, from music and cultural flowering to presidential politics. All of this will be analyzed in relation to the various historical interpretations of the era.

**HIST 348. Modern Japan. 3 Credits.**

This course introduces the history of Japan from the late Tokugawa period to the present day. The political, economic, social, cultural, and national dimensions of historical change compose the course's central focus, but the concept of identity is also strongly emphasized.

**HIST 351. Age of the French Revolution. 3 Credits.**

The course explores European history from the Enlightenment to the fall of Napoleon. The origins, course, and aftermath of the French Revolution will receive particular attention. Other themes include the Enlightenment, early industrialization, and the Napoleonic Empire.

**HIST 352. Nineteenth-Century Europe. 3 Credits.**

This course explores European history from the fall of Napoleon in 1815 to the start of World War I in 1914, with emphasis on the revolutions in 1830, 1848, and 1871, the acceleration of imperialism, nation-building, and the social transformations stemming from industrialization.

**HIST 353. Modern Germany. 3 Credits.**

The influence exercised in German history of the medieval empire, Luther, the Thirty Years War, Frederick the Great, and the Age of Revolution. A chronological treatment from 1848 to the present.

**HIST 354. History of the Soviet Union. 3 Credits.**

The course deals with the background, revolution, and establishment of the Soviet Union, focusing on both domestic developments and the role of the Soviet Union in world affairs. Special attention is given to the problems of continuity and change in Soviet policy between 1917 and 1991.

**HIST 355. East Europe in Modern Times. 3 Credits.**

A survey of the history of Eastern and Central Europe, the area between Germany and Russia, from the end of World War I to the present day. The countries of the region are examined both comparatively and individually to identify the economic, social, cultural, and national forces which have shaped their developments.

**HIST 357. Nazi Germany and the Holocaust. 3 Credits.**

This course explores the rise of the Nazis to power, their governance of Germany, their conquests, and their defeat. Special emphasis will be placed on the Nazis' treatment of various minorities. Their ideology and practical issues shaping the decisions and actions of both leaders and ordinary Germans will be examined. The Holocaust will be situated throughout in its contemporary context and understood through the eyes of perpetrators, victims, and bystanders.

**HIST 358. The Industrial Revolution. 3 Credits.**

This course examines the economic transformation known as the Industrial Revolution (1750-1850) from its roots in Western Europe to its later spread to other parts of Europe and then across the Atlantic Ocean primarily from the perspective of laboring people.

**HIST 360. Women in the United States. 3 Credits.**

This course will focus on the changing roles of women in American society from the 17th century to the present. Beginning with pre-industrial society and tracing women's experiences in agricultural, commercial, industrial, and post-industrial America, we will discover how women's roles have changed-and not changed-in the course of American history. In an historical context, the various experiences of women as housewives, mothers, consumers, workers, professionals, and citizens will be analyzed.



**HIST 362. US Foreign Relations, 1900 to the Present. 3 Credits.**

'The American Century.' The rise of America to world power. Relations with other countries before, during, and between the world wars, in the Cold War, and in the post-Soviet era, including politics toward Latin America, the Middle East, Africa, and Asia.

**HIST 366. US Labor Patterns and Movement. 3 Credits.**

This course analyzes the patterns of the US labor force and labor movements in the industrial age. Structural factors such as race, class, gender, geography and technology are considered along with the business and political contexts. The questions of individual agency on the part of labor leaders is also addressed.

**HIST 371. The American West. 3 Credits.**

A survey of the region that has long captured people's imagination. Enduring themes such as cowboys and Indians as well as newer concerns such as the role of women and the rise of technology will be analyzed in light of historical evidence, both primary and secondary.

**HIST 375. Internship. 3 Credits.**

Students participate in an off-campus training experience closely related to their area of study. Frequent meetings with the internship advisor and a paper are required. Internships are arranged through the Center for Career Development and must be approved in advance by the chair and the Dean of the School of Arts.

**HIST 377. Science, Technology, and Society. 3 Credits.**

This course explores major developments in both science and technology from the perspective of their social impact. Particular emphasis will be placed on industrialization and how science and technology affect society as a whole.

**HIST 380. Sport and American Society. 3 Credits.**

An interdisciplinary course on the history of American sport from the colonial era to the present. Special emphasis will be given to the economic, sociological, political, and psychological aspects of twentieth-century American sport.

**HIST 381. Colonial and Revolutionary America to 1789. 3 Credits.**

The political, economic, social, and cultural status of the British-American colonies in the mid-eighteenth century; the coming of the American Revolution; the problems of war and independence; the constitutional development of the new nation; the impact of the Revolution on all of the American people.

**HIST 383. Civil War and Reconstruction. 3 Credits.**

The causes of the Civil War: economic and political, legal and constitutional, ideological and moral. The great people, the great battles, and the great events. The results and the cost of the war, human and economic. Reconstruction, racism and segregation.

**HIST 385. Modern America, 1930 to Present. 3 Credits.**

The nation's domestic, political, social, and economic issues from the Great Depression of the 1930s to terrorism in 2001. The New Deal and the Fair Deal, the Home Front in World War II, Civil Rights and the Great Society, consensus in the 1950s and conflicts in the 1960s, the domestic cost of Vietnam, Watergate, and Reaganomics, the Information Revolution and the Clinton Paradox.

**HIST 386. American Biography. 3 Credits.**

Analysis of signal figures of both genders and of different racial/ethnic backgrounds from a variety of eras and fields, from business leaders and inventors to labor leaders and social reformers, from presidents to creative artists. Perennial questions that will be addressed include what constitutes a significant life and the relative roles in a life of one's personality and choices -- and of fate -- along with such structural factors as one's race, class, gender, geographic region and particular generation. Various biographical schools of thought will also be addressed, along with variations on biography, notably autobiography and memoir.

**HIST 387. New York City and the American Urban Experience. 3 Credits.**

The colonial and Revolutionary city, urban imperialism, the city in the American mind, immigration, social mobility, the rise of the ghetto, the impact of the New Deal, suburbanization, the modern metropolis, recent trends.

**HIST 388. Women in Modern Europe. 3 Credits.**

This course surveys the role of women in European society in the modern period. Special emphasis will be given to the articulation and evolution of the 'women's question' and the impact of industrialization, political revolution, and war on gender roles. Drawing on the contemporary documents as well as secondary analyses, the course will provide a historical context for debates on women and gender that continue to the present day.

**HIST 389. Gender and Sexuality in the Modern Middle East. 3 Credits.**

This course will explore the role of gender and sexuality in modern Middle Eastern history. It will begin by examining gender and sexuality in Muslim societies under Ottoman rule and will then explore how gender and sexuality have been shaped by processes of colonialism, capitalism, nation-building, and middle-class formation. Special emphasis will be placed on how women in the Middle East have responded to these historical changes.

**HIST 390. Terror and Terrorism. 3 Credits.**

This course examines the major ideas and problems associated with terror and terrorism from the French Revolution to the present and considers the historical development and role of political violence both by and against the state in contemporary society.

**HIST 391. Decolonization: The End of Empires. 3 Credits.**

This course will explore the process of decolonization with an emphasis on the end of European empires and the agency of the colonized.

**HIST 392. History of the Israeli-Palestinian Conflict. 3 Credits.**

This course will cover the origins, development and consequences of the Israeli-Palestinian conflict. Special emphasis will be placed on the effects that the conflict has had on people living in the region.

**HIST 393. Global Feminisms. 3 Credits.**

This course uses an intersectional lens to explore how and why feminist movements have emerged around the world in the modern era and how they have changed over time.

**HIST 415. Research in History. 3 Credits.**

Supervised participation in research design, source collection, analysis, and interpretation in conjunction with ongoing research projects in history. Permission of the faculty mentor, the department chair, and the Dean of the School of Liberal Arts are required at the time of registration.

**HIST 416. Research in History. 3 Credits.**

Supervised participation in research design, source collection, analysis, and interpretation in conjunction with ongoing research projects in history. Permission of the faculty mentor, the department chair, and the Dean of the School of Liberal Arts are required at the time of registration.

**HIST 475. Internship. 3 Credits.**

Students participate in an off-campus training experience closely related to their area of study. Frequent meetings with the internship advisor and a paper are required. Internships are arranged through the Center for Career Development and must be approved in advance by the chair and the Dean of the School of Arts.

**HIST 490. Senior Seminar. 3 Credits.**

An exploration of a specific historical theme through class discussion and student papers, with an emphasis on proper research methodologies and presentation. Intended for advanced history and social studies majors, but open to others with the permission of the chair. Prerequisite: HIST 200.

**HIST 498. Independent Study. 3 Credits.**

Supervised reading and research. Permission of Department Chair required.

# International Studies

Dr. Paul Droubie  
Director of the Program

International Studies is an interdisciplinary program founded on the premise that world events can only be understood by employing a variety of disciplinary perspectives -- including political, economic, historical, and cultural approaches -- and that they must be understood in both a regional and a global context. This interdisciplinary and international perspective will prepare students for graduate school or law school, or for careers in business, education, government, non-governmental organizations, or international organizations. Students who have specific graduate work or careers in mind may want to take a second major or a minor to further their program.

## Major

### Requirements for a Major in International Studies

All majors shall:

- Complete 15 credits in the core curriculum
- Complete 15 credits in the chosen area of concentration
- Acquire a satisfactory reading and speaking ability in at least one foreign language.

Areas of concentration are: Europe; Asia; Latin America and the Caribbean; Africa and the Middle East; and Global Affairs. This last category focuses on transregional issues such as the environment, technology, ethnicity, and international organizations. See below for the lists of courses in each area of concentration.

The Department of Modern Languages and Literatures offers courses in Arabic, Chinese, French, German, Italian, Japanese, and Spanish. Russian is available through a cooperative program with Lehman College. International Studies majors should take at least one 300-level course in a foreign language or pass a proficiency exam administered by the Department of Modern Languages and Literatures. International Studies majors who start one of the less commonly taught languages (Arabic, Chinese, Japanese, Russian) at Manhattan College are required to take at least 4 semesters of the language. A minimum grade of C or better is required in all language courses.

All International Studies majors are strongly encouraged to spend one or two semesters of their junior year abroad. A minimum grade of C is required in all courses used to fulfill the requirements for a major or minor in International Studies and for all courses taken abroad.

International Studies majors are advised to take ECON 150 Roots: Economics as one of their Social Science Core requirements.

## Minor

### Requirements for a Minor in International Studies

Minors shall complete 15 credits, including: INTL 201 Global Issues; POSC 351 International Relations, POSC 352 International Organizations, or POSC 357 United

States Foreign Policy; and HIST 326 Diplomatic History of Europe 1815-1914, HIST 328 Cold War Diplomacy in Asia, HIST 334 Diplomatic History of the Vietnam Wars or HIST 362 US Foreign Relations, 1900 to the Present. Students should also choose two electives from any one of the areas of concentration. ECON 334 International Economics can be substituted for one of the concentration electives. Students are encouraged to advance their linguistic competency.

## Core Curriculum

INTL 201	Global Issues	3
INTL 405	Senior Seminar	3
ECON 334	International Economics	3
HIST 326	Diplomatic History of Europe 1815-1914	3
or HIST 328	Cold War Diplomacy in Asia	
or HIST 334	Diplomatic History of the Vietnam Wars	
or HIST 362	US Foreign Relations, 1900 to the Present	
POSC 351	International Relations	3
or POSC 352	International Organizations	
or POSC 357	United States Foreign Policy	

## Area of Concentration

Majors take 15 credits in their area of concentration, with no more than three courses, or 9 credits, in a single discipline, and no more than two courses, or 6 credits, in a foreign language. Special topics courses and Model United Nations courses may be included in concentrations, when relevant, and at the discretion of the Director. Courses for the concentration are chosen in consultation with the Director of the Program, including those listed below:

### Europe:

ART 304	Art & Architecture of Renaissance Italy	3
ART 323	19th Century Art: 1750-1890	3
ART 329	History of Modern Art	3
ENGL 280	Irish Literary Revival	3
ENGL 346	Twentieth Century Irish Literature	3
FREN 303	French Culture Through Film	3
FREN 316	Aspects of French and Francophone Culture	3
FREN 340	French Civilization	3
FREN 341	Contemporary French Civilization	3
FREN 350	Mastersworks in French Literature I	3
HIST 304	Europe in the Middle Ages	3
HIST 305	Early Modern Europe	3
HIST 307	Genocide and Racism	3
HIST 308	European Women to 1500	3
HIST 326	Diplomatic History of Europe 1815-1914	3

HIST 337	England to 1688	3
HIST 351	Age of the French Revolution	3
HIST 352	Nineteenth-Century Europe	3
HIST 353	Modern Germany	3
HIST 354	History of the Soviet Union	3
HIST 355	East Europe in Modern Times	3
HIST 358	The Industrial Revolution	3
HIST 357	Nazi Germany and the Holocaust	3
HIST 388	Women in Modern Europe	3
HIST 390	Terror and Terrorism	3
INTL 315	Special Topics: Area Studies	3
ITAL 316	Aspects of Italian Culture	3
ITAL 303	Italian Through Film	3
ITAL 340	Medieval and Renaissance Italian Civilization	3
ITAL 341	Contemporary Italian Civilization	3
ITAL 350	Masterworks in Italian	3
MUSC 305	Music in France: Paris	3
POSC 330	Government and Politics of Western Europe	3
POSC 331	Government and Politics of Russia and Selected Soviet Successor States	3
POSC 332	Government and Politics of Central and Eastern Europe	3
POSC 348	Government and Politics of the European Union	3
POSC 473	Senior Seminar: Contemporary Western Political Thought	3
POSC 374	Western Political Thought	3
POSC 440	Seminar: European Politics	3
RELS 302	Religion and Spanish Culture	3
RELS 310	Religion & The Holocaust	3
RELS 231	Eastern Christianity	3
SPAN 303	Spanish Culture Through Film	3
SPAN 316	Aspects of Hispanic Culture	3
SPAN 340	Spanish Civilization	3
SPAN 350	Masterworks in Spanish I	3
SPAN 351	Masterworks in Spanish	3

Or any 400-level Modern Languages and Literatures course.

#### **Latin America and Caribbean:**

ECON 412	Economic Growth and Development	3
ENGL 265	Global Literature in English	3
FREN 342	Francophone Literature and Culture	3
POSC 344	Government and Politics of the Caribbean	3
POSC 345	Government and Politics of Latin America	3

HIST 225	Modern Latin America	3
INTL 313	Argentina:History,Society&Cult	3
HIST 318	Mexico, Central America and the Caribbean	3
INTL 315	Special Topics: Area Studies	3
RELS 238	Theologies Of Liberation	3
RELS 359	Afro-Caribbean Religions	3
SOC 262	Contemporary Latin American Development	3
SOC 328	Societies and Cultures of Latin America	3
SPAN 300	Hispanic Musical Heritage	3
SPAN 303	Spanish Culture Through Film	3
SPAN 320	Special Topics: in Hispanic Culture Studies	3
SPAN 341	Spanish American Civilization	3
SPAN 342	Caribbean Culture	3

Or any 400-level Spanish class on Latin America.

#### **Africa and Middle East:**

ARAB 301	Advanced Arabic I	3
ARAB 302	Advanced Arabic II	3
ECON 412	Economic Growth and Development	3
ENGL 265	Global Literature in English	3
FREN 341	Contemporary French Civilization	3
FREN 342	Francophone Literature and Culture	3
HIST 242	African Civilizations	3
HIST 306	History of the Modern Middle East	3
HIST 307	Genocide and Racism	3
HIST 314	Modern Africa	3
HIST 389	Gender and Sexuality in the Modern Middle East	3
HIST 391	Decolonization: The End of Empires	3
HIST 392	History of the Israeli-Palestinian Conflict	3
INTL 315	Special Topics: Area Studies	3
POSC 343	Government and Politics of the Middle East	3
POSC 346	Government and Politics of Africa	3
RELS 231	Eastern Christianity	3
RELS 238	Theologies Of Liberation	3
RELS 342	Islam and Politics	3
RELS 353	African Traditional Religion	3
RELS 355	Islam	3

#### **Asia:**

ART 316	History of Asian Art	3
CHIN 301	Advanced Mandarin Chinese I	3

CHIN 302	Advanced Mandarin Chinese II	3
ECON 412	Economic Growth and Development	3
ENGL 265	Global Literature in English	3
HIST 240	East Asian Civilizations	3
HIST 307	Genocide and Racism	3
HIST 312	Modern China 1839 - Now	3
HIST 313	Vietnam to the Philippines	3
HIST 328	Cold War Diplomacy in Asia	3
HIST 334	Diplomatic History of the Vietnam Wars	3
HIST 348	Modern Japan	3
HIST 391	Decolonization: The End of Empires	3
INTL 315	Special Topics: Area Studies	3
JAPN 301	Advanced Japanese I	3
JAPN 302	Advanced Japanese II	3
PHIL 342	Chinese and Japanese Philosophies	3
POSC 340	Government and Politics of Asia	3
RELS 238	Theologies Of Liberation	3
RELS 342	Islam and Politics	3
RELS 354	Buddhism: Its Development and Interpretation	3
RELS 355	Islam	3
RELS 357	Religions of China & East Asia	3
RELS 358	Religions of India	3
RELS 361	Yoga: Philosophy, Praxis, and Art	3

#### **Global Affairs:**

ART 218	Introduction to World Art	3
COMM 271	Transnational Mass Communication	3
COMM 371	Intercultural Communication	3
ECON 412	Economic Growth and Development	3
ENGL 347	Literature and War	3
ENGL 348	Postcolonial Literature	3
HIST 307	Genocide and Racism	3
HIST 362	US Foreign Relations, 1900 to the Present	3
HIST 377	Science, Technology, and Society	3
HIST 391	Decolonization: The End of Empires	3
INTL 310	Technology and Society	3
INTL 312	Ethnicity in the Modern World	3
INTL 315	Special Topics: Area Studies	3
MUSC 216	Introduction to World Music	3
PHIL 238	Philosophies of War and Peace	3
POSC 205	Political Geography	3



POSC 207	Introduction to Peace Studies	3
POSC 209	Comparative Politics	3
POSC 223	Environmental Politics	3
POSC 254	Global Cities	3
POSC 351	International Relations	3
POSC 352	International Organizations	3
POSC 354	Human Rights	3
POSC 367	Model United Nations	3
POSC 368	Model United Nations II	3
POSC 455	Seminar: Diplomacy	3
RELS 255	Introduction to Peace and Justice Studies	3
RELS 333	Non-Violent Revolution	3
SOC 212	Migration, Globalization, and Culture	3
SOC 250	Introduction to GIS	3
SOC 295	Capitalism	3
SOC 317	Anthropology of Drugs	3
SOC 327	Power and Conflict	3
SOC 329	Political Economy of Global Migration	3
SOC 335	Culture, Health, and Illness	3

## International Studies Courses

(Open to Majors and Non-Majors)

INTL 310	Technology and Society	3
INTL 312	Ethnicity in the Modern World	3
INTL 313	Argentina:History,Society&Cult	3
INTL 315	Special Topics: Area Studies	3
INTL 450	Tutorial	3
INTL 475	Internship	3

## Courses

### INTL 201. Global Issues. 3 Credits.

This course highlights the interrelatedness of political, economic, ecological, and cultural events as they affect nations, regions, and the global community. The course is designed to illuminate the complex nature of world events and the nature of international studies.

### INTL 310. Technology and Society. 3 Credits.

Technology and Society. How gadgets and techniques, hardware and software, interact with people for better and occasionally for worse, and how governments consider difficult trade-offs in their policy-making.

### INTL 312. Ethnicity in the Modern World. 3 Credits.

Study of several sub-national and trans-national ethnic and cultural movements. Their impact on local governments and international relations.

**INTL 313. Argentina:History,Society&Cult. 3 Credits.**

This course will provide an advanced introduction to the political, social and cultural history of Argentina since the Spanish conquest to today.

**INTL 315. Special Topics: Area Studies. 3 Credits.**

Special Topics in Area Studies. Course description will be announced when courses are offered.

**INTL 400. Study Abroad. 15 Credits.****INTL 405. Senior Seminar. 3 Credits.**

A study of one specific international problem seen from the viewpoint of different disciplines. Student research and class discussions on the origins and nature of, and possible solutions to, the problem. Open to International Studies seniors and by permission of the Director.

**INTL 450. Tutorial. 1-3 Credit.**

A course of study for students with particular interdisciplinary research interests not covered in the college's offerings. Research under supervision of a faculty member. Written permission of the Director and the supervising professor has to be secured before registration. Majors only.

**INTL 475. Internship. 3 Credits.**

Students participate in an off-campus training experience closely related to their area of study. Frequent meetings with the internship advisor and a paper are required. Internships are arranged through the Center for Career Development and must be approved in advance by the chair and the Dean of the School of Arts. Open to majors only.

# Labor Studies

Dr. Ricardo Dello Buono  
Director of the Program

Labor Studies is an interdisciplinary study of the nature and meaning of human work, the rights of workers, and the place of worker’s associations in an international context. The major and minor in Labor Studies draw on courses in the humanities, social sciences, business, and education. Although Labor Studies is available as a stand-alone major, students are encouraged to pursue a second major or minor in a traditional field of study.

The Labor Studies Program teaches students critical intellectual skills that will enable them to analyze social policy questions and help prepare them for careers in union organization and leadership, in government service, and in dispute resolution. It also prepares students to pursue graduate and professional studies in fields such as labor management, law, and human resources. Labor Studies is rooted in the Lasallian mission of “excellence in teaching, respect for individual dignity, and commitment to social justice” and in Manhattan College’s long tradition of teaching students from working class families.

## Requirements for Major

LABR 201	Labor Studies Colloquium	3
LABR 301	Field Work	3
LABR 401	Senior Seminar	3
Labor Studies Electives*		21
Economics		
ECON 405	Labor Economics	
ECON 334	International Economics	
Political Science		
POSC 319	Government and Business: Political Economy	3
POSC 212	Wall Street	3
History		
POSC 420	Senior Seminar: Conflict Resolution	3
HIST 230	History of the American Economy	
HIST 366	US Labor Patterns and Movement	
HIST 377	Science, Technology, and Society	
Management		
MGMT 320	Talent Management & Acquisition	
MGMT 450	Negotiation & Conflict Mgmt	
Philosophy		
PHIL 325	Marx and Marxism	
PHIL 350	Philosophers on Race, Class, and Gender	
Psychology		
PSYC 321	Social Psychology	
PSYC 373	Industrial Psychology	

## Radiological and Health Services

## Religious Studies

RELS 254	Catholic Social Teaching	
RELS 238	Theologies Of Liberation	3
RELS 362	Ethics in the Workplace	
RELS 204	Religion and Social Justice	3

## Sociology

SOC 304	Social Inequalities	
SOC 327	Power and Conflict	
SOC 331	Workers and the Workplace	
SOC 366	White Collar Crime	

Total Credits		45
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\*Electives must be selected from at least 4 distinct disciplines.

## Requirements for Minor

LABR 201	Labor Studies Colloquium	3
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Labor Studies Electives		12
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ECON 405	Labor Economics	
ECON 334	International Economics	
POSC 319	Government and Business: Political Economy	3
POSC 212	Wall Street	3
POSC 420	Senior Seminar: Conflict Resolution	3
HIST 230	History of the American Economy	
HIST 366	US Labor Patterns and Movement	
HIST 377	Science, Technology, and Society	
MGMT 320	Talent Management & Acquisition	
MGMT 450	Negotiation & Conflict Mgmt	
PHIL 325	Marx and Marxism	
PHIL 350	Philosophers on Race, Class, and Gender	
PSYC 321	Social Psychology	
PSYC 373	Industrial Psychology	
RELS 254	Catholic Social Teaching	
RELS 238	Theologies Of Liberation	3
RELS 362	Ethics in the Workplace	
RELS 204	Religion and Social Justice	3
SOC 304	Social Inequalities	
SOC 327	Power and Conflict	
SOC 331	Workers and the Workplace	
SOC 366	White Collar Crime	

Total Credits		30
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## Courses

### **LABR 201. Labor Studies Colloquium. 3 Credits.**

An interdisciplinary introduction to the nature, scope, and methodology of Labor Studies. Students will examine the problems and opportunities that a globalized economy poses for worker rights. Guest lectures by Labor Studies faculty members from the humanities and social sciences, business, and health services on specific topics and/or case studies. Site visits to select NYC historical landmarks such as Union Square, The Catholic Worker, and the site of the Triangle Fire.

### **LABR 301. Field Work. 3 Credits.**

This course offers the student the opportunity to work with and observe a Social Movement Organization (SMO) that seeks justice for workers, consumers, tenants, and economically marginalized people of NYC and surrounding areas. Students will work with an organization for 6 hours per week, keep an intellectual diary of what was learned and experienced; and write a final paper on the SMO with which they worked. Permission of Director and placement through the Cooperative Education program.

### **LABR 375. Internship. 3 Credits.**

Students participate in an off-campus training experience closely related to their area of study. Frequent meetings with the internship advisor and a paper are required. Internships are arranged through the Center for Career Development and must be approved in advance by the chair and the Dean of the School of Arts.

### **LABR 401. Senior Seminar. 3 Credits.**

An interdisciplinary analysis of the field of Labor Studies in light of the diverse courses students have taken in their course of study. Students will be required to write a senior thesis on a particular problem, opportunity, or personality in Labor Studies that serves as a capstone for their courses in Labor Studies. Available only to majors and minors by permission of Director.

### **LABR 410. Independent Study. 1-3 Credit.**

Available for students who wish to conduct in-depth research on a special topic in Labor Studies under the supervision of a faculty mentor. Permission of Director.

### **LABR 475. Internship. 3 Credits.**

Students participate in an off-campus training experience closely related to their area of study. Frequent meetings with the internship advisor and a paper are required. Internships are arranged through the Center for Career Development and must be approved in advance by the chair and the Dean of the School of Arts. Open to majors only.

# Liberal Learning

Rocco Marinaccio

Director of the Core Curriculum

The following courses comprise the core curriculum for students in the School of Liberal Arts and in the School of Science and are open only to those students. In keeping with the active learning goals of the program, all courses combine readings, discussions, and extensive writing assignments.

LLRN 102 Classical Origins: West Culture is required of all students in the School of Liberal Arts and some students in the School of Science.

To fulfil the Humanities requirement, all students in Liberal Arts and Science take the following courses:

ENGL 150	Roots: Literature	3
or ENGL 151	Roots: Literature-1st Year Seminar	
HIST 150	Roots: History	3
or HIST 152	Roots: History - FYS	
PHIL 150	Roots: Philosophy	3
or PHIL 152	Roots of Modern Age: Philosophy - FYS	
ART 150	Roots: Art	3
or ART 151	Roots:Art -1st Year Seminar	
or MUSC 150	Roots: Music	
or MUSC 151	Roots:Music-1st Year Seminar	

To fulfil the Social Science requirement, students in the School of Liberal Arts select 3, and students in the School of Science select 2, of the following courses:

ECON 150	Roots: Economics	3
POSC 150	Roots: Government	3
or POSC 153	Roots:Government - FYS	
PSYC 150	Roots: Psychology	3
or PSYC 153	Roots: Psychology - FYS	
SOC 150	Roots: Sociology	3
or SOC 153	Roots: Sociology - FYS	

## Courses

### **LLRN 102. Classical Origins: West Culture. 3 Credits.**

A multidisciplinary exploration of Greek and Roman contributions to the heritage of western culture. Students examine classical history, science, philosophy, literature, and fine arts.

### **LLRN 107. Medieval Origins of West Culture. 3 Credits.**

A multidisciplinary exploration of Europe during the Middle Ages, from the fourth through the fifteenth centuries. Students examine medieval history, fine arts, literature, philosophy, and religion.

**LLRN 151. Classical Origins of Western Culture-1st Year Seminar. 3 Credits.**

A multidisciplinary exploration of Greek and Roman contributions to the heritage of western culture. Students examine classical history, science, philosophy, literature, and fine arts. First Year Seminar.

**LLRN 300. Honors Seminar. 3 Credits.**

Under the auspices of the Dean of Arts and the Coordinator of the Honor's Enrichment Program. Course description will be announced when courses are offered.

**LLRN 375. Internship. 3 Credits.**

Students participate in an off-campus training experience closely related to their area of study. Frequent meetings with the internship advisor and a paper are required. Internships are arranged through the Center for Career Development and must be approved in advance by the chair and the Dean of the School of Arts. Open to all students in the School of Arts. General elective credit only.

**LLRN 401. Senior Seminar. 3 Credits.**

# Medieval Studies

Dr. Thomas Ferguson  
Program Coordinator

The minor in Medieval Studies offers a multi-disciplinary exploration of the art, architecture, history, literature, music, philosophy, and religion of Europe between the fourth and fifteenth centuries. It encourages students to engage critically with a formative era of the past that has shaped the Catholic Church and the development of the modern world. The Middle Ages saw the formation of the institutional Church and the rise of the papacy, the development of the nation and representative bodies, the origin of the university and modern legal systems, the creation of new artistic, literary, and musical forms, and even the formulation of notions such as romantic love and the individual "self." Current methods in studying the Middle Ages enable scholars and students to engage with the Lasallian mission by studying the poor, displaced, and persecuted as well as the legendary, famous, and powerful.

The Medieval Studies Minor draws faculty and courses from at least six different departments in the School of Liberal Arts and encourages students to seek connections across the disciplines. The minor complements all majors in the humanities and provides a firm historical grounding for students in the social sciences and other areas who wish to understand a period that was crucial to the development of the modern world.

## Minor

### Requirements for a Medieval Studies Minor

15 credits to include:

LLRN 107	Medieval Origins of West Culture	
3 courses selected from:		9
ART 321	Medieval Art	
ENGL 312	Studies in Medieval British Literature	
HIST 304	Europe in the Middle Ages	
RELS 245	Medieval Christian Thought	
PHIL 315	Medieval Philosophy	
And an additional course selected from the above or any of the following:		3
ART 260	Monasticism and the Arts	
ENGL 369	Chaucer	
HIST 308	European Women to 1500	
HIST 319	The Crusades	
HIST 325	The Byzantine Empire	
ITAL 340	Medieval and Renaissance Italian Civilization	
RELS 214	Dante	
PHIL 210	Faith and Reason	
PHIL 401	Major's Seminar	



RELS 243	Early Christian Thought
RELS 244	The Catholic Mystics

Special Topics courses focusing on a medieval subject may be selected as an elective with the approval of the Medieval Studies program coordinator. A minimum grade of C is required for all courses in the minor.

# Modern Languages & Literatures

Dr. Marlene Gottlieb

Chair of the Department

Manhattan College's Department of Modern Languages and Literatures offers majors and minors in French and Spanish as well as minors in Arabic, Italian, Chinese and Japanese. In addition, German, Irish and Latin are offered through a cooperative program with Lehman College at the nearby Lehman College campus. Students enrolled in those courses will follow Lehman College's catalog and schedule. Through a consorial arrangement with the College of Mount Saint Vincent, the department also offers Filipino language (Tagalog) and culture.

Language courses are oriented towards the achievement of oral and written proficiency. The goals of the Department of Modern Languages and Literatures are to develop the ability to understand, speak, read, and write effectively in a language other than English; to provide better understanding of other cultures and other modes of expression in order to broaden international understanding; and to prepare students for graduate studies and careers in education, international business, communication, government, social services, and related fields.

Entering students who took a foreign language prior to enrolling at Manhattan College are placed in an appropriate language course on the basis of their academic record, number of years of language study, and intended major.

In addition, Modern Language majors are encouraged to combine language studies with other disciplines, resulting in minors or double majors.

Requirements for a Major in Spanish: Thirty credits beyond 102. No more than 6 credits at the 200 level or 6 AP credits may be applied to the major. SPAN 350 Masterworks in Spanish I and SPAN 351 Masterworks in Spanish II are required of all majors and are a prerequisite for all 400-level courses. Of the remaining electives, 9 credits must be at the 400 level. A major's program should be carefully planned in consultation with a faculty advisor to assure oral and writing competence in Spanish. Study abroad is strongly encouraged.

Requirements for a Major in French: Thirty credits beyond 102. No more than 6 credits at the 200 level or 6 AP credits may be applied to the major. Required courses: FREN 350, or FREN 351 and one FREN 400 level. The remaining credits may be chosen from the 300 or 400 levels. A major's program of study should be carefully planned with an academic advisor to assure oral and writing competence in French. Study abroad is strongly encouraged.

Requirements for a French Concentration in Education: Thirty credits beyond 102. No more than 6 credits at the 200 level or 6 AP credits may be applied to the concentration. The following are required: FREN 301 Advanced French Conversation and Phonetics or FREN 307 Advanced Grammar and Composition; 6 credits from FREN 303 French Culture Through Film, FREN 340 French Civilization, FREN 341 Contemporary French Civilization, or FREN 342 Francophone Literature and Culture; and FREN 350 Masterworks in French Literature I or FREN 351 Masterworks in French & Francophone Literature II. The remaining electives must be at the 300 or 400 levels. In addition, the

student must take 12 credits of a second modern language (other than English). Study abroad is strongly encouraged in the sophomore year.

**Requirements for a Spanish Concentration in Education:** Thirty credits beyond 102. No more than 6 credits at the 200 level or 6 AP credits may be applied to the concentration. The following are required: SPAN 307 Advanced Grammar and Composition; SPAN 340 Spanish Civilization and SPAN 341 Spanish American Civilization; SPAN 350 Masterworks in Spanish I and SPAN 351 Masterworks in Spanish II. Of the remaining electives, 6 credits must be at the 400 level. In addition, the student must take 12 credits of a second modern language (other than English). Study abroad is strongly encouraged in the sophomore year.

**Requirements for a Minor in a Modern Language and Literature:** The Department offers minors in Arabic, French, Italian, Chinese, Japanese, and Spanish. Minors are required to take 15 credits beyond 102 (the Arabic, Chinese and Japanese minors allow up to 3 credits from the 100 level). Of these, only 6 credits may be applied from the 200 level, and only six credits of 300- and 400-level work may be transferred from a study abroad program. The minor must constitute a coherent program of study designed with an academic advisor and aimed at achieving oral proficiency in the language.

**Grade Requirements:** A minimum grade of C is required for course credit toward a major or a minor in Modern Languages and Literature.

**Study Abroad Programs:** Majors are strongly encouraged to study abroad either for a semester or a summer term at an approved program abroad. Students may choose from a variety of options, including Manhattan College-sponsored programs as well as programs sponsored by partner institutions in France, Italy, Spain, or in various other countries. To be eligible for study abroad, students must have an overall grade point average of 2.75 and an average of 3.0 in their language major or minor.

## Arabic/Modern Languages and Literatures Courses

### **ARAB 101. Arabic for Beginners I. 3 Credits.**

Introduction to the Study of Arabic. Introduces students to the sounds and script of Arabic, common phrases and rudimentary grammar. The course also provides an introduction to the culture of Arabic-speaking peoples. Three instructional hours plus one hour of laboratory practice. For students with little or no background in Arabic.

### **ARAB 102. Arabic for Beginners II. 3 Credits.**

Introduction to the Study of Arabic. Introduces students to the sounds and script of Arabic, common phrases and rudimentary grammar. The course also provides an introduction to the culture of Arabic-speaking peoples. Three instructional hours plus one hour of laboratory practice. For students with little or no background in Arabic.

### **ARAB 201. Intermediate Arabic I. 3 Credits.**

An intermediate course designed as a continuation of ARAB 102 and a basis for further instruction in AFL (Arabic as a foreign language). Three instructional hours plus one hour of laboratory practice. Prerequisite : ARAB 102 or equivalent.

**ARAB 202. Intermediate Arabic II. 3 Credits.**

An upper-intermediate language and culture course in Arabic designed for students who have fulfilled the requirements for third semester Arabic and/or those who demonstrate an equivalent competence in Modern standard Arabic. This course will be conducted approx. 80% of the time in Arabic. It is designed to improve all of the language skills in Arabic, with special emphasis on the development of reading and listening comprehension, as well as speaking skills. Additional attention will be paid to improving students writing skills. Students will be exposed to cultural, historical and contemporary aspects of the Arabic speaking world through literary, journalistic and textbook reading passages, music, video, advertising, etc. Students will practice summarization, description, narration, restatement, and expressing personal feelings and opinions through a variety of writing and speaking tasks.

**ARAB 219. Keeping Arabic Alive. 1 Credit.**

A course designed to improve the student's command of Arabic through readings and discussions on a particular subject of interest to the student or related to a course the student is currently taking. Offered upon the request of the student. Course may be repeated up to 3 times. Prerequisite: Permission of MLL Chair.

**ARAB 301. Advanced Arabic I. 3 Credits.**

This course builds upon the communication skills learned in Intermediate Arabic. Through purposeful listening, speaking, reading, and writing activities, students participate in authentic exchanges of information (e.g. describing the location of people, places and things; inquiring and offering directions; communicating about future and past events; buying items, etc.

**ARAB 302. Advanced Arabic II. 3 Credits.**

This course is a continuation of ARAB301. The course develops more advanced skills in reading, writing, aural comprehension and oral expression. Topics to be covered: traveling, relationships, ceremonies, services (especially public administration), careers, personal achievements. Additional materials and texts will provide a cultural supplement and introduce students to some short literary texts.

**ARAB 321. Arabic Across the Curriculum. 1 Credit.**

An advanced course designed to further develop the student's command of Arabic through readings and discussions on a particular subject of interest to the student related to a course the student is currently taking. Offered upon the request of the student. Course may be repeated up to 3 times. Prerequisite: Permission of MLL Chair.

## **Chinese/Modern Languages and Literatures Courses**

**CHIN 101. Introduction to Study of Mandarin Chinese I. 3 Credits.**

Introduces students to the sounds and characters of Chinese, as well as common phrases and rudimentary grammar. The course also provides an introduction to the culture of China. Three instructional hours plus one hour of laboratory practice. For students with little or no background in Chinese.

**CHIN 102. Introduction to Study of Chinese II. 3 Credits.**

Introduces students to the sounds and characters of Chinese, as well as common phrases and rudimentary grammar. The course also provides an introduction to the culture of China. Three instructional hours plus one hour of laboratory practice. For students with little or no background in Chinese.

**CHIN 201. Intermediate Mandarin Chinese I. 3 Credits.**

An intermediate course designed as a continuation of CHIN102 and a basis for further instruction in Mandarin. 3 Instructional hours plus 1 hour of laboratory practice. Pre-req: CHIN102 or permission of chair.

**CHIN 202. Intermediate Mandarin Chinese II. 3 Credits.**

An upper intermediate language and culture course designed as a continuation of CHIN201. This course will be conducted approx. 80% of the time in Chinese. It is designed to improve all of the language skills with special emphasis on the development of reading and listening comprehension, as well as speaking skills. 3 instructional hours plus 1 hour of laboratory practice. Pre-req: CHIN201 or permission of chair.

**CHIN 219. Keeping Mandarin Chinese Alive. 1 Credit.**

A course designed to improve the student's command of Mandarin Chinese through readings and discussions on a particular subject of interest to the student or related to a course the student is currently taking. Offered upon the request of the student. Course may be repeated up to 3 times. Prerequisite: Permission of MLL Chair.

**CHIN 301. Advanced Mandarin Chinese I. 3 Credits.**

Review and extension of grammar and syntax through the discussion of magazine, newspaper and literacy texts. Advanced grammar and rhetorical methods are taught and article-level compositions are practiced. Three instructional hours plus one hour of laboratory practice. Pre-requisite: CHIN202 or placement by Department.

**CHIN 302. Advanced Mandarin Chinese II. 3 Credits.**

Further development of grammar, syntax, and reading and writing through the discussion of magazine, newspaper and literacy texts as well as audio and video tapes of Chinese movies. Three instructional hours plus one hour of laboratory practice. Pre-requisite: CHIN301 or placement by Department.

**CHIN 321. Mandarin Chinese Across the Curriculum. 1 Credit.**

An advanced course designed to further develop the student's command of Mandarin Chinese through readings and discussions on a particular subject of interest to the student related to a course the student is currently taking. Offered upon the request of the student. Course may be repeated up to 3 times. Pre-requisite: Permission of MLL Chair.

## **French/Modern Languages and Literatures Courses**

**FREN 101. French for Beginners I. 3 Credits.**

An introduction to the four basic skills with emphasis on speaking and comprehending spoken French. The course also provides an introduction to the culture of French-speaking peoples. Three instructional hours plus one hour of laboratory practice. For students with little or no background in French or with only one year of high school French.

**FREN 102. French for Beginners II. 3 Credits.**

An introduction to the four basic skills with emphasis on speaking and comprehending spoken French. The course also provides an introduction to the culture of French-speaking peoples. Three instructional hours plus one hour of laboratory practice. For students with little or no background in French or with only one year of high school French.

**FREN 201. French for Communication I. 3 Credits.**

An intensive review of French and further development of listening, speaking, reading, and writing skills through extensive use of audio and visual aids. Three instructional hours plus one hour of laboratory practice. Prerequisite: FREN 102 or a minimum of two years of high school French.

**FREN 202. French for Communication II. 3 Credits.**

An intensive review of French and further development of listening, speaking, reading, and writing skills through extensive use of audio and visual aids. Three instructional hours plus one hour of laboratory practice. Prerequisite: FREN 102 or a minimum of two years of high school French.

**FREN 203. Writing French. 3 Credits.**

Intensive practice of writing skills through the use of aural and written materials. Review of grammar. Three instructional hours plus one hour of laboratory practice. Prerequisite: Placement by MLL Department.

**FREN 204. Speaking French. 3 Credits.**

Intensive practice in oral skills through extensive use of aural and written materials. Review of grammar. Three instructional hours plus one hour of laboratory practice. Prerequisite: FREN 203 or placement by MLL Department.

**FREN 216. Aspects of French Culture. 3 Credits.**

An on-site study of different aspects of the political, socio-economic, and cultural life of France together with a survey of its artistic heritage. The course is offered in France during the summer.

**FREN 219. Keeping French Alive. 1 Credit.**

A course designed to improve the student's command of French through readings and discussions on a particular subject of interest to the student or related to a course the student is currently taking. Offered upon the request of the student. Course may be repeated up to 3 times.

**FREN 301. Advanced French Conversation and Phonetics. 3 Credits.**

Intensive oral practice with everyday vocabulary together with an analysis of French sounds and a study of rhythm and intonation.

**FREN 303. French Culture Through Film. 3 Credits.**

French conversation and composition as well as French and Francophone civilization are studied through the viewing of films. Three instructional hours.

**FREN 307. Advanced Grammar and Composition. 3 Credits.**

An intensive study of the grammatical structures of French aimed at perfecting the student's oral and written command of the language.

**FREN 308. French Translation. 3 Credits.**

This course aims to introduce students to the practice of translation from French to English and vice versa. The course will focus on contrasting English and French grammatical, syntactical, and stylistic problems as well as vocabulary, thus affording students a deeper understanding of the French language.

**FREN 316. Aspects of French and Francophone Culture. 3 Credits.**

Through literacy texts, newspaper articles, music, films, and television, FREN 316 examines social and political trends, events, debates, and personalities of contemporary French and Francophone cultures. The objective of the course is to help students continue to improve their linguistic and cultural competence by examining some of the fundamental cultural aspects of French-speaking communities. This course might require going into the city to a museum, a play, or a musical event.

**FREN 320. Special Topic: in French and/ or Francophone Culture. 3 Credits.**

An in-depth study of a particular topic in French and/or Francophone culture and history, organized around a particular topic or theme.

**FREN 321. French Across the Curriculum. 1 Credit.**

An advanced course designed to further develop the student's command of French through readings and discussions on a particular subject of interest to the student related to a course the student is currently taking. Offered upon the request of the student. Course may be repeated up to 3 times. Pre-requisite: Permission of MLL Chair.

**FREN 340. French Civilization. 3 Credits.**

The historical, social, and cultural background of France from the Middle Ages through the 19th century. Lectures, readings, discussions, and reports.

**FREN 341. Contemporary French Civilization. 3 Credits.**

The historical, social, and cultural reality of France and the Francophone world in the 20th Century. Lectures, readings, discussions, and reports.

**FREN 342. Francophone Literature and Culture. 3 Credits.**

FREN 342 introduces students to Francophone literature and cultures with an emphasis on historical events of the colonial era, the anticolonial cultural movements. The course is designed around literary texts, poems, and films from Senegal, the Antilles, the Maghreb, Quebec, Vietnam, and many more Francophone regions. Pre-requisite: FREN 204 or permission of Department Chair.

**FREN 350. Masterworks in French Literature I. 3 Credits.**

A survey of the major writers and literary movements of the French-speaking world from the Middle Ages to the eighteenth century together with an introduction to the analysis of literary texts. FREN 350 or FREN 351 is required for all French majors in Arts and Education and recommended for minors. Prerequisite: FREN 204 or permission of Department chair.

**FREN 351. Masterworks in French & Francophone Literature II. 3 Credits.**

A survey of the major writers and literary movements of the French-speaking world from the nineteenth to the twenty-first century together with an introduction to the analysis of literary texts. Either FREN 350 or FREN 351 is required for all French majors in Arts and Education and recommended for minors. Prerequisite: FREN 204 or permission of Department chair.

**FREN 420. Special Topics. 3 Credits.**

An intensive study of a single author, genre, movement, or literary topic. Topics change yearly.

**FREN 435. The French Short Story. 3 Credits.**

A study of representative storytellers of the nineteenth and twentieth centuries.

**FREN 442. Contemporary Francophone Literature and Culture. 3 Credits.**

This course examines contemporary Francophone literature and culture and the sociocultural and political changes that countries such as Quebec, Algeria, Haiti, Senegal, and others are experiencing. Themes such as immigration, gender in the Maghreb, Islam in France, and the complex relationship between the ex-colonizer and ex-colonized and the struggles those nations are facing to construct their identity will be explored. Prerequisite: Any French 300 level course or permission of Department Chair.

**FREN 445. Baudelaire and Modern Poetry. 3 Credits.**

A study of the poetic expression of Baudelaire, Rimbaud, Verlaine, the Surrealists, and others.

**FREN 455. French Theatre of the Twentieth Century. 3 Credits.**

Tradition and innovation in contemporary French theatre. Reading and discussion of the most representative plays of Claudel, Giraudoux, Sartre, Camus, Anouilh, and Beckett.

**FREN 460. Independent Study. 3 Credits.**

In consultation with instructor and approval of Chair.

## **German/Modern Languages and Literatures Courses**

**GERM 101. German for Beginners I. 3 Credits.**

A course designed to introduce students to the basic skills of understanding, speaking, reading and writing accompanied by an introduction to the culture and civilization of German-speaking countries. Three instructional hours plus one language laboratory hour per week. For students with no background in German or with only one year of high school German.

**GERM 102. German for Beginners II. 3 Credits.**

A course designed to introduce students to the basic skills of understanding, speaking, reading and writing accompanied by an introduction to the culture and civilization of German-speaking countries. Three instructional hours plus one language laboratory hour per week. For students with no background in German or with only one year of high school German.

**GERM 201. German for Communication. 3 Credits.**

Further development of language proficiency with emphasis on conversation and composition, based on everyday situations and aspects of culture. Various media will be used to stimulate discussions on current topics and literary texts. Three instructional hours plus one language laboratory hour per week. Prerequisite: GERM 101, GERM 102 or a minimum of two years of high school German.

**GERM 202. German for Communication II. 3 Credits.**

Further development of language proficiency with emphasis on conversation and composition, based on everyday situations and aspects of culture. Various media will be used to stimulate discussions on current topics and literary texts. Three instructional hours plus one language laboratory hour per week. Prerequisite: GERM 101, GERM 102 or a minimum of two years of high school German.

**GERM 219. Keeping German Alive. 3 Credits.**

A course designed to improve the student's command of German through readings and discussions on a particular subject of interest to the student or related to a course the student is currently taking. Offered upon request of the student.



**GERM 360. Independent Study. 3 Credits.**

**GERM 420. Special Topics: in German. 3 Credits.**

**GERM 460. Independent Study. 3 Credits.**

## **Irish/Modern Languages and Literatures Courses**

**IRI 101. Elementary Irish I. 3 Credits.**

Study of the pronunciation and elements of Irish grammar, reading of simple texts, and oral practice. Three instructional hours plus one language laboratory hour per week.

**IRI 102. Elementary Irish II. 3 Credits.**

Study of the pronunciation and elements of Irish grammar, reading of simple texts, and oral practice. Three instructional hours plus one language laboratory hour per week.

## **Italian/Modern Languages and Literatures Courses**

**ITAL 101. Italian for Beginners I. 3 Credits.**

An introduction to the four basic skills with emphasis on speaking and comprehending spoken Italian. The course also provides an introduction to Italian civilization and culture. Three instructional hours plus one hour of laboratory practice. For students with little or no background in Italian or with only one year of high school Italian.

**ITAL 102. Italian for Beginners II. 3 Credits.**

An introduction to the four basic skills with emphasis on speaking and comprehending spoken Italian. The course also provides an introduction to Italian civilization and culture. Three instructional hours plus one hour of laboratory practice. For students with little or no background in Italian or with only one year of high school Italian.

**ITAL 201. Italian for Communication. 3 Credits.**

An intensive review of Italian and further development of listening, speaking, reading, and writing skills through extensive use of audio and visual aids. Three instructional hours plus one hour of laboratory practice. Prerequisite: ITAL 101 and ITAL 102 or two years of high school Italian.

**ITAL 202. Italian for Communication II. 3 Credits.**

An intensive review of Italian and further development of listening, speaking, reading, and writing skills through extensive use of audio and visual aids. Three instructional hours plus one hour of laboratory practice. Prerequisite: ITAL 101 and ITAL 102 or two years of high school Italian.

**ITAL 203. Writing Italian. 3 Credits.**

Intensive practice of writing skills through the use of aural and written materials. Review of grammar. Three instructional hours plus one hour of laboratory practice. Prerequisite: ITAL 202 or placement by MLL Department.

**ITAL 204. Speaking Italian. 3 Credits.**

Intensive practice in oral skills through extensive use of aural and written materials. Review of grammar. Three instructional hours plus one hour of laboratory practice. Prerequisites: ITAL 203 or placement by MLL Department.

**ITAL 216. Aspects of Italian Culture. 3 Credits.**

An on-site study of different aspects of the political, socio-economic, and cultural life of Italy together with a survey of its artistic heritage. The course is offered in Italy during the summer.

**ITAL 219. Keeping Italian Alive. 1 Credit.**

A course designed to improve the student's command of Italian through readings and discussions on a particular subject of interest to the student or related to a course the student is currently taking. Offered upon the request of the student. Course may be repeated up to 3 times.

**ITAL 303. Italian Through Film. 3 Credits.**

Italian language, history, and civilization are studied through the viewing and study of great films. Three instructional hours. The course is conducted in English and is open to all students. Prerequisite for Italian minors: ITAL 203 or ITAL 204 For credit, Italian minors must do all written work in Italian.

**ITAL 307. Advanced Grammar and Composition. 3 Credits.**

An intensive study of the grammatical structures of Italian aimed at perfecting the student's oral and written command of the language.

**ITAL 316. Aspects of Italian Culture. 3 Credits.**

An on-site study of different aspects of the political, socio-economic, and cultural life of Italy together with a survey of its artistic heritage.

**ITAL 321. Italian Across the Curriculum. 1 Credit.**

An advanced course designed to further develop the student's command of Italian through readings and discussions on a particular subject of interest to the student related to a course the student is currently taking. Offered upon the request of the student. Course may be repeated up to 3 times. Pre-requisite: Permission of MLL Chair.

**ITAL 323. Special Topics in Italian. 3 Credits.**

An intensive study of a particular topic in Italian culture, literature or history. Permission of Department Chair.

**ITAL 340. Medieval and Renaissance Italian Civilization. 3 Credits.**

A study of the art, music, philosophy, and literature of Medieval Italy and its development into the Renaissance of Western Culture. Lectures, readings, and discussions in Italian.

**ITAL 341. Contemporary Italian Civilization. 3 Credits.**

The major issues affecting modern Italy are explored through art, music, film, philosophy, and literature, as well as through readings on its political, economic, and social reality. Lectures, readings, and discussions in Italian.

**ITAL 350. Masterworks in Italian. 3 Credits.**

A survey of the great writers and literary movements of Italian literature together with an introduction to the analysis of literary texts.

**ITAL 420. Special Topics: in Italian. 3 Credits.**

An intensive study of a single author, genre, movement, or literary theme.

**ITAL 460. Independent Study. 3 Credits.**

In consultation with instructor and approval of Chair.

## Japanese/Modern Languages and Literatures Courses

### **JAPN 101. Elementary Japanese I. 3 Credits.**

A course designed to introduce students to the sounds and script of Japanese, common phrases, and rudimentary grammar. The course also provides an introduction to the culture of Japan. Three instructional hours plus one hour of laboratory practice in 101, and five instructional hours plus one hour of laboratory practice in 102. For students with little or no background in Japanese.

### **JAPN 102. Introduction to Japanese II. 3 Credits.**

A course designed to introduce students to the sounds and script of Japanese, common phrases, and rudimentary grammar. The course also provides an introduction to the culture of Japan. Three instructional hours plus one hour of laboratory practice in 101, and five instructional hours plus one hour of laboratory practice in 102. For students with little or no background in Japanese.

### **JAPN 201. Intermediate Japanese I. 3 Credits.**

Emphasis on vocabulary, grammar, syntax, conversation, and writing in Kanji and Kana. Three instructional hours and one hour of laboratory practice. Offered at Lehman College. Prerequisite: JAPN 101 and 102.

### **JAPN 202. Intermediate Japanese II. 3 Credits.**

Emphasis on vocabulary, grammar, syntax, conversation, and writing in Kanji and Kana. Three instructional hours and one hour of laboratory practice. Offered at Lehman College. Prerequisite: JAPN 101 and JAPN 102.

### **JAPN 219. Keeping Japanese Alive. 1 Credit.**

A course designed to improve the student's command of Japanese through readings and discussions on a particular subject of interest to the student or related to a course the student is currently taking. Offered upon the request of the student. Course may be repeated up to 3 times. Prerequisite: Permission of MLL Chair.

### **JAPN 301. Advanced Japanese I. 3 Credits.**

Review and extension of grammar and syntax through the discussion of magazine, newspaper and literary texts. Continued study of the appropriate use of Kanji and Kana. Three instructional hours plus one hour of laboratory practice. Offered at Lehman College. Prerequisite: JAPN 201 and JAPN 202.

### **JAPN 302. Advanced Japanese II. 3 Credits.**

Review and extension of grammar and syntax through the discussion of magazine, newspaper and literary texts. Continued study of the appropriate use of Kanji and Kana. Three instructional hours plus one hour of laboratory practice. Offered at Lehman College.

### **JAPN 310. Comparative Grammar. 3 Credits.**

### **JAPN 321. Japanese Across the Curriculum. 1 Credit.**

An advanced course designed to further develop the student's command of Japanese through readings and discussions on a particular subject of interest to the student related to a course the student is currently taking. Offered upon the request of the student. Course may be repeated up to 3 times. Prerequisite: Permission of MLL Chair.

**JAPN 357. Special Topics: in Japanese. 3 Credits.**

**JAPN 381. Tutorial. 3 Credits.**

## **Modern Languages and Literatures Courses**

**MLL 090. MLL Elective. 3 Credits.**

**MLL 095. Independent Study. 3 Credits.**

**MLL 096. Independent Study. 3 Credits.**

**MLL 150. Modern Language and Literature:(FYS). 3 Credits.**

First Year Seminar in Modern Language and Literature.

**MLL 375. Internship. 3 Credits.**

Available in all languages taught by the Department of Modern Languages and Literatures. Students participate in a training experience related to their chosen language. Frequent meetings with the internship advisor and a paper are required. Internships are arranged through the Center for Career Development and must be approved in advance by the chair and the Dean of the School of Arts. General elective credit only.

## **Spanish/Modern Languages and Literatures Courses**

**SPAN 101. Spanish for Beginners I. 3 Credits.**

An introduction to the four basic skills with emphasis on speaking and comprehending spoken Spanish. The course also provides an introduction to the culture of Spanish-speaking peoples. Three instructional hours plus one hour of laboratory practice. For students with little or no background in Spanish or with only one year of high school Spanish.

**SPAN 102. Spanish for Beginners II. 3 Credits.**

An introduction to the four basic skills with emphasis on speaking and comprehending spoken Spanish. The course also provides an introduction to the culture of Spanish-speaking peoples. Three instructional hours plus one hour of laboratory practice. For students with little or no background in Spanish or with only one year of high school Spanish.

**SPAN 200. Elementary Spanish for Heritage Students. 3 Credits.**

An intensive beginning course with emphasis on basic elements of grammar, vocabulary, reading, and conversation for students who learned Spanish in the home environment and understand basic conversation but need to improve their oral and written communication skills. The course also provides an introduction to the culture and civilization of Spanish-speaking peoples.

**SPAN 201. Spanish for Communication I. 3 Credits.**

An intensive review of Spanish and further development of listening, speaking, reading, and writing skills through extensive use of audio and visual aids. Three instructional hours plus one hour of laboratory practice. Prerequisite: SPAN 101 and SPAN 102 or a minimum of two years of high school Spanish.

**SPAN 202. Spanish for Communication II. 3 Credits.**

An intensive review of Spanish and further development of listening, speaking, reading, and writing skills through extensive use of audio and visual aids. Three instructional hours plus one hour of laboratory practice. Prerequisite: SPAN 101 and SPAN 102 or a minimum of two years of high school Spanish.

**SPAN 203. Writing Spanish. 3 Credits.**

Intensive practice of writing skills through the use of aural and written materials. Review of grammar. Three instructional hours plus one hour of laboratory practice. Offered every semester. Prerequisite: Placement by Dept.

**SPAN 204. Speaking Spanish. 3 Credits.**

Intensive practice in oral skills through extensive use of aural and written materials. Review of grammar. Three instructional hours plus one hour of laboratory practice. Offered every semester. Prerequisite: SPAN 203 or placement by MLL Department. Not intended for Spanish native or heritage speakers.

**SPAN 207. Intermediate Grammar (Madrid). 3 Credits.**

An introduction to the basic grammatical and syntactical structures of Spanish. Offered only in the Manhattan College Madrid Program.

**SPAN 216. Aspects of Hispanic Culture. 3 Credits.**

An on-site study of various aspects of the political, socio-economic and cultural life of a Hispanic country or region. The course is offered in Manhattan College's Madrid Program and occasionally during the winter interim and/or the summer session.

**SPAN 217. Intermediate Spanish for Heritage Students I. 3 Credits.**

A course designed for students who have learned Spanish in the home environment but need formal training to improve their communication skills. The course also provides an introduction to the culture and civilization of Spanish-speaking peoples. For Latinos/as and native speakers only.

**SPAN 218. Intermediate Spanish for Heritage Students II. 3 Credits.**

A course designed for students who have learned Spanish in the home environment but need formal training to improve their communication skills. The course also provides an introduction to the culture and civilization of Spanish-speaking peoples. For Latinos/as and native speakers only.

**SPAN 219. Keeping Spanish Alive. 1 Credit.**

A course designed to improve the student's command of Spanish through readings and discussions on a particular subject of interest to the student or related to a course the student is currently taking. Offered upon the request of the student. Course may be repeated up to 3 times.

**SPAN 300. Hispanic Musical Heritage. 3 Credits.**

Song lyrics of the rich and diverse musical traditions of Spanish-speaking peoples will serve as a basis for studying the Spanish language as well as aspects of Hispanic culture. Pre-requisites: Permission of MLL Chair.

**SPAN 303. Spanish Culture Through Film. 3 Credits.**

Spanish conversation and composition as well as Hispanic civilization are studied through the viewing of films from Spain and Spanish America. Three instructional hours. Pre-requisite: Permission of MLL Chair.

**SPAN 307. Advanced Grammar and Composition. 3 Credits.**

An intensive study of the grammatical structures of Spanish aimed at perfecting the student's oral and written command of the language. Pre-requisite: Permission of MLL Chair.

**SPAN 308. Spanish Translation. 3 Credits.**

This course aims to introduce students to the practice of translation from Spanish to English and vice versa. The course will focus on contrasting English and Spanish grammatical, syntactical, and stylistic problems as well as vocabulary, thus affording students a deeper understanding of the Spanish language. Pre-requisites: Permission of MLL Chair.

**SPAN 309. Advanced Conversation. 3 Credits.**

Techniques of conversation and intensive oral practice of Spanish. Pre-requisites: Permission of MLL Chair.

**SPAN 310. Advanced Composition (Madrid). 3 Credits.**

Practice of the conventions of written Spanish through the study of journalistic articles, essays, and literary works. Prerequisites: Permission of MLL Chair.

**SPAN 316. Aspects of Hispanic Culture. 3 Credits.**

A study of various aspects of the political, socio-economic and cultural life of a Hispanic country or region. Prerequisites: Permission of MLL Chair.

**SPAN 318. Spanish for Health Personnel. 3 Credits.**

A course designed to develop conversational skills using vocabulary and structures relevant to communication between health personnel and their clients. Pre-requisites: Permission of MLL Chair.

**SPAN 319. Spanish for Business. 3 Credits.**

An introduction to the modern terminology used in the business world. The course includes a review of major grammatical structures as well as a discussion of cultural factors that may affect commercial transactions. Prerequisites: Permission of MLL Chair.

**SPAN 320. Special Topics: in Hispanic Culture Studies. 3 Credits.**

An intensive study of a particular region of the Spanish-speaking world or of a cultural topic common to all Hispanic countries. Topics change yearly. Prerequisites: Permission of MLL Chair.

**SPAN 321. Spanish Across the Curriculum. 1 Credit.**

An advanced course designed to further develop the student's command of Spanish through readings and discussions on a particular subject of interest to the student related to a course the student is currently taking. Offered upon the request of the student. Course may be repeated up to 3 times. Pre-requisite: Permission of MLL Chair.

**SPAN 340. Spanish Civilization. 3 Credits.**

The major issues that have affected Spain are explored through film, art, and the reading of historical and literary texts. The course has a strong emphasis on discussion. Required for Spanish majors in Education. Pre-requisites: Permission of MLL Chair.

**SPAN 341. Spanish American Civilization. 3 Credits.**

The major issues that have affected Spanish America are explored through film, art, and the reading of historical and literary texts. The course has a strong emphasis on discussion. Required for Spanish majors in Education. Prerequisites: Permission of MLL Chair.

**SPAN 342. Caribbean Culture. 3 Credits.**

The Spanish Caribbean's history and culture from 1492 to the present will be explored through art, film, music, and the reading and analysis of literary as well as journalistic and historical texts. Strong emphasis on reading, writing and discussion. Prerequisites: Permission of MLL Chair.

**SPAN 350. Masterworks in Spanish I. 3 Credits.**

A survey of the great writers and literary movements of the Spanish-speaking world together with an introduction to the analysis of literary texts. Required for all Spanish majors in Arts and Education and highly recommended for minors. Prerequisites: Permission of MLL Chair.

**SPAN 351. Masterworks in Spanish. 3 Credits.**

A survey of the great writers and literary movements of the Spanish-speaking world together with an introduction to the analysis of literary texts. Required for all Spanish majors in Arts and Education and highly recommended for minors. Prerequisites: Permission of MLL Chair.

**SPAN 420. Spanish Seminar. 3 Credits.**

An intensive study of a single author, genre, movement, or literary topic. Topics change yearly. Prerequisite: SPAN 350 or SPAN 351, or permission of Chair.

**SPAN 423. Great Hispanic Poets. 3 Credits.**

An introduction to the analysis of poetry through the study of the great poets of the Spanish language such as Garcilaso, St. John of the Cross, Gongora, Sor Juana Ines de la Cruz, Becquer, Marti, Dario, Jimenez, Machado, Mistral, Lorca, Vallejo, and Neruda. Prerequisite: SPAN 350 or SPAN 351, or permission of Chair.

**SPAN 424. The Modern Novel in Spain and Spanish America. 3 Credits.**

A survey of the development of modern fiction from the great nineteenth-century Spanish Realists (Galdós and Clarín) to the Latin American "Boom" (Asturias, García Márquez, Carpentier, Fuentes, Vargas Llosa, et al.).

**SPAN 427. Cervantes. 3 Credits.**

An in-depth analysis and discussion of Don Quijote and other works by Cervantes. Prerequisite: SPAN 350 or SPAN 351, or permission of Chair.

**SPAN 429. The Spanish Golden Age. 3 Credits.**

A survey of the history, art, and literature of Spain during the 16th and 17th centuries.

**SPAN 435. Spanish-American Short Fiction. 3 Credits.**

A study of the development of the short narrative forms in Spanish America in relationship to the social, political, and historical reality. Readings from the works of Quiroga, Borges, Garcia Marquez, Cortazar, Fuentes, Vargas Llosa, Rulfo and Donoso. Prerequisite: SPAN 350 or SPAN 351, or permission of Chair.

**SPAN 440. Women in Hispanic Literature. 3 Credits.**

Modalities of portrayal of female protagonists by male and female writers from the 19th century to the present with emphasis on the reinterpretation of the role of women within the new social-political reality of the Hispanic world.

**SPAN 460. Independent Study. 3 Credits.**

In consultation with instructor and approval of Chair.

# Music, Theater and Sound Studies

## Music and Theater (MUSC and THEA)

**Dr. Mark A. Pottinger, Ph.D. Musicology**

***Chair of the Department***

The Department of Music and Theater offers a Major in Sound Studies and Minors in both Music and in Theater.

The Sound Studies Major presents a critical approach to the act of listening that is informed by a study of the socio-economic forces that shape our world. Combined with a larger liberal arts curriculum, sound studies redefines traditional music study (i.e., historical musicology, music theory and composition, music performance studies) by integrating it with the science of sound (i.e., music technology, music recording and editing, and the science of acoustics). The core areas of the major include music theory and analysis; music history and culture, including the history of audio technology; performance studies via a particular instrument such as piano, voice, or guitar; digital audio recording; and sound design. The investigation of how sound and by extension music influences who we are and what we desire to be is the main curricular focus of this program, which thus aligns sound studies with the college's mission of social justice and community engagement.

Over the course of a 30-credit program of study, students will develop a critical awareness of the history of music and music recording technology and their impact on society; create, capture, and edit sound data in order to cultivate and apply new approaches to music performance, research, and education; and support collaborations between music, science, and technology.

## Major in Sound Studies Requirements

Majors in Sound Studies must take a minimum of 30 credits in music and audio taken from the following five areas:

### Music Theory: 6 credits

MUSC 220	Fundamentals of Music Theory	3
MUSC 320	Advanced Music Theory	3
Total Credits		6

\*Students entering with AP Music Theory credit (4 or 5 test score) can satisfy the course requirement of MUSC 220.

### Music History, Culture and Analysis: 9 credits

MUSC 290	Early Music History: Antiquity to 1800	3
MUSC 300	History of Rock and Roll	3
MUSC 310	History of the Broadway Musical	3
MUSC 323	Music & Romanticism	3
MUSC 325	Modern Music & The Avant-Garde	3



MUSC 330	History of Jazz	3
MUSC 380	History of Sound Recording & Audio Technology	3

### **Performance (Piano, Guitar, or Other): 3 credits\***

MUSC 208 or MUSC 209	Piano Skills and Techniques Guitar Skills and Techniques	3
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\*Three semesters of MUSC131, MUSC 132 or MUSC133 (Ensemble Performance with instrumental lessons) OR MUSC 129/130 (Vocal Instruction) may be used to satisfy the 3-credit performance requirement. Although only 3 credits are required in performance, Sound Studies Majors are encouraged to continue their study of voice, piano or guitar in more advanced areas, including MUSC 258 or MUSC 259 and MUSC 308 or MUSC 309, or MUSC 410 (Independent Study).

### **Digital Audio and Sound Studies: 9 credits**

MUSC 390	Digital Audio Recording and Editing	3
MUSC 393	Audio Mixing & Music Prod	3
MUSC 395	Acoustics & Sound Control	3
MUSC 375	Internship <small>At a Music Recording Studio can satisfy 3 credits</small>	3

### **Senior Project/Capstone: 3 credits\***

MUSC 405	Senior Seminar: Contemporary Sound Design (Prerequisites: MUSC 380, MUSC 393, MUSC 395)	3
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A minimum final grade of C is required for courses to satisfy all Major requirements. Majors must have a contract signed and approved by the Department Chair no later than their junior year.

## **Minors in Music and Theater**

The minor in Music and the minor in Theater are both designed to supplement majors in numerous disciplines. In addition to examining broad historical and cultural contexts, courses provide opportunities for individual creativity and performance as well as an introduction to the theory and technology shaping contemporary theater and music today. To fulfill certain areas of the minor, students may elect to participate in one of the many award-winning ensembles on campus, including the MC Orchestra, MC Jazz Band, MC Singers, MC Pep Band, MC Pipes and Drums Corps, and the MC Players (see Clubs and Organizations (<https://manhattan.edu/life-at-manhattan/clubs-organizations/?category=All&letter=All&pageSize=10&pageIndex=1>)).

A minor in Music or in Theater is an ideal choice for a variety of careers. In addition to preparing students for advanced training in music and theatrical performance, the minors offer career opportunities for actors, historians, sociologists, theater managers, dramaturges, psychologists, teachers, playwrights, copyright lawyers, non-for-profit business managers, journalists, librarians, sound engineers, stage designers, and advertising executives. Minors in the Department of Music and Theater may take advantage of several internship programs in New York City that give students an introduction to the professional working environment in both the music and theater industries.

## Minor in Music Requirements

MUSC 150	Roots: Music	3
or MUSC 216	Introduction to World Music	
MUSC 208	Piano Skills and Techniques *	3
or MUSC 209	Guitar Skills and Techniques	
MUSC 220	Fundamentals of Music Theory	3
Electives (300 Level or above)		6
Total Credits		15

\*Three semesters of MUSC 131 (MC Singers), MUSC 132 (MC Orchestra), or MUSC 133 (MC Jazz Band), may serve as a substitute.

## Minor in Theater Requirements

THEA 190	Acting Skills and Techniques	3
THEA 260	Introduction to Theater	3
MUSC 310	History of the Broadway Musical	3
or ENGL 400	The Theater and the City	
Electives (at least 3 credits at 300 level or above)		6
Total Credits		15

Beyond the full list of three-credit THEA courses listed in the course catalog, ENGL 205 (Reading & Writing the Theater), ENGL 276 (Introduction to Drama), ENGL 329 (Shakespeare: Comedies, Histories, and *Hamlet*), ENGL 330 (Shakespeare II), ENGL 361 (Masterpieces of British Drama), ENGL 381 (Masterpieces of American Drama), and three semesters of THEA 134 (MC Players) may serve as a Theater elective.

A minimum final grade of C is required for courses to satisfy all minor requirements. Minors must have a contract signed and approved by the Department Chair.

## Music Courses

### MUSC 091. Music Elective. 3 Credits.

### MUSC 129. Beginning Vocal Instruction. 1 Credit.

The elements of vocal production, breathing, control and proper placement of the human voice. May be repeated or combined with ART 130 for a maximum of three credits.

### MUSC 130. Advanced Vocal Instruction. 1 Credit.

Continuation of MUSC 129. Study of more advanced vocal literature. May be repeated or combined with MUSC 129 for a maximum of three credits. Prerequisite: MUSC 129 or permission of instructor.

### MUSC 131. Manhattan College Singers. 1 Credit.

The study and performance of works for mixed vocal ensemble. May be repeated for credit. A public concert is given each term. The student must attend all rehearsals, sectionals, and the final performance for credit. Pass/Fail only. Two hours a week. All students who participate in the ensemble for credit receive ten individual lessons from the director or an outside professional.

**MUSC 132. Manhattan College Orchestra. 1 Credit.**

The study and performance of works for string and wind orchestra. May be repeated for credit. A public concert is given each term. A short audition is required. The student must attend all rehearsals, sectionals, and the final performance for credit. Pass/Fail only. Two hours a week. All students who participate in the ensemble for credit receive ten individual lessons from the director or an outside professional.

**MUSC 133. Manhattan College Jazz Band. 1 Credit.**

The study and performance of works for jazz ensemble. May be repeated for credit. A public concert is given each term. A short audition is required. The student must attend all rehearsals, sectionals, and the final performance for credit. Pass/Fail only. Two hours a week. All students who participate in the ensemble for credit receive ten individual lessons from the director or an outside professional.

**MUSC 150. Roots: Music. 3 Credits.**

An intensive and critical examination of major works of music from the medieval period to the present that contribute to an understanding of the modern world.

**MUSC 151. Roots:Music-1st Year Seminar. 3 Credits.**

An intensive and critical examination of major works of music from the medieval period to the present that contribute to an understanding of the modern world. First Year Seminar.

**MUSC 208. Piano Skills and Techniques. 3 Credits.**

A course for those with much, little or no previous experience designed to promote the understanding of different styles of music through the study of the piano. The course includes instruction in piano techniques, ear training, music theory, sight reading, and music composition.

**MUSC 209. Guitar Skills and Techniques. 3 Credits.**

A course for those with much, little or no previous experience, designed to promote the understanding of different styles of music through the study of the guitar. The course includes instruction in guitar technique, ear training, music theory, sight reading and music composition.

**MUSC 216. Introduction to World Music. 3 Credits.**

A select study of the world's musical traditions from regions in Africa, the Americas, the Middle East, and South and East Asia. Through listening and class discussion, students will become familiar with various forms of music making in their historical and cultural contexts.

**MUSC 220. Fundamentals of Music Theory. 3 Credits.**

A study of the rudiments of music and the basic principles of harmony. Topics include rhythm, musical notation, scales, key signatures, intervals, triads, seventh chords, harmonic function, harmonic progression, and elementary counterpoint. Activities include simple composition, harmonization, analysis, ear-training and dictation drills.

**MUSC 240. Catholic Mass and its Music. 3 Credits.**

A Catholic Studies course surveying the structure of the Roman Mass in relation to the major reforms and debates throughout the history of the Catholic faith, including the Church's transition during the Carolingian Renaissance, the Council of Trent, the Thirty-Years War, the reforms of Pope Pius X, and the Second Vatican Council. Ultimately, students will engage in the role of music in faith formation and how the major reforms in the Church's history have influenced the worship music of today.

**MUSC 258. Piano Skills & Techniques II. 3 Credits.**

A continuation of MUSC208, students will study increasingly sophisticated piano works, further develop practice skills with metronome and finger technique, and integrate principles learned in fundamentals of music theory. The course will also explore use of the dynamic pedal (more complex than one may think) and tonalities created by its use. Pre-requisites: MUSC 208 and MUSC 220.

**MUSC 259. Guitar Skills & Techniques II. 3 Credits.**

A continuation of MUSC209, students will study increasingly sophisticated guitar works, further develop guitar fretboard placement beyond first position, both in terms of sight-reading and chord movement, as well as integrate principles learned in fundamentals of music theory. Pre-requisites: MUSC 209 and MUSC 220.

**MUSC 290. Early Music History: Antiquity to 1800. 3 Credits.**

Examines the repertoire and history of Western music from Ancient Greece to 1800. The course will work to familiarize the student with early modal scales and rhythmic practices, as well as the repertoire that establishes the foundations of functional harmony in Western Music. Students are expected to read music. Pre-requisites: MUSC 208 or MUSC 209 or MUSC 220.

**MUSC 300. History of Rock and Roll. 3 Credits.**

Presents a thoughtful approach to the appreciation and understanding of the history of rock and roll. Students will be introduced to a variety of factors that influenced the creation of this music, including historical, social, philosophical, and aesthetic influences. The musician's intent, working conditions, and biographical factors will also be discussed as they pertain to the creative process. Students will reinforce and expand their analytical skills by reading about and discussing the various styles of music combined to create rock and roll, including blues, country, bluegrass, and gospel music.

**MUSC 305. Music in France: Paris. 3 Credits.**

An on-site study of different aspects of the political, socio-economic, and cultural life of France as witnessed through the music of Paris and the surrounding region from Ancient Gaul to present-day France. The course is offered in France during the summer.

**MUSC 308. Piano Skills & Techniques III. 3 Credits.**

A continuation of MUSC258, students will study increasingly sophisticated piano works, further develop practice skills, and integrate principles learned in advanced music theory and digital audio recording and editing. The course will also work to develop skills in accompaniment and music collaboration within a studio environment. Pre-requisites: MUSC 258 or MUSC 320 or MUSC 390.

**MUSC 309. Guitar Skills & Techniques III. 3 Credits.**

A continuation of MUSC259, students will study increasingly sophisticated guitar works, further develop practice skills, and integrate principles learned in advanced music theory and digital audio recording and editing. The course will also work to develop skills in accompaniment and music collaboration within a studio environment. Pre-requisites: MUSC 258 or MUSC 320 or MUSC 390.

**MUSC 310. History of the Broadway Musical. 3 Credits.**

Presents the history of the Broadway musical within the larger context of staged musical productions, from the beginning of operetta to the current trends happening on Broadway today. The primary focus of study is the development of musical theater in New York City and its implications for the genre worldwide. Students will learn about various musical and theatrical concepts, as well as the political and socio-economic concerns of the Broadway musical of the past and of today. The opportunity for field study will be encouraged through backstage tours, attendance to current productions on Broadway, and lecture presentations at various theaters or other relevant locations in the city. Materials Fee: \$100.

**MUSC 320. Advanced Music Theory. 3 Credits.**

A study of the advanced principles of harmony, rhythm, and musical structure. In addition to Western music of the common practice period (1600-1900), contemporary vernacular styles, including blues, gospel, rock, jazz, and electronica, will be the primary focus for this course. Prerequisite: MUSC 220.

**MUSC 323. Music & Romanticism. 3 Credits.**

In the nineteenth century, U.S. and European composers explored music's potential to express deeper and more powerful emotions than any other time in Western history, including those of unconscious dream states. The old 'Classical' musical structures (e.g., the music of Haydn and Mozart) began to crumble under the weight of this emphasis on feeling. Understanding how this came about will be one of the main objectives for this course. Although the primary focus of this course will be the rhetorical properties of sound, a reading knowledge of music is not necessary for success in the course.

**MUSC 325. Modern Music & The Avant-Garde. 3 Credits.**

This course presents an introduction to Modern music from the end of the 19th century to the present. Throughout the semester, we will examine the many artistic movements in modernism's wake, including impressionism, expressionism, American idealism, and others as well as the rise of the avant-garde and the development of computer-generated music. This course includes visits to Lincoln Center for the Performing Arts.

**MUSC 330. History of Jazz. 3 Credits.**

This course investigates the evolution of jazz from its origins in late 19th-century New Orleans to its present-day manifestation as an international musical idiom. With emphasis on contextualization, specific focus is directed to the diverse but interconnected issues of race, culture, politics, commerce, and technology. Equal focus is directed to the music itself. Through the practice of critical listening, students will be conditioned to recognize various jazz styles and their constituent (musical) parts related to rhythm, improvisation, harmony, form, and instrumentation.

**MUSC 345. Psychology of Music. 3 Credits.**

Presents an overview of leading theories in the areas of music cognition, the perception of pitch, melody, harmony, and rhythm, the effect on emotion, the origins of music, and the nature of musical performance and composition. This course is designed to provide a working knowledge of the processes involved in listening to and creating music.

**MUSC 375. Internship. 3 Credits.**

Students participate in an off-campus training experience closely related to their area of study. Frequent meetings with the internship advisor and a paper are required. Internships are arranged through the Center for Career Development and must be approved in advance by the chair and the Dean of the School of Arts.

**MUSC 380. History of Sound Recording & Audio Technology. 3 Credits.**

Examines the history, culture, and aesthetics of music and technology as deployed in experimental and popular music from the 19th century to the present. The course includes an instrument lab to allow students a critical tactile understanding of various musical instruments in relation to sound production, texture, and timbre.

**MUSC 390. Digital Audio Recording and Editing. 3 Credits.**

An introduction to music and digital technology designed to help students gain familiarity with the language of music editing, recording, and production. Although the Apple-based program Logic will be the main software used for recording musical and other sonic schemes, ProTools, Finale, and GarageBand will also be used. Students will have access to Apple MacIntels, MIDI Controllers, Condenser Microphones, Monitor Speakers, Digital Pianos, and DigiDesign Mbox2 Sound Modules. Some minor musical knowledge is highly recommended.

**MUSC 393. Audio Mixing & Music Prod. 3 Credits.**

An advanced course designed to elevate students to a professional level of audio mixing and music production. The course will be taught in a Pro Tools environment, while Logic Pro and Ableton Live will be used for post-production. Students will have access to Apple MacIntels, MIDI Controllers, Condenser Microphones, Monitor Speakers, Digital Pianos, and DigiDesign Sound Modules. Pre-requisites: MUSC 208 or MUSC 209 or MUSC 220 or MUSC 390.

**MUSC 395. Acoustics & Sound Control. 3 Credits.**

Examines the science and theory of acoustics via sound production and capture in various mediums and in various controlled spaces. This course is designed to introduce the fundamentals of acoustics, with a focus on sound capture and control for recorded music and live performance. Prerequisites: MATH 100 or MATH 151 and MUSC 380 or MUSC 390.

**MUSC 400. Special Topics: in Music. 3 Credits.**

Special Topics: Music: 'An intensive study of a single composer, genre, period, culture, or issue facing music scholarship today. The subject studied will vary from semester to semester. Previous special topic courses include 'History of Opera,' 'Popular Music Criticism and Journalism,' 'Issues in Contemporary Popular Music,' 'Gender and Sexuality in Popular Music,' and 'Music of the Caribbean'.

**MUSC 405. Senior Seminar: Contemporary Sound Design. 3 Credits.**

The capstone course for the sound studies major. Students explore the contemporary theories within acoustic studies, sound recording, instrument construction, experimental music composition, architecture, and performance practice that are a necessary resource for sound designers and sound consultants today. Prerequisites: MUSC 380, MUSC 393, and MUSC 395.

**MUSC 410. Independent Study. 3 Credits.**

Individual study of a major composer or an aesthetic issue facing music scholarship today with a member of the department. Open only to students who secure the approval of the Chair of the Department and the consent of the individual instructor. A student may elect this course only once for credit towards the Minor in Music.

**Theater Courses****THEA 134. The Manhattan College Players. 1 Credit.**

The study and performance of theatrical works for small and large ensembles. A public performance is given each term, along with a number of cabaret and/or vaudeville presentations. Prior theatrical experience is not required. Pass/Fail grading. May be repeated for credit (a maximum of three credits). Three hours a week. All students who participate in the ensemble for credit receive ten individual lessons from the director or an outside professional.

**THEA 190. Acting Skills and Techniques. 3 Credits.**

Focuses on the basic techniques of sensory awareness, memory, improvisation, voice, character study and role preparation with emphasis on the works of Constantin Stanislavsky. Special projects include presentations and rehearsal techniques for scene study. Materials Fee: \$75.

**THEA 250. Modern Dance:Thought & Motion. 3 Credits.**

Introduces the art of the modern dance and topics that shape current thinking about the purpose and value of dance in Western society. Dance topics include modernity and autonomy, community and agency, American idealism, spirituality and the body, and post-modernism and movement. Although no dance experience is necessary, students are expected to actively participate in the creation of dance throughout the course.

**THEA 260. Introduction to Theater. 3 Credits.**

Provides an introduction to the analysis, research, and production of the theatrical arts and performance studies. Students will read performance texts from a variety of cultures and traditions as well as attend live performances. Lectures provide context from theater history, theory, and practice to enable nuanced reading and understanding of play texts and performances. Furthermore, students will learn about the process of creating theater (including acting, design, directing, dramaturgical work, the rehearsal process, etc.), as well as analyze and discuss plays by exploring their historical and social contexts. Materials Fee: \$75.

**THEA 350. Contemporary Dance Composition. 3 Credits.**

Introduces principles of contemporary dance and practical methods that explore the craft of choreography. Dance topics include improvisation, Alexander Technique, motif development, randomness and aleatoric dance, movement and language, and the relationship between music and dance. Some dance experience is highly recommended as students are expected to progress quickly throughout the course.

**THEA 375. Internship. 3 Credits.**

Students participate in an off-campus training experience closely related to their area of study. Frequent meetings with the internship advisor and a paper are required. Internships are arranged through the Center for Career Development and must be approved in advance by the chair and the Dean of School of Arts.

**THEA 400. Spl Tpc: In Theater. 3 Credits.**

An intensive study of a playwright, choreographer, director, genre, period, or issue facing theater scholarship today. The subject studied will vary semester to semester. A student may elect this course only once for credit towards the Minor in Theater.

**THEA 405. Independent Study. 3 Credits.**

Individual study of a major playwright, director, or aesthetic issue facing theater scholarship today with a member of the department. Open only to students who secure the approval of the Chair of the Department and the consent of the individual instructor. A student may elect this course only once for credit towards the Minor in Theater.



# Peace and Justice Studies

Dr. Nuwan Jayawickreme  
Director of the Program

Peace and Justice Studies is the academic program that embraces Manhattan College's Lasallian commitment to advancing social justice. One of the oldest programs of its kind in the United States, the Peace and Justice Studies program is interdisciplinary in nature, drawing on the strength of faculty in areas such as Communications, Economics, English, Environmental Science, History, Management, Modern Languages, Philosophy, Political Science, Psychology, Sociology, and Religious Studies. The program's fundamental goal is to understand and evaluate structural injustice, the aspects of human nature that lead to violence and war, and the work of social movements that seek to realize peace, nonviolence, and social justice.

Manhattan College offers Peace and Justice Studies as a major or minor field of study leading to the B.A. degree. It is encouraged that students interested in a major in Peace and Justice Studies pair it with a major in another academic discipline.

Peace and Justice Studies is housed in the School of Liberal Arts, but is also available as a major or minor for students in the Schools of Science and Engineering, and is possible as a minor for students in the School of Business.

## ***Goals of the Peace and Justice Studies Major***

*A Major in Peace and Justice Studies will be able to:*

- Identify current issues of conflict and injustice.
  - Fulfilled by *Conflicts and Injustices* and *Internship* course requirement
- Describe normative models about peace, nonviolence, and social justice.
  - Fulfilled by *Introduction to Peace and Justice Studies* course requirement and *Concepts in Peace and Justice Studies* course requirement (2 courses in 2 different departments)
- Explain how both the psychological make-up of humans and social structures promote conflict and injustice and/or promote positive peace and social justice.
  - Fulfilled by *Concepts in Peace and Justice Studies* course requirement (2 courses in 2 different departments)
- Synthesize knowledge across academic disciplines concerning the psychological and structural dimensions that promote conflict and injustice with the goal of creating blueprints to achieve negative and positive peace
  - Fulfilled by *Methods* course requirement and by *Capstone* course requirement
- Apply specific skills that will enable them to understand and critique problems of conflict and injustice, as well as contemplate solutions to these problems. These skills may include a knowledge of quantitative and qualitative data analysis, so that one can both identify and separate accurate evidence from misinformation or poorly gathered data, and also generate accurate evidence, or conflict resolution skills that can be employed in their own lives.
  - Fulfilled by *Methods* course requirement, by *Capstone* course requirement and by *Peacebuilding Skills* requirement

## Requirements for Majors

Majors must take 30 credits, including the following:

### A. Introductory Course 3

PEAC 201	Introduction to Peace and Justice Studies
RELS 255	Introduction to Peace and Justice Studies
POSC 207	Introduction to Peace Studies

### B. One of the following Methods courses 3

HIST 300	Historical Methods
POSC 210	Research Methods in Political Science
PSYC 314	Statistics and Research Methods II <sup>+</sup>
SOC 307	Research Methods

### C. One of the following Capstone courses 3

HIST 490	Senior Seminar
PEAC 401	Senior Seminar in Peace and Justice Studies
POSC 405	Special Topics: Senior Seminar: United States Government and Politics
POSC 412	Senior Seminar: Women in Politics
PSYC 414	Senior Capstone: Advanced Research Methods
POSC 420	Senior Seminar: Conflict Resolution
POSC 426	Senior Seminar: The Politics of Race, Ethnicity, and Class in the United States
POSC 440	Seminar: European Politics
POSC 450	Senior Seminar: Politics of International Economics
POSC 452	Special Topics Senior Seminar: Comparative Politics
POSC 455	Seminar: Diplomacy
POSC 473	Senior Seminar: Contemporary Western Political Thought
POSC 480	Special Topics Senior Seminar: Political Theory
SOC 416	Seminar in Sociology

Another capstone course approved by the Program Director of Peace and Justice Studies

### D. Two of the following Concepts in Peace and Justice Studies courses: <sup>\*</sup> 6

COMM 371	Intercultural Communication
CRES 150	Introduction to Critical Race & Ethnicity Studies
ENGL 347	Literature and War
ENGL 348	Postcolonial Literature
PHIL 238	Philosophies of War and Peace
PHIL 325	Marx and Marxism
POSC 324	Constitutional Law: Civil Liberties
POSC 354	Human Rights
POSC 351	International Relations
POSC 352	International Organizations

PSYC 321	Social Psychology
PSYC 330	Special Topic: in Psychology (Peace Psychology)
PSYC 348	Cultural Psychology
RELS 204	Religion and Social Justice
RELS 238	Theologies Of Liberation
RELS 254	Catholic Social Teaching
RELS 381	Religious Dimensions of Peace
RELS 333	Non-Violent Revolution
SOC 302	Race And Resistance
SOC 304	Social Inequalities
SOC 319	Practicing Empowerment
SOC 327	Power and Conflict
<b>E. One of the following Conflicts and Injustices courses:</b>	
HIST 231	Introduction to African American History
HIST 306	History of the Modern Middle East
HIST 307	Genocide and Racism
HIST 314	Modern Africa
HIST 328	Cold War Diplomacy in Asia
HIST 334	Diplomatic History of the Vietnam Wars
HIST 357	Nazi Germany and the Holocaust
HIST 362	US Foreign Relations, 1900 to the Present
HIST 366	US Labor Patterns and Movement
HIST 383	Civil War and Reconstruction
HIST 390	Terror and Terrorism
HIST 391	Decolonization: The End of Empires
HIST 392	History of the Israeli-Palestinian Conflict
LABR 201	Labor Studies Colloquium
POSC 251/ INTL 201	Global Issues
POSC 331	Government and Politics of Russia and Selected Soviet Successor States
POSC 332	Government and Politics of Central and Eastern Europe
POSC 340	Government and Politics of Asia
POSC 343	Government and Politics of the Middle East
POSC 344	Government and Politics of the Caribbean
POSC 345	Government and Politics of Latin America
POSC 346	Government and Politics of Africa
POSC 348	Government and Politics of the European Union
POSC 357	United States Foreign Policy
RELS 342	Islam and Politics
RELS 399	Criminal Justice Ethics

SOC 212	Migration, Globalization, and Culture
SOC 262	Contemporary Latin American Development
SOC 220	Social Problems
SOC 273	Mass Incarceration and Collateral Consequences
SOC 328	Societies and Cultures of Latin America
SOC 329	Political Economy of Global Migration
SOC 332	Labor Studies Colloquium
SOC 369	Current Issues in Criminal Justice

**F. One of the following Peacebuilding Skills courses** **3**

COMM 217	Introduction to Public Relations
COMM 307	Writing for Public Relations
MGMT 201	Introduction to Management
MGMT 450	Negotiation & Conflict Mgmt **
POSC 318	Community Organizing for Social Change
SOC 318	Community Organizing for Social Change

A Language course in addition to the two language courses required by the Liberal Arts core.

Another course approved by the Program Director of Peace and Justice Studies

**G. One field work, internship or community engaged learning** **3**

PEAC 451	Peace and Justice Field Project
PEAC 453	Community Engaged Learning
PEAC 475	Internship
RELS 205	Urban America and Catholic Social Teaching

**H. Two Electives** **6**

See list below.

Total Credits **30**

+ PSYC 214: Statistics and Research Methods is a prerequisite for this course. Majors can use one of their electives to take this course prior to enrolling in PSYC 314.

\* Courses should be selected from different departments.

\*\* Requires prerequisites

Students may choose to write a senior thesis, for which they should register for PEAC 421 Independent Study or PEAC 422 Independent Studies: Peace and Justice.

A minimum grade of C is required for credit toward the major.

## Requirements for Minor

Minors must take 15 credits, including the following:

**A. Introductory Course** **3**

PEAC 201	Introduction to Peace and Justice Studies
POSC 207	Introduction to Peace Studies
RELS 255	Introduction to Peace and Justice Studies

**B. 12 additional credits chosen from the list of courses above in consultation with the Program Director. No more than 6 of these 12 credits can come from the same department** **12**

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Total Credits **15**

A minimum grade of C is required for credit toward the minor.

## **Elective Courses for Peace and Justice Studies Majors and Minors**

BIOL 223	Ecology	4
COMM 217	Introduction to Public Relations	3
COMM 307	Writing for Public Relations	3
COMM 340	Media Criticism	3
COMM 371	Intercultural Communication	3
CRES 150	Introduction to Critical Race & Ethnicity Studies	3
ECON 334	International Economics	3
ECON 412	Economic Growth and Development	3
ENGL 265	Global Literature in English	3
ENGL 279	Literature and the Environment	3
ENGL 345	Environmental Literature and Ecocriticism	3
ENGL 347	Literature and War	3
ENGL 348	Postcolonial Literature	3
ENGL 380	Growing Up Ethnic: The Ethnic-American Bildungsroman	3
HIST 231	Introduction to African American History	3
HIST 306	History of the Modern Middle East	3
HIST 307	Genocide and Racism	3
HIST 313	Vietnam to the Philippines	3
HIST 314	Modern Africa	3
HIST 319	The Crusades	3
HIST 326	Diplomatic History of Europe 1815-1914	3
HIST 328	Cold War Diplomacy in Asia	3
HIST 334	Diplomatic History of the Vietnam Wars	3
HIST 347	The Sixties	3
HIST 351	Age of the French Revolution	3
HIST 354	History of the Soviet Union	3
HIST 358	The Industrial Revolution	3
HIST 366	US Labor Patterns and Movement	3
HIST 389	Gender and Sexuality in the Modern Middle East	3
HIST 393	Global Feminisms	3
HIST 355	East Europe in Modern Times	3
HIST 357	Nazi Germany and the Holocaust	3
HIST 362	US Foreign Relations, 1900 to the Present	3

HIST 383	Civil War and Reconstruction	3
HIST 390	Terror and Terrorism	3
HIST 391	Decolonization: The End of Empires	3
HIST 392	History of the Israeli-Palestinian Conflict	3
MGMT 201	Introduction to Management	3
MGMT 309	Management of International Business	3
MGMT 450	Negotiation & Conflict Mgmt	3
PEAC 302	Special Topic	3
PEAC 421	Independent Study	3
PEAC 451	Peace and Justice Field Project	3
PEAC 452	Peace and Justice Field Project	3
PEAC 453	Community Engaged Learning	3
PEAC 475	Internship	3
PHIL 201	Ethics	3
PHIL 238	Philosophies of War and Peace	3
PHIL 325	Marx and Marxism	3
POSC 209	Comparative Politics	3
POSC 222	Power in the City	3
POSC 223	Environmental Politics	3
POSC 251	Global Issues	3
POSC 254	Global Cities	3
POSC 318	Community Organizing for Social Change	3
POSC 324	Constitutional Law: Civil Liberties	3
POSC 331	Government and Politics of Russia and Selected Soviet Successor States	3
POSC 332	Government and Politics of Central and Eastern Europe	3
POSC 340	Government and Politics of Asia	3
POSC 343	Government and Politics of the Middle East	3
POSC 344	Government and Politics of the Caribbean	3
POSC 345	Government and Politics of Latin America	3
POSC 346	Government and Politics of Africa	3
POSC 348	Government and Politics of the European Union	3
POSC 351	International Relations	3
POSC 352	International Organizations	3
POSC 354	Human Rights	3
POSC 357	United States Foreign Policy	3
POSC 367	Model United Nations	3
POSC 368	Model United Nations II	3
POSC 491	SUNY Washington Internship Program	15
POSC 493	SUNY Summer Washington Internship Program	6
POSC 494	American University Seminar Program	15

PSYC 321	Social Psychology	3
PSYC 330	Special Topic: in Psychology (Peace Psychology)	3
PSYC 348	Cultural Psychology	3
RELS 204	Religion and Social Justice	3
RELS 205	Urban America and Catholic Social Teaching	3
RELS 238	Theologies Of Liberation	3
RELS 254	Catholic Social Teaching	3
RELS 310	Religion & The Holocaust	3
RELS 333	Non-Violent Revolution	3
RELS 342	Islam and Politics	3
RELS 362	Ethics in the Workplace	3
RELS 377	Religion and Environmentalism	3
RELS 381	Religious Dimensions of Peace	3
RELS 399	Criminal Justice Ethics	3
SOC 212	Migration, Globalization, and Culture	3
SOC 220	Social Problems	3
SOC 225	Telling Stories with Maps	3
SOC 250	Introduction to GIS	3
SOC 262	Contemporary Latin American Development	3
SOC 273	Mass Incarceration and Collateral Consequences	3
SOC 275	Police & Society	3
SOC 290	Codes of Gender	3
SOC 294	Gender, Crime & Justice	3
SOC 295	Capitalism	3
SOC 296	Introduction to Human Geography	3
SOC 302	Race And Resistance	3
SOC 304	Social Inequalities	3
SOC 317	Anthropology of Drugs	3
SOC 318	Community Organizing for Social Change	3
SOC 319	Practicing Empowerment	3
SOC 324	Sociological Theories	3
SOC 329	Political Economy of Global Migration	3
SOC 332	Labor Studies Colloquium	3
SOC 333	US Labor Patterns and Movements	3
SOC 334	Sustainable Development	3
SOC 364	Law and Society	3
SOC 361	Criminal Justice Administration	3
SOC 327	Power and Conflict	3
SOC 328	Societies and Cultures of Latin America	3

## Courses

### **PEAC 201. Introduction to Peace and Justice Studies. 3 Credits.**

An introduction to the nature, scope, and methodology of Peace and Justice Studies as well as explore some major contemporary problems which threaten peaceful and just relations between groups, nations or individuals.

### **PEAC 302. Special Topic. 3 Credits.**

Course descriptions will be announced when courses are offered.

### **PEAC 401. Senior Seminar in Peace and Justice Studies. 3 Credits.**

An in-depth interdisciplinary analysis of specific research and practical problems. Intended to help the student integrate the various courses he/she has taken in Peace and Justice Studies.

### **PEAC 421. Independent Study. 3 Credits.**

Available for the Peace and Justice Studies student who wishes to conduct in-depth research on a specific topic in Peace and Justice Studies. May be used for the senior thesis.

### **PEAC 422. Independent Studies: Peace and Justice. 3 Credits.**

Available for the Peace and Justice Studies student who wishes to conduct in-depth research on a specific topic in Peace and Justice Studies. May be used for the senior thesis.

### **PEAC 451. Peace and Justice Field Project. 3 Credits.**

Practical, off-campus training in conflict resolution, mediation and arbitration, international diplomacy, and social justice projects. Specialized work at the American Arbitration Association, the United Nations, Educators for Social Responsibility, the American Friends Service Committee, Pax Christi, and other organizations involved in peace and social justice activities. International opportunities available.

### **PEAC 452. Peace and Justice Field Project. 3 Credits.**

Practical, off-campus training in conflict resolution, mediation and arbitration, international diplomacy, and social justice projects. Specialized work at the American Arbitration Association, the United Nations, Educators for Social Responsibility, the American Friends Service Committee, Pax Christi, and other organizations involved in peace and social justice activities. International opportunities available.

### **PEAC 453. Community Engaged Learning. 3 Credits.**

All community engaged learning (CEL) courses offered at Manhattan College will be cross-listed with PEAC 453. Peace and Justice Studies majors can take PEAC 453 to fulfill the "Field work, internship or community engaged learning course" major requirement.

### **PEAC 475. Internship. 3 Credits.**

Students participate in an off-campus training experience closely related to their area of study. Frequent meetings with the internship advisor and a paper are required. Internships are arranged through the Center for Career Development and must be approved in advance by the chair and the Dean of the School of Liberal Arts. Open to majors only.



# Philosophy

Dr. Eoin O'Connell  
Chair of the Department

It is as true today as it was 2,000 years ago: philosophy provides the foundation for a liberal education. Studying philosophy sharpens students' ability to understand and analyze concepts, assumptions, beliefs, logical errors and commonly held opinions. It promotes clarity and precision in speaking, comprehension and writing. Majors in philosophy typically receive among the highest average scores of any major on the GREs and LSATs. Philosophy students enjoy successful careers in a wide variety of fields including law, business, medicine, the media and education.

In philosophy, students grapple with big questions: What is the nature of the good life? What does it mean to be ethical? What can we know with certainty? What is the nature of reality? Philosophers ask a lot of questions that don't seem to have simple or concrete answers. But one of the great strengths of a philosophical education is that it develops students' ability to ask good questions. As Aristotle claimed, the mark of a well-educated person is not that he or she has amassed knowledge about many fields but that he or she knows how to ask good questions. To be able to ask the right questions at the right time is highly prized by employers and colleagues.

Manhattan College's major and minor in philosophy allow students to ask these profound questions and engage with some of the most significant minds in history. Courses will focus either on a historical period/tradition or on contemporary/topical issue. In all our courses, students are exposed to a panorama of influential ideas from different periods and traditions.

## Major

A minimum of thirty credits in philosophy courses distributed as follows:

Four required core courses:		12
PHIL 201	Ethics	
PHIL 213 or PHIL 214	Introduction to Logic Critical Thinking	
PHIL 215	Ancient Greek Philosophy	
PHIL 316	Modern Philosophy	
One historical period/tradition course:		3
PHIL 210	Faith and Reason	
PHIL 320	Nineteenth-Century Philosophy	
PHIL 334	Existentialism	
PHIL 325	Marx and Marxism	
PHIL 335	20th Century Philosophy	
One contemporary and/or non-Western course:		3
PHIL 218	Philosophy & Literature	
PHIL 350	Philosophers on Race, Class, and Gender	
PHIL 352	Philosophers on Sexuality, Love, and Friendship	

PHIL 238	Philosophies of War and Peace	
PHIL 274	Western Political Thought	
PHIL 332	Africana Philosophy	
PHIL 399	Topics: in Philosophy	
One seminar:		3
PHIL 401	Major's Seminar	
Electives at the 200-level or above chosen in consultation with the major advisor		9
Total Credits		30

## Minor: Philosophy

A minimum of fifteen credits in philosophy courses distributed as follows:

PHIL 201	Ethics	3
PHIL 215	Ancient Greek Philosophy	3
Electives selected from PHIL 150 or any course at the 200-level or above chosen in consultation with the minor advisor		9
Total Credits		15

## Courses

### **PHIL 150. Roots: Philosophy. 3 Credits.**

An intensive and critical examination of selected philosophical texts and developments from the medieval period to the present that contribute to an understanding of the modern world.

### **PHIL 152. Roots of Modern Age: Philosophy - FYS. 3 Credits.**

An intensive and critical examination of selected philosophical texts and developments from the medieval period to the present that contribute to an understanding of the modern world.

### **PHIL 201. Ethics. 3 Credits.**

An introduction to moral decision making emphasizing the criteria used in assessing moral problems and dilemmas. Required of students in the School of Business.

### **PHIL 205. Environmental Ethics. 3 Credits.**

This course considers the ethical and philosophical dimensions of the relationship between human beings and the natural world. What is an environment; and what, if any, are our moral obligations towards it? Do we have moral obligations to anything other than human beings? Does the environment itself have some intrinsic value? How do we balance sustainability and growth?.

**PHIL 210. Faith and Reason. 3 Credits.**

Focuses primarily on thinkers in the Catholic intellectual tradition, this course is guided by two hermeneutical principles. First, faith and reason are aspects of the human condition that are neither mutually exclusive nor inherently antagonistic. Second, faith and reason can be mutually illuminative and fruitfully conjoined in theory and process.

**PHIL 211. Introduction to Philosophy. 3 Credits.**

The major theoretical and practical issues raised by the classical philosophers, especially Plato, Aristotle, and later figures.

**PHIL 213. Introduction to Logic. 3 Credits.**

Fundamental principles of correct reasoning; logical validity; deductive argument; formal and informal fallacies; problems of semantics and definition; problem of induction and scientific method.

**PHIL 214. Critical Thinking. 3 Credits.**

Introduces the principles and techniques of critical thinking. Students will develop a set of concepts and techniques used to analyze and evaluate complex reasoning. Formal and informal fallacies will be studied, and students will develop their own arguments.

**PHIL 215. Ancient Greek Philosophy. 3 Credits.**

Examines the major theoretical and practical issues raised by the classical Greek Philosophers, especially the pre-Socratics, Plato, and Aristotle. Required for philosophy majors and minors.

**PHIL 218. Philosophy & Literature. 3 Credits.**

Two fundamental assumptions guide this course: first, all great literary works are inherently philosophical; second, great works of literature and great works of philosophy can complement one another in such a way as to deepen our understanding of both.

**PHIL 220. Philosophy of Religion. 3 Credits.**

Symbols and myths in religious experience; arguments for believing or not believing in God; the problem of evil; critiques of religion as projection, opiate or illusion.

**PHIL 228. Philosophy & Film. 3 Credits.**

An exploration of the intersection of philosophy, one of the most ancient disciplines, and film, one of the youngest art forms. Through discussing the plots and imagery of films, we address such enduring philosophic issues as personal identity, moral decision making, and humanity's relationship to nature, technology, God, and time.

**PHIL 230. Philosophy of Law. 3 Credits.**

Theories of law; natural law versus legal positivism; legal paternalism; the right to privacy; legal reinforcement of moral standards; justice and fairness; legal responsibility; theories of punishment.

**PHIL 236. Philosophy and Psychoanalysis. 3 Credits.**

A concentration on selected major writings of Freud so as to achieve an understanding of the complexity of his thought before undertaking any kind of disciplined criticism in the light of oft-concealed philosophical presuppositions.

**PHIL 238. Philosophies of War and Peace. 3 Credits.**

Historical-conceptual consideration of war, peace, causes, and conditions of war and peace; social strife, racism, sexism, attitudes toward war and peace, peaceful coexistence, pacifism, nonviolence as techniques of struggle.

**PHIL 251. Philosophers on Education. 3 Credits.**

An examination of conflicting philosophies of education and their implications. Highly recommended for students in the School of Education and Health.

**PHIL 271. U.S. Political Thought. 3 Credits.**

Analysis from original sources of major United States political and constitutional writers from colonial times to the present.

**PHIL 274. Western Political Thought. 3 Credits.**

Introduction to Western political theory through examining the written dialogue (between philosophers) which has contributed to what we know as the canon, on the state and society in the West.

**PHIL 315. Medieval Philosophy. 3 Credits.**

Medieval thought generated a variety of philosophical perspectives. To understand the distinctive character of the medieval philosophical pluralism, selected texts will be examined in Augustine, Boethius, Abelard, Anselm, Bonaventure, Aquinas, and Ockham.

**PHIL 316. Modern Philosophy. 3 Credits.**

Introduces the major texts, thinkers, and ideas of seventeenth- and eighteenth-century European philosophy. Texts by Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume, and Kant will be studied from the perspective of their contributions to epistemology and metaphysics.

**PHIL 320. Nineteenth-Century Philosophy. 3 Credits.**

The nineteenth century was an extraordinarily rich period for philosophy when the influence of philosophers spread far beyond the academy. Many movements that began in philosophy during the nineteenth century, such as Marxism, Existentialism, and Pragmatism have continued to be influential. This course focuses on philosophers who were central to several important movements, for example, Hegel, Marx, Kierkegaard, Nietzsche, and William James.

**PHIL 325. Marx and Marxism. 3 Credits.**

A study of the genesis and development of Marx's philosophy as a framework for understanding his theories of history and capitalism and his influence on modern thought and economic and social theories.

**PHIL 330. American Philosophy. 3 Credits.**

A critical analysis of pragmatism and the concept of experience through major figures in American Philosophy, for example, Peirce, James, Mead, Dewey, and Rorty.

**PHIL 332. Africana Philosophy. 3 Credits.**

A philosophy course introducing African philosophy, broadly construed. The course may cover traditional and contemporary African philosophy, Africana philosophy in the diaspora, Afro-Caribbean philosophy, African constitutional philosophy and philosophy of law, decolonial philosophy, African feminist and queer philosophy, and the cross-pollination between African and African-American philosophy and political thought.

**PHIL 334. Existentialism. 3 Credits.**

An exploration of the major themes in the writings of Kierkegaard, Nietzsche, Camus, Beauvoir, Sartre, Weil and others, with emphasis on their religious, social, political and economic implications.

**PHIL 335. 20th Century Philosophy. 3 Credits.**

This course examines the remarkable variety of topics, philosophers, and movements in the twentieth-century, for example, analytic philosophy, neo-pragmatism, existentialism, and phenomenology. The course typically will emphasize different topics, philosophers, and movements each time it is offered.

**PHIL 342. Chinese and Japanese Philosophies. 3 Credits.**

The role of filial piety and ancestor worship in perpetuating familial and social continuity; the Confucian union of nature and culture in the harmonious man; the Taoist emphasis on privacy in the midst of an overstructured world; Legalism as the first coherent totalitarian political philosophy; the Japanese sense of beauty.

**PHIL 350. Philosophers on Race, Class, and Gender. 3 Credits.**

An examination of theories of racial, cultural, class and gender superiority presented by traditional philosophers with a contemporary response.

**PHIL 352. Philosophers on Sexuality, Love, and Friendship. 3 Credits.**

An examination of the views of Plato, Aristotle, Nietzsche, Freud, and other major thinkers on these themes; some contemporary perspectives.

**PHIL 375. Internship. 3 Credits.**

Students participate in an off-campus training experience closely related to their area of study. Frequent meetings with the internship advisor and a paper are required. Internships are arranged through the Center for Career Development and must be approved in advance by the chair and the Dean of the School of Arts.

**PHIL 399. Topics: in Philosophy. 3 Credits.**

A seminar on a single philosopher, topic, or period. The subject will vary from semester to semester. Open to non-majors as well as majors.

**PHIL 401. Major's Seminar. 3 Credits.**

An intensive study of an important philosopher, tradition, question, or area of philosophical research. Students will conduct independent research and complete a capstone project. Only open to philosophy majors and minors in their senior year who have completed two 200- or 300-level courses in Philosophy. Required for Philosophy majors. Some juniors majoring in Philosophy may be admitted with the Chair's approval. May be repeated.

**PHIL 420. Independent Study. 3 Credits.**

Individual study of a philosopher or topic area with a member of the department. Open only to students majoring in philosophy who meet the requirements set by the chair of the department and who secure the consent of the individual instructor.

**PHIL 475. Internship. 3 Credits.**

Students participate in an off-campus training experience closely related to their area of study. Frequent meetings with the internship advisor and a paper are required. Internships are arranged through the Center for Career Development and must be approved in advance by the chair and the Dean of the School of Arts. Open to majors only.

# Psychology

Dr. Zella E. Moore

Chair of the Department

The field of psychology involves a multidisciplinary commitment to the scientific understanding and improvement of human and animal functioning, and seeks to investigate behavioral, cognitive, and emotional processes associated with adaptive and maladaptive experience.

The Psychology Department offers a program that emphasizes both the humanistic and scientific aspects of psychology. The psychology major is designed for students:

1. Who desire to study and understand the human experience,
2. Who want to enter psychology as a profession, or
3. Who regard psychology as a liberal arts preparation for further training in the professions. In order to meet the diverse needs of students, the Psychology Department offers both a B.A. and a B.S. degree and an optional concentration in Industrial-Organizational Psychology. There is also a specific track for Education students concentrating in Psychology. These degrees and options are discussed in greater detail below.

The Psychology Department maintains five important goals, adapted from the guidelines of the American Psychological Association:

- **Goal 1: Knowledge Base.** Demonstrate fundamental knowledge and comprehension of the major concepts, theoretical perspectives, historical trends, and empirical findings to discuss how psychological principles apply to behavior and mental processes. This includes, but is not limited to, developing a working knowledge of psychology's content domains.
- **Goal 2: Scientific Inquiry and Critical Thinking.** Demonstrate scientific reasoning and problem solving, including effective research methods This includes, but is not limited to, using scientific reasoning to interpret psychological phenomena; interpreting, designing, and conducting basic psychological research; and demonstrating psychology information literacy..
- **Goal 3: Ethical and Social Responsibility in a Diverse World.** Adopt ethically and socially responsible behaviors for professional and personal settings in a landscape that involves increasing diversity. This includes, but is not limited to, applying ethical standards to evaluate and implement psychological science and practice.
- **Goal 4: Communication.** Demonstrate competence in writing and in oral and interpersonal communication skills through the use of discipline-specific language, critical thinking, and APA format.
- **Goal 5: Professional Development.** Apply psychology-specific content and skills, effective self-reflection, project-management skills, teamwork skills, and career preparation to develop a meaningful professional direction for life after graduation.

# Majors

Every student who wishes to declare a major in Psychology should consult with the Department Chair. Students must receive a minimum grade of C in a psychology course for the course to be credited to their major. Students who are considering graduate school should consult with faculty members during their junior year. All students interested in graduate study are advised to take the Graduate Record Examination (GRE). As part of the department's outcomes assessment initiative, all psychology majors may be required to complete a standardized psychology achievement exam and/or senior exit survey during their senior year, as well as surveys measuring department and instructor effectiveness.

## Requirements for a Major in Psychology

All students must complete 30 credits in Psychology for a B.A., or 33 credits in Psychology for a B.S. The B.S. also requires several additional credits in science, as described below. Specific requirements for each degree are as follows:

### I. The Psychology Core

All psychology majors must complete the following four courses in this sequence, although they do not need to be completed in back-to-back semesters:

PSYC 150	Roots: Psychology	3
or PSYC 153	Roots: Psychology - FYS	
PSYC 214	Statistics and Research Methods I	3
PSYC 314	Statistics and Research Methods II	3
PSYC 414	Senior Capstone: Advanced Research Methods (senior year ONLY)	3

Note: For psychology majors, PSYC 150, 153, or 203 is a prerequisites to all 300- and 400-level courses.

### II. The Psychology Distribution

All Psychology majors must take one course from each of the following six areas:

Clinical Psychology/Personality Psychology		3
PSYC 421	Abnormal Psychology	
PSYC 347	Theories of Personality	
Social Psychology/Applied Psychology		3
PSYC 321	Social Psychology	
PSYC 373	Industrial Psychology	
PSYC 374	Organizational Psychology	
Cognitive Neuroscience: Group A		3
PSYC 332	Artificial Psychology	
PSYC 333	Motivation and Emotion	
PSYC 340	Cognition and Learning	

Cognitive Neuroscience: Group B	3
PSYC 435      Physiological Psychology	
PSYC 467      Sensation and Perception	
Developmental Psychology	3
PSYC 334      Lifespan Development	
PSYC 345      Psychology of Childhood	
PSYC 346      Psychology of Adolescence	
One Elective in Psychology	3
Students will choose one elective from all PSYC courses offered	

### **Additional requirements for a 33-credit B.S. in Psychology**

In addition to the requirement above, students seeking a B.S. in Psychology must complete the following requirements:

Permission of the Chairperson of Psychology to enter the B.S. program or a math SAT score of at least 600.

Take one additional course in either Cognitive Neuroscience group A or B, for a total of 9 credits in the cognitive neurosciences. The third course may be chosen from either of the two cognitive neuroscience groups.

The following science requirements:

BIOL 111      General Biology I	4
& BIOL 113      and General Biology I Laboratory	
BIOL 112      General Biology II	4
& BIOL 114      and General Biology II Laboratory	
BIOL 207      Anatomy and Physiology I	4
BIOL 208      Anatomy and Physiology II	4
One of the following:	8
CHEM 101      General Chemistry I	
& CHEM 102      and General Chemistry II	
PHYS 107      Introduction to Physics I	
& PHYS 108      and Introduction to Physics II	

B.S. students are also encouraged, but not required, to take Genetics (BIOL 217 Genetics) and Neurobiology (BIOL 405 Neurobiology).

## **Requirements for Education students concentrating in Psychology**

All Psychology/Education majors must complete the following courses:

The following eight courses are required (24 credits):

PSYC 203      Introduction to Psychology I	3
PSYC 214      Statistics and Research Methods I	3
PSYC 314      Statistics and Research Methods II	3
PSYC 310      Psychology of Developmental Disorders and Delays	3



PSYC 321	Social Psychology	3
PSYC 333	Motivation and Emotion	3
PSYC 340	Cognition and Learning	3
PSYC 421	Abnormal Psychology	3
Psychology/Education students must also successfully complete two of the following elective courses (6 credits):		
PSYC 302	Psychological Testing	3
PSYC 343	Psychology of Women	3
PSYC 347	Theories of Personality	3
PSYC 348	Cultural Psychology	3
PSYC 316	Issues Affecting Today's Youth	3

## Optional Concentration in Industrial/Organizational Psychology (for Psychology Majors only)

In addition to the requirements for psychology majors described above, students who wish to specialize in industrial/organizational psychology may do so by completing the requirements listed below. This is fully optional.

PSYC 373	Industrial Psychology	3
PSYC 374	Organizational Psychology	3
PSYC 302	Psychological Testing	3
One of the following:		3
PSYC 333	Motivation and Emotion	
PSYC 341	Health Psychology	
One of the following:		3
PSYC 429	Research in Psychology	
PSYC 430	Research in Psychology	
PSYC 375	Internship	
PSYC 475	Internship	

## Requirements for a Minor in Psychology

15 approved credits, including PSYC 203 Introduction to Psychology I, PSYC 153 Roots: Psychology First Year Seminar, or PSYC 150 Roots: Psychology, and any 12 additional PSYC credits. Students wishing to minor in Psychology must consult with the Chair of the Department and complete a minor declaration form.

## Courses

### PSYC 150. Roots: Psychology. 3 Credits.

An explanation and critical examination of selected concepts in the social sciences. Students examine the logic and methods of social science research and engage in analysis of contemporary social issues from the perspective of the discipline of psychology. (Not open to students who have taken PSYC 153 or PSYC 203.)

**PSYC 153. Roots: Psychology - FYS. 3 Credits.**

An explanation and critical examination of selected concepts in the social sciences. Students examine the logic and methods of social science research and engage in analysis of contemporary social issues from the perspective of the discipline of psychology. (Not open to students who have taken PSYC 150 or PSYC 203.)

**PSYC 203. Introduction to Psychology I. 3 Credits.**

A survey of the fundamental concepts of the science of human and animal behavior, emphasizing human development, learning and memory, psychological testing, personality, and abnormal behavior. Not open to students who have taken PSYC 150 or PSYC 153.

**PSYC 214. Statistics and Research Methods I. 3 Credits.**

This course explores the research methodologies, statistical concepts, and procedures employed to create and test psychological theory. This course will emphasize an integration of introductory method topics and statistical procedures, including descriptive and correlation-based statistics, natural observation, and survey design. You will learn about psychological methods in lecture, discussion, and through hands-on practice. You will design and conduct research, analyze and interpret data both by hand and using SPSS, review research literature, and prepare APA-style reports. This course is required for all Psychology majors in the School of Liberal Arts, and is a prerequisite to PSYC 314. Prerequisite: PSYC 150 or PSYC 153 or PSYC 203.

**PSYC 216. Behavior Modification. 3 Credits.**

A survey of the principles of learning as applied to selected problems of behavior.

**PSYC 257. Forensic Psychology. 3 Credits.**

An analysis of psychological causes of criminal behavior. Topics include antisocial personality, neuropsychological components of criminality, and the interface between psychology and law in areas such as jury selection, sentencing, the insanity plea, eyewitness testimony, and psychiatric evaluation of defendants.

**PSYC 302. Psychological Testing. 3 Credits.**

A survey of the various tests available to psychologists, including intelligence, achievement, aptitudes, and personality tests. The student is not trained for clinical interpretations. Prerequisite: PSYC 214.

**PSYC 310. Psychology of Developmental Disorders and Delays. 3 Credits.**

This course provides an overview of developmental disorders, delays, and psychopathology among children. The course will emphasize assessment, diagnosis, and treatment. Students may be expected to perform field activities and child observations.

**PSYC 314. Statistics and Research Methods II. 3 Credits.**

This course continues exploring the research methodologies, statistical concepts, and procedures employed to create and test psychological theory. This course will emphasize an integration of method topics and statistical procedures, including hypothesis testing using t-test and ANOVA, and experimental design. You will learn about psychological methods in lecture, discussion, and through hands-on practice. You will design and conduct research, analyze and interpret data both by hand and using SPSS, review research literature, and prepare APA-style reports. This course is required for all Psychology majors in the School of Liberal Arts, and is a prerequisite to 414 Prerequisite: PSYC 214.

**PSYC 316. Issues Affecting Today's Youth. 3 Credits.**

An overview of issues affecting psychological, physical, intellectual, and social development in today's youth. Empirical and theoretical foundations of these issues and the impact on development will be emphasized. Implications for parenting, education, prevention and intervention will be addressed; appropriate for anyone interested in the issues of modern day youth.

**PSYC 321. Social Psychology. 3 Credits.**

A study of the processes by which the behaviors, thoughts, and feelings of the individual are influenced by his/her social environment. Topics include: social perception and attribution, attitude development and change; interpersonal attraction and interpersonal relations such as friendship.

**PSYC 327. Interviewing and Counseling. 3 Credits.**

In-depth exploration of techniques for establishing a stable working relationship with a client; examination of prominent contemporary approaches to interviewing and counseling from theoretical and practical standpoints.

**PSYC 330. Special Topic: in Psychology. 3 Credits.**

New course offerings in any area of psychology. Descriptions of specific topics will be posted in the psychology department. Specific requirements will depend upon the topic.

**PSYC 332. Artificial Psychology. 3 Credits.**

What is it that makes us human? In this course we pursue the answer to this question by examining consciousness, free will, creativity and other cognitive capacities. We investigate whether these can be implemented artificially using technological means. We adopt an interdisciplinary approach using perspectives from artificial intelligence, robotics, neuroscience, evolution, psychology and philosophy.

**PSYC 333. Motivation and Emotion. 3 Credits.**

An introduction to human motivation and its interaction with emotions, surveying the research and theories of motivational states such as hunger, sex, affiliation, and aggression and of emotions such as love, fear, and anger.

**PSYC 334. Lifespan Development. 3 Credits.**

The course examines the developmental processes that shape our lives from conception to death. We will explore the ways biological, cognitive, and socio-emotional influences systematically interact to shape the lifespan. Some topics covered include gene-environment interactions, social relationships, personal identity, resilience, and longevity.

**PSYC 340. Cognition and Learning. 3 Credits.**

The course surveys the fundamental operations of the mind as viewed from an information processing perspective. Attention, perception, the representation of knowledge, memory, problem-solving reasoning and language are studied.

**PSYC 341. Health Psychology. 3 Credits.**

The study of the psychological processes that affect health with a focus on stress and stress management. Topics include: psychological analysis of health-promoting and health-compromising behaviors and psycho-biological perspectives on pain management, chronic illness, and terminal illness.

**PSYC 342. Psychology of Family Relationships. 3 Credits.**

The study of love, intimacy, and commitment in traditional and non-traditional families. Topics include: dating, communication, sexuality, and parenting.

**PSYC 343. Psychology of Women. 3 Credits.**

The major objective of this course is to develop an understanding of and critical thinking about the psychology of women. Topics unique to women's lives, such as menstruation, pregnancy, childbirth, and motherhood, will be explored. Additional topics including gender and sexual development, work roles, abuse, violence, and body image will be analyzed.

**PSYC 345. Psychology of Childhood. 3 Credits.**

Study of the physical, mental, emotional and social development of the child from conception to adolescence.

**PSYC 346. Psychology of Adolescence. 3 Credits.**

Study of the physical, mental, emotional and social development of the adolescent.

**PSYC 347. Theories of Personality. 3 Credits.**

An examination of the research and theories explaining the development of personality and its functioning.

**PSYC 348. Cultural Psychology. 3 Credits.**

Cultural psychology takes the position that broad human similarities exist, but that there is also vast psychological variation that is observed across human groups. In this course, we consider current theories and empirical research on culture, race, and ethnicity and examine evidence suggesting the psychological processes are culture-and context-dependent.

**PSYC 360. Independent Study. 3 Credits.**

This course is designed to allow psychology majors to pursue an area of special interest in psychology. Students must present a preparatory outline to qualify. Permission of the faculty mentor, department chair, and the Dean of the School of Arts are required at the time of registration.

**PSYC 373. Industrial Psychology. 3 Credits.**

The application of psychological principles and methods to the study of individuals and groups in the workplace. Topics include: personnel selection, placement, and evaluation; training and development; and human factors engineering.

**PSYC 374. Organizational Psychology. 3 Credits.**

An analysis of human behavior in organizations. Topics include organizational structures and dynamics, motivation and job satisfaction, management styles, and problems in human relations.

**PSYC 375. Internship. 3 Credits.**

Students participate in an off-campus training experience closely related to their area of study. Frequent meetings with the internship advisor and a paper are required. Internships are arranged through the Center for Career Development and must be approved in advance by the chair and the Dean of the School of Arts. Offered fall semester.

**PSYC 414. Senior Capstone: Advanced Research Methods. 3 Credits.**

This senior capstone seminar examines research methods and techniques in a specialized area of psychology such as cognitive, clinical/counseling, developmental, or social. This course will emphasize an integration of advanced method topics and statistical procedures, including Factorial ANOVA and experimental design. You will conceptualize and execute an independent research project, including reviewing the literature, designing a research study, collecting, analyzing, and interpreting data, and culminating in an APA-style research paper and scientific poster presentation. This course is required for all senior Psychology majors in the School of Liberal Arts. Prerequisite PSYC 314.

**PSYC 421. Abnormal Psychology. 3 Credits.**

The course surveys a variety of psychological disorders ranging from anxiety to depression and schizophrenia. Current theories regarding their causes are discussed and compared. Approaches to treating the disorders are also covered with particular emphasis on the psychotherapies and associated behavioral techniques.

**PSYC 429. Research in Psychology. 3 Credits.**

Supervised participation in research design, data collection, statistical analysis, and interpretation of results in conjunction with ongoing research projects in psychology. Permission of the faculty mentor, the department chair, and the Dean of the School of Arts are required at the time of registration.

**PSYC 430. Research in Psychology. 3 Credits.**

Supervised participation in research design, data collection, statistical analysis, and interpretation of results in conjunction with ongoing research projects in psychology. Permission of the faculty mentor, the department chair, and the Dean of the School of Arts are required at the time of registration.

**PSYC 435. Physiological Psychology. 3 Credits.**

An analysis of the biological factors underlying behavior with emphasis on anatomy and functions of the nervous system. Topics include: behavioral genetics and the neurophysiological substrates of learning, motivation, and abnormal behavior. Fall. Spring.

**PSYC 437. Contemporary Psychotherapy. 3 Credits.**

Contemporary forms of psychotherapy are discussed and critically evaluated including psychoanalysis, behaviorism, Gestalt, and humanistic therapies.

**PSYC 460. Independent Study. 1-3 Credit.**

This course is designed to allow psychology majors to pursue an area of special interest in psychology. Students must present a preparatory outline to qualify. Permission of the faculty mentor, department chair, and the Dean of the School of Arts are required at the time of registration.

**PSYC 467. Sensation and Perception. 3 Credits.**

This course explores how we see and hear. Topics include: color vision, object perception, perception of depth, size, and motion. Particular attention is paid to Gestalt psychology and the perception of illusions and ambiguous figures. Not open to students who have completed PSYC 367.

**PSYC 475. Internship. 3 Credits.**

Students participate in an off-campus training experience closely related to their area of study. Frequent meetings with the internship advisor and a paper are required. Internships are arranged through the Center for Career Development and must be approved in advance by the chair and the Dean of the School of Arts. Offered spring semester.

# Religious Studies

Dr. Robert Geraci

Chair of the Department

## Departmental Mission

Religion is everywhere. It is a vital force in human experience and bears critical historical, cultural and political importance. Rooted in Manhattan College's Lasallian identity, the Religious Studies Department prepares students to live in the twenty-first century by providing a person-centered education that examines the dynamic ways that religion and religious traditions shape culture, values, relationships and social structures.. As part of this mission, the department embraces the college's New York City location, and offers students the opportunity to take advantage of all that a global city has to offer. The department explores the power and persistence of religion in a global context by providing courses on specific religious traditions as well as on issues that span cultures and contexts; by producing quality scholarship in both religious studies and theology; and by actively engaging in the life of the college, the broader academic community, and the world at large.

## Introduction

Instruction in the Department of Religious Studies promotes the mission of Manhattan College by providing a contemporary, person-centered educational experience characterized by high academic standards, reflection on faith, values, and ethics, and lifelong career preparation. These goals are accomplished through our nine-credit requirement **for all students** that includes:

1. One course that introduces the study of religion as an academic discipline and global phenomenon: RELS 110.
2. One course that explores the riches of the Catholic intellectual tradition: any course chosen from RELS 200-299 (Elective Group A)
3. One course that raises awareness of global and/or contemporary issues: any course chosen from RELS 300-399 (Elective Group B)

Our goals for majors and minors include an ability to critically read and analyze religious texts, a facility with the methods of the academic study of religion, a familiarity with specific religious traditions, and an understanding of the role that religion plays in contemporary life. The introductory course focuses on a particular theme while introducing students to some of the research tools used in the academic study of religion. A Catholic Studies concentration is offered and/or an interdisciplinary minor. Students can elect to take cross-listed courses in other departments. In addition, students may write a 6-credit honors thesis for departmental honors recognition.

## Requirements for a Major in Religious Studies

Students majoring in Religious Studies ordinarily complete: 1) RELS 110 (<http://catalog.manhattan.edu/undergraduate/arts/religiousstudies/>) – The Nature and Experience of Religion; 2) 15 credits in courses numbered 200 and above (with at least one from Elective Group A and at least one from Elective Group B); 3) 12 credits at the

400-level. These courses are selected in consultation with the Department Chair. The elective courses will ordinarily include at least 1 course from each of the following areas of study:

1. Biblical studies
2. Christian theology
3. Ethics
4. World religious traditions

A minimum grade of C is required for credit toward the major.

Please note: Students intending to major must register with the Department Chair.

## **Requirements for a Minor in Religious Studies**

Students minoring in Religious Studies must complete 1) RELS 110 (<http://catalog.manhattan.edu/undergraduate/arts/religiousstudies/>) – The Nature and Experience of Religion; 2) 3 credits from Elective Group A; 3) 3 credits from Elective Group B; 4) 3 credits at the 400 level; and 5) 3 credits in any additional RELS course.

Please note: Students intending to minor must register with the Department Chair.

## **Concentration in Catholic Studies**

A student who majors or minors in Religious Studies may choose to concentrate on the Catholic tradition. This concentration focuses on Catholic beliefs, religious practices, moral teachings, and attitudes to other religious traditions, both in terms of the historical development of Catholicism and as subjects of contemporary discussion and debate. An academic and critical program, the Concentration in Catholic Studies aims at providing the interested student with an understanding of the diversity and richness of the Catholic tradition. The School of Liberal Arts also offers an interdisciplinary minor in Catholic Studies.

Those majoring in Religious Studies who wish to pursue the Concentration in Catholic Studies must complete 1) RELS 110 (<http://catalog.manhattan.edu/undergraduate/arts/religiousstudies/>) – The Nature and Experience of Religion; 2) 3 credits from Elective Group B; 3) 12 credits from Elective Group A; and 4) 12 credits at the 400-level.

Those minoring in Religious Studies who wish to pursue the Concentration in Catholic Studies must complete 1) RELS 110 (<http://catalog.manhattan.edu/undergraduate/arts/religiousstudies/>) – The Nature and Experience of Religion; 2) 3 credits from Elective Group B; 3) 6 credits from Elective Group A; and 4) 3 credits at the 400-level.

## **Religious Studies Honors Thesis**

Both majors and those completing a minor with a 3.5 or greater cumulative index are eligible to develop a year-long independent research project under the supervision of a major reader and a second reader. In fall semester, the student registers for RELS 481 Religious Studies Honors Thesis. In the spring, the student will present a completed and revised honors thesis RELS 482 Honors Thesis II to the readers. Upon the successful completion of this process, the Religious Studies Department will award the student with honors recognition.



## Courses Meeting the College Religious Studies Requirements

### Freshman Year

RELS 110/RELS 152/RELS 161 The Nature and Experience of Religion

### Elective Group A: Catholic Studies

This requirement is usually met in the sophomore year. In addition to the following courses, a few courses offered by other departments also meet the Catholic Studies requirement. These include ART 260 Monasticism and the Arts and MUSC 240 Catholic Mass and its Music. Students should check with their advisors for a list of additional courses.

RELS 200	Special Topic: in Religion	3
RELS 202	U.S. Latino/A Catholicism	3
RELS 204	Religion and Social Justice	3
RELS 205	Urban America and Catholic Social Teaching	3
RELS 206	Understanding the Bible	3
RELS 207	Central Themes New Testament	3
RELS 209	Paul	3
RELS 210	Jesus	3
RELS 212	Catholic Traditions of Spain	3
RELS 213	Catholic Thought	3
RELS 214	Dante	3
RELS 216	Saints and Catholic Imagination	3
RELS 218	The Bible & Film	3
RELS 219	Self and Other	3
RELS 220	Vatican II	3
RELS 221	The Psalms & Catholic Worship	3
RELS 225	Contemporary Catholicism	3
RELS 226	Contemporary Catholic Theologians	3
RELS 227	The Gospel of John	3
RELS 231	Eastern Christianity	3
RELS 232	Catholic Moral Theology	3
RELS 233	Contemporary Christian Ethics	3
RELS 235	Reformation Theology	3
RELS 238	Theologies Of Liberation	3
RELS 243	Early Christian Thought	3
RELS 244	The Catholic Mystics	3
RELS 245	Medieval Christian Thought	3
RELS 254	Catholic Social Teaching	3

- \* Prerequisite for all 400-level courses: Open only to Religious Studies majors and minors or by permission of instructor.

## Elective Group B: Global Studies and Contemporary Issues

RELS 206	Understanding the Bible	3
RELS 218	The Bible & Film	3
RELS 231	Eastern Christianity	3
RELS 255	Introduction to Peace and Justice Studies	3
RELS 300	Special Topic	3
RELS 302	Religion and Spanish Culture	3
RELS 306	Central Themes in the Hebrew Scriptures	3
RELS 310	Religion & The Holocaust	3
RELS 312	Muslims in America	3
RELS 321	Psychology & Religion	3
RELS 333	Non-Violent Revolution	3
RELS 336	Native American Religions	3
RELS 337	The American Religious Experience	3
RELS 341	Judaism	3
RELS 342	Islam and Politics	3
RELS 351	God And Evil	3
RELS 353	African Traditional Religion	3
RELS 354	Buddhism: Its Development and Interpretation	3
RELS 355	Islam	3
RELS 357	Religions of China & East Asia	3
RELS 358	Religions of India	3
RELS 359	Afro-Caribbean Religions	3
RELS 361	Yoga: Philosophy, Praxis, and Art	3
RELS 362	Ethics in the Workplace	3
RELS 363	Religious Faith and the Arts	3
RELS 364	Comparative Religion	3
RELS 366	Religion and Contemporary Art	3
RELS 367	The Bible In American Culture	3
RELS 372	Religion and Science	3
RELS 373	Death as a Fact of Life	3
RELS 374	Women in Western Religion	3
RELS 375	Religion and the Body	3
RELS 376	Religion and the Media	3
RELS 377	Religion and Environmentalism	3
RELS 378	Religion in New York	3
RELS 379	Religion and Popular Culture	3

RELS 381	Religious Dimensions of Peace	3
RELS 390	Sexuality and the Sacred	3
RELS 399	Criminal Justice Ethics	3
RELS 470	Religious Studies Seminar	3
RELS 475	Internship	3
RELS 480	Religious Studies Tutorial *	3
RELS 481	Religious Studies Honors Thesis *	3
RELS 482	Honors Thesis II	3

\* Prerequisite for all 400-level courses: Open only to Religious Studies majors and minors or by permission of instructor.

## Courses

### **RELS 110. The Nature and Experience of Religion. 3 Credits.**

This course is an introduction to religion as a human phenomenon and its transcendent elements, including contemporary approaches to the problem of religious beliefs and faith, a study of the problems of religious language, myth, symbolism and ritual, and the relations between religion and contemporary culture.

### **RELS 152. Nature & Experience of Religion-FYS. 3 Credits.**

This course is an introduction to religion as a human phenomenon and its transcendent elements, including contemporary approaches to the problem of religious beliefs and faith, a study of the problems of religious language, myth, symbolism and ritual, and the relations between religion and contemporary culture. The course follows a learning-through-writing approach.

### **RELS 161. The Nature and Experience of Religion: Veterans' Stress Reduction Program. 3 Credits.**

Religion as a human phenomenon and its transcendent elements. Contemporary approaches to the problem of religious beliefs and faith. A study of the problems of religious language, myth, symbolism and ritual. The relations between religion and culture with special reference to contemporary questions. Offered every semester specifically for Veterans' Stress Reduction Program.

### **RELS 200. Special Topic: in Religion. 3 Credits.**

An intensive study of one topic in Catholic Studies. The subject will vary from semester to semester. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

### **RELS 202. U.S. Latino/A Catholicism. 3 Credits.**

This course explores the phenomenon of U.S. Latino/a Catholicism through an investigation of its history, figures, themes, and current controversies. It examines how Latino/a theology articulates itself as an explicitly contextual theology that accounts for the role of popular religiosity and devotion, race, class, and gender in its thought. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 204. Religion and Social Justice. 3 Credits.**

A study of the role of Catholic social movements in the economic, political, and cultural life of New York as interpreted through biblical insight and Roman Catholic social teaching. Topics include charities, the Catholic Worker, labor issues, Wall Street, inner-city churches, and the United Nations. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 205. Urban America and Catholic Social Teaching. 3 Credits.**

This is an interdisciplinary, service-learning course based upon sociological, political science, and economic analysis of urban poverty. These methods, combined with reflections on Catholic social teaching, provide the framework for student-volunteer work at various Bronx-based community organizations. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 206. Understanding the Bible. 3 Credits.**

A study of how the Bible was formed and how to read it, including the use of historical and critical methods to examine texts, authorship, literary forms, and transmission through manuscripts and translations. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 207. Central Themes New Testament. 3 Credits.**

This course is an historical study of the development of the Christian scriptures. Topics include the history of the earliest Christian communities, the unique messages of the evangelists, and some of the methods used to understand their writings. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 209. Paul. 3 Credits.**

This course is an exploration of the earliest Christian writings and of the personality and theology of Christianity's most influential preacher. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 210. Jesus. 3 Credits.**

An examination of the historical Jesus based upon recent critical scholarship of the New Testament. Topics include the life of Jesus, the role of Jesus in historical Christianity, and the implications of an historical approach for a contemporary Christology. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 212. Catholic Traditions of Spain. 3 Credits.**

An on-site experience based in and around Spain's capital region as part of the Manhattan-in-Madrid study abroad program. Through a combination of classroom meetings and directed excursions, the course explores the foundational but diverse presence of Catholicism in the history of Spain as well as in its contemporary culture. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 213. Catholic Thought. 3 Credits.**

An investigation of the Christian tradition through a survey of its major themes, including the nature and sources of Christian belief, Christology, ecclesiology, spirituality, and theological anthropology. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 214. Dante. 3 Credits.**

An introduction to the theological thought of the great medieval poet, Dante Alighieri. Careful attention will be paid to *The New Life* and *Inferno*, as well as to Dante's political thought. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 216. Saints and Catholic Imagination. 3 Credits.**

The course examines the function of holy men and women within their religious traditions and their ethical perspectives on the contemporary world. Included will be a study of the cult of Saints, hagiography, and Saints of our own time. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 217. The Christian Eucharist. 3 Credits.**

Jesus' use of the meal to symbolize the Kingdom of God; the fidelity of the early Church to the example of Jesus; the Eucharist and the Protestant Reformation; and modern ecumenical convergence. Prerequisites: RELS 110 or RELS 152 or RELS 161.

**RELS 218. The Bible & Film. 3 Credits.**

This course will consider the historical and literary aspects of selected biblical narratives, as well as their interpretations in contemporary film. It will also discuss biblical themes, expressions, terms, and types that have become part of American culture and are sources used by the writers and directors. This course focuses primarily on film as a form of the long history of biblical interpretation, not on film theory. Prerequisites: RELS 110 or RELS 152 or RELS 161.

**RELS 219. Self and Other. 3 Credits.**

This course is a study of human existence through scripture, classical church doctrines, and contemporary theology and philosophy. Many of the issues explored in this course intersect with questions of difference, including religious conflict and diversity; race, gender, and environmental degradation; and the impact of electronic technology on interpersonal relationships. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 220. Vatican II. 3 Credits.**

This course investigates the history, context, major figures, and varied themes of the Second Vatican Council. It examines the conciliar documents and the circumstances that surrounded their production in an effort to understand some of the complexity of contemporary Catholicism. The course will also consider the major conciliar documents as they relate to matters that deal with the Church itself, with the relationship of the Church to the world, and with the relationship of the Church to other religious traditions. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 221. The Psalms & Catholic Worship. 3 Credits.**

This course supplies a form-critical introduction to the Book of Psalms, followed by an investigation into the historical and contemporary use of the Psalms in the liturgies of the Catholic Church. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 225. Contemporary Catholicism. 3 Credits.**

An exploration of the spirit, development, and new insights of the Catholic Church in the post-Vatican II era. Doctrinal, moral, ecumenical, and social questions will be examined. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 226. Contemporary Catholic Theologians. 3 Credits.**

An analysis of the theological presuppositions of contemporary authors; including the methodology of research (hermeneutics) as a basis for modern thinking about Catholicism and the role of human and psychological premises underlying understanding of the mystery of Christ. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 227. The Gospel of John. 3 Credits.**

A study of one of the most sophisticated voices in the early Church and the forces that shaped that Church. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 231. Eastern Christianity. 3 Credits.**

A study of the separated and united Churches of Eastern Europe and the Middle East, including their history, expansion, preservation of Christian heritage, and doctrinal and disciplinary affinity with the Western or Roman Church. The course generally includes a field trip. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 232. Catholic Moral Theology. 3 Credits.**

This course offers a historical, methodological, and topical survey of the moral life as understood in the Roman Catholic tradition. Students will engage the thought of major historical figures, such as Augustine, Thomas Aquinas and Alphonsus Liguori, as well as contemporary moral theologians. Attention will be paid to the way various methodologies shape the understanding of contemporary moral issues. . Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 233. Contemporary Christian Ethics. 3 Credits.**

This course engages new approaches to biblical and church authority in contemporary Christian Ethics. Topics include new options in systematic ethics (models, method, moral absolutes, and exceptions), and sin and conscience in contemporary ethical thought. The theoretical material will be illustrated by concrete reference to specific moral issues. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 234. Contemporary Christian Ethics. 3 Credits.**

New approaches to biblical and church authority in contemporary Christian Ethics. New options in systematic ethics: models, method, moral absolutes, and exceptions. Sin and conscience in contemporary ethical thought. The theoretical material will be illustrated by concrete reference to specific moral issues.

**RELS 235. Reformation Theology. 3 Credits.**

An investigation of the concept of reform in Christian thought; the Reformation of the sixteenth century, including its major figures, Luther, Calvin, and Zwingli; and the role of the Catholic Reformation of the Council of Trent. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 238. Theologies Of Liberation. 3 Credits.**

An examination of the theologies of liberation in Africa, Asia, Latin America, and among Afro-Americans and women in the United States. Topics include dialogue among these groups, the responses of first-world theologians, the relation between religion and politics, and the place of activism in the life of a religious person. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 243. Early Christian Thought. 3 Credits.**

A study of the formation of doctrines, especially those concerning God, Christ, the world, history, and their mutual relationships. Attention will also be devoted to the philosophical and political influences that shaped Christianity from the first to the eighth Century. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 244. The Catholic Mystics. 3 Credits.**

A study of the mystical experience, in both its theory and practice, through the lives and writings of the great Christian mystics, past and present. Ample exposure to primary sources and field trips to mystical and contemplative centers constitute the core of this course. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 245. Medieval Christian Thought. 3 Credits.**

A study of the history of Christian thought concerning the nature of humanity and the universe from Augustine through the Scholastics to the eve of the Reformation. Medieval political, theological, liturgical, and artistic expressions of Christendom will be examined. Includes a field trip. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 254. Catholic Social Teaching. 3 Credits.**

A theological and ethical investigation of selected moral problems of our time, such as truth in government, violence, economic injustice, and racism, in addition to other moral issues. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 255. Introduction to Peace and Justice Studies. 3 Credits.**

An introduction to the nature, scope, and methodology of Peace and Justice Studies as well as an exploration of some major contemporary problems that threaten peaceful and just relations between groups, nations or individuals. Prerequisites: RELS 110 or RELS 152 or RELS 161.

**RELS 256. Catholic Mass and Its Music. 3 Credits.**

The course explores the structure of the Roman Mass, the role of music in faith formation, the major reforms in the Church's history; their cause and results, and the musical culture of the Church following the Second Vatican Council. Students will demonstrate understanding of Catholicism, including its worldview, ethics, history, text, and/or intercultural relations historically and at present. Pre-requisite RELS 110 or RELS 152 or RELS 161.

**RELS 300. Special Topic. 3 Credits.**

An intensive study of a particular religious tradition or topic from within the fields of global studies or contemporary culture. The subject will vary from semester to semester. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 302. Religion and Spanish Culture. 3 Credits.**

An on-site experience based in and around Spain's capital region as part of the Manhattan-in-Madrid study abroad program. Through a combination of classroom meetings and directed excursions, the course explores the complex but foundational role of religion in the history of Spain as well as in its contemporary culture. Particular topics as well as course structure (semester-long or two-week intensive) may vary across offerings. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 306. Central Themes in the Hebrew Scriptures. 3 Credits.**

This course explores important themes in the Hebrew Bible (known to Christians as the Old Testament) through analysis of religious, archaeological, literary and historical courses. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 310. Religion & The Holocaust. 3 Credits.**

This course explores the question of faith post-holocaust, and the moral lessons that can be learned from the Shoah. Using theological and political approaches, the course will analyze the impact of the Holocaust (1938-1945) on Judaism, Christianity, and Islam in terms of philosophy-theology, subsequent placement in Western society, and the effect that the Holocaust has had on Western and Global society. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 312. Muslims in America. 3 Credits.**

Examines the role of Muslims in American life after the 9/11 destruction of the World Trade Center. The course examines the origins of Islam in the United States, the ethnic and religious diversity of American Muslims, conflicts about gender relations and women's issues, contemporary debates about Islam's role in the public sphere, and the spirituality of American Muslims. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 314. Hinduism. 3 Credits.**

Hinduism is one of the world's oldest major religions and one of the world's newest major religions; its name barely 300 years old. So, is it old or is it new? What is Hinduism and who defines it will be the central questions that this course will investigate. Prerequisites: RELS 110 or RELS 152 or RELS 161.

**RELS 320. Black Theology. 3 Credits.**

This course is an examination of race and its intersection with theology and philosophy of religion in a contemporary expression of Christian theology known as Black Theology. Black theology emerged in America during the Civil Rights Movement as a response to traditional Christianity's inability to address the problem of racial oppression in America. Prerequisites: RELS 110 or RELS 152 or RELS 161.

**RELS 321. Psychology & Religion. 3 Credits.**

An examination of ways in which psychology has both broadened and challenged the understanding of religion; study of such topics as self, psyche, symbolism, psychotherapy, and spiritual methods. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 333. Non-Violent Revolution. 3 Credits.**

A study of the theory and practice of non-violence as found in select contemporary leaders, including Mohandas K. Gandhi, Martin Luther King, Jr., Cesar Chavez, Vinoba Bhave, Danilo Dolce, and Helder Camara. The course also examines the theological and ethical foundations of non-violent revolution. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 336. Native American Religions. 3 Credits.**

A study of the principal rites, stories, and religious symbols of the indigenous communities of North America through the study of selected tribes or nations. Various research approaches and popular media portrayal of the 'Indians' will also be discussed. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 337. The American Religious Experience. 3 Credits.**

A survey of the rich history as well as varied landscape of religion in the United States. Considerations include the notable variety of traditions new and old in addition to recurring patterns of an enduring "civil religion" at work in American culture. Pre-requisite: RELS 110 or RELS 152 or RELS 161.



**RELS 341. Judaism. 3 Credits.**

An introductory survey of post-biblical Judaism. Topics include rabbinic texts and the emergence of rabbinic Judaism, Jewish holidays and practices, contemporary Judaism, and the religious aspects of the nation of Israel. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 342. Islam and Politics. 3 Credits.**

An investigation into the relationship between religious and political thought of the peoples of Islam. Selected Quranic texts and Hadiths will be studied for their political content. The history of political Islam and the contemporary Islamic scene throughout the world will be featured elements of the course. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 349. Women and Islam. 3 Credits.**

This course explores the appearance and oppression of Muslim women that have been the focus of intense and polemical debate in the Muslim world. In Muslim societies and in Western media the image of Muslim women has been taken as a focal example of the perceived failings of the Islamic tradition. We will examine the complexity of the messages relating to gender in Islamic societies and the Qur'an. Prerequisites: RELS 110 or RELS 152 or RELS 161.

**RELS 351. God And Evil. 3 Credits.**

Who is God? Why is there evil in the world? The course will explore these fundamental religious questions by examining the relationship between differing concepts of God and evil. Course material will include classical texts and contemporary Jewish, Christian, and Pagan writings. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 353. African Traditional Religion. 3 Credits.**

This course is a study of present-day religious beliefs, ceremonies, and practices in Africa. The course engages the religious worldviews of Islam, Christianity, and traditional African religions, with special attention to issues of race and gender. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 354. Buddhism: Its Development and Interpretation. 3 Credits.**

A study of the principles of Buddhist thought together with a reading of various Theravada and Mahayana texts. The course will address problems of philosophical interpretation, historical development and cultural transformation. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 355. Islam. 3 Credits.**

An introductory survey of the origins and religious teachings of Islam, with special attention to the Islamic views of providence, revelation, worship, and moral obedience. Community, social justice, and revolutionary thought in the contemporary Islamic world will also be discussed. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 357. Religions of China & East Asia. 3 Credits.**

A survey of the religious traditions of the cultures of the Far East. Examines Confucianism, Taoism, and Far Eastern forms of Buddhism as well as the cultural background, beliefs, practices, art, and literature of these religions. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 358. Religions of India. 3 Credits.**

A survey of the religions that began in India: Hinduism, Jainism, and Buddhism. Traces the historical development of these religions from the time of the Vedas to Mahatma Gandhi. The survey will focus on the religious beliefs, practices, and literature of these different groups. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 359. Afro-Caribbean Religions. 3 Credits.**

An interdisciplinary survey of major creole traditions—including Santeria, Vodun, Rastafari, and Obeah—that developed through the unique encounter of West African, Christian, Native American, and Asian elements in the plantation societies of the Caribbean. A critical assessment of the cosmologies, rituals, and theologies of these traditions, as well as their implications for enhancing the academic study of religion, forms the focus of the course. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 361. Yoga: Philosophy, Praxis, and Art. 3 Credits.**

A cross-cultural and interdisciplinary introduction to the nature of yoga, including its philosophical underpinnings, iconographical representations and practices. Materials will be drawn from Hinduism, the Buddhisms of Tibet and Japan, and Carmelite Christianity. In addition, contemporary neuropsychological approaches will be explored. The course will be enhanced by field trips that explore the art and practices of these areas. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 362. Ethics in the Workplace. 3 Credits.**

An investigation of the ethical challenges, from the personal to the global, that arise in the context of the workplace. Texts will feature case studies and analysis of issues ranging from honesty and fidelity to consumption patterns, organizational structure, and corporate ethos. Students will be introduced to theories in both philosophical and theological ethics that will provide critical tools to help determine a coherent and defensible ethic for their working lives. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 363. Religious Faith and the Arts. 3 Credits.**

An exploration of the ways in which religious faith is expressed through the arts, including the visual, performing, and plastic arts. Some of the course will take place off-campus in the theaters, museums, concert halls, and churches of New York City. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 364. Comparative Religion. 3 Credits.**

This course will examine contemporary issues arising within religious studies that allow us to compare religions. Material will be drawn from both Western and Asian religious traditions; topics will focus on such issues as God, mysticism, evil, creation, and/or salvation. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 366. Religion and Contemporary Art. 3 Credits.**

A study of the ways in which contemporary artists explore sacred themes, such as the construction of utopia, the development of community, and the search for transcendence. The course follows various artists and movements of the 20th and 21st centuries, and the ways in which they reflect upon modern religious life. The course shows how the sacred has remained a relevant concern for artists from modern to postmodern art. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 367. The Bible In American Culture. 3 Credits.**

This course considers the place of the Bible in American public life. The course illustrates how the Bible has generated some enduring American values and how it has helped Americans form a sense of themselves through its role in social movements, politics, and the arts. Emphasis will be on the place of religion in public life, including different understandings of the principle of church and state. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 372. Religion and Science. 3 Credits.**

A study of historical and contemporary interactions between religion and science, with particular reference to their political implications and ethical ramifications. Themes include biotechnology, environmentalism, the teaching of evolution, and digital technologies. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 373. Death as a Fact of Life. 3 Credits.**

An examination of the religious, legal, medical, and psychological questions concerning death. Topics include the hope for life after death and the moral aspects of care for the dying and bereaved, cessation of treatment, euthanasia, and suicide.. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 374. Women in Western Religion. 3 Credits.**

An exploration of the field of women's studies in religion as it intersects with new understandings of God, text, and tradition emerging within Judaism, Christianity, and Islam. The course will look at the roles of women within these three traditions and consider the question of how people bring about religious change. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 375. Religion and the Body. 3 Credits.**

This course considers the role of the body in the religious imagination. Themes vary from semester to semester, but can include 1) everyday practices of eating, exercising, bathing, dressing, piercing, and tattooing, 2) traditional religious approaches to the body (especially, but not limited to, Christianity), and/or 3) contemporary transhumanist thought. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 376. Religion and the Media. 3 Credits.**

A critical investigation of the significant roles of religion and media in modern life. Along with a variety of theoretical perspectives, the course examines a series of case studies that range across religious traditions and media formats. Special attention is given to analysis of how religious ideas and practices appear in the news media and in popular entertainment, as well as to reflection on the religious parameters of media uses like television viewing and online gaming. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 377. Religion and Environmentalism. 3 Credits.**

Introduces the history, ideas and practices of modern environmentalism by examining references to and invocations of religion in debates about the environment from the late 18th century to the present. The course focuses especially on the emergence of environmentalism as a broad-based philosophical, political and cultural movement and thus gives special attention to careful analysis of the place of religion in foundational environmentalist works of the second half of the 20th century. Pre-requisites: RELS 110 or RELS 152 or RELS 161.

**RELS 378. Religion in New York. 3 Credits.**

An examination of the central place of religion in the history and culture of New York as well as of the city's and state's foundational roles in broader movements of religious and theological innovation. Particular topics as well as course structure may vary across offerings. Prerequisites: RELS 110 or RELS 152 or RELS 161.

**RELS 379. Religion and Popular Culture. 3 Credits.**

A general or topic-specific examination of the influences of popular culture or religion as well as of the religious dimensions of contemporary literary, musical, visual, and/or other prevalent social practices. Prerequisites: RELS 110 or RELS 152 or RELS 161.

**RELS 381. Religious Dimensions of Peace. 3 Credits.**

A theological and ethical inquiry into the major Jewish and Christian responses to war: pacifism, just war, and crusade. Various religious anthropologies are considered as possible ethical bases for peace in today's world, and the course engages the contemporary relevance of Reinhold Niebuhr, Mohandas K. Gandhi, Martin Luther King, Jr. and Cesar Chavez. Pre-requisite: RELS 110 or RELS 152 or RELS 161.

**RELS 390. Sexuality and the Sacred. 3 Credits.**

Explores some ways in which different religious traditions have perceived the relationship between sexuality and religion. Examines the religious roots of our own cultural attitudes toward sexuality and sex roles and looks at some contemporary attempts to rethink the relationships between sexuality and spirituality, and between women and men. Prerequisites: RELS 110 or RELS 152 or RELS 161.

**RELS 399. Criminal Justice Ethics. 3 Credits.**

An investigation of the theological and ethical issues related to crime and punishment. Students will discuss questions of human nature, the purpose and meaning of confinement, the ethics of law and judgement, the role of mercy and forgiveness, and alternatives to prosecution and incarceration. In many cases, the course will be conducted at the jail on Rikers Island. Pre-requisites: RELS 110 or RELS 152 or RELS 161.

**RELS 400. Special Topic. 3 Credits.****RELS 426. Contemporary Catholic Theologians. 3 Credits.**

An analysis of the theological presuppositions of contemporary authors; the methodology of research (hermeneutics) as a basis for modern thinking about Catholicism; the role of human and psychological premises underlying understanding of the mystery of Christ.

**RELS 470. Religious Studies Seminar. 3 Credits.**

This course is an intensive study of an author, period, problem, or concern in a given religious tradition, or the comparative study of some aspect of several traditions. Topics vary from semester to semester. This seminar is open to Religious Studies majors and minors as well as to other interested students who have completed the nine-credit requirement in Religious Studies. Pre-requisites: RELS 110 or RELS 152 or RELS 161, completion of nine credits in RELS, and permission from the Chair of Religious Studies.

**RELS 475. Internship. 3 Credits.**

Students participate in an off-campus training experience closely related to their area of study. Frequent meetings with the internship advisor and a paper are required. Internships are arranged through the Center for Career Development and must be approved in advance by the chair and the Dean of the School of Arts. Open to majors only.

**RELS 480. Religious Studies Tutorial. 3 Credits.**

Individual study under the supervision of a member of the department with the permission of the Chair. Open only to juniors and seniors majoring in Religious Studies who meet the requirements set by the Chair.

**RELS 481. Religious Studies Honors Thesis. 3 Credits.**

The first semester of a two-semester honors thesis in Religious Studies. The honors thesis is written under a faculty advisor, who assists the student in developing research goals and selecting appropriate texts and research data. Available to Religious Studies majors with a 3.5 GPA. Permission of the department chair required.

**RELS 482. Honors Thesis II. 3 Credits.**

The second semester of a two-semester honors thesis in Religious Studies. The student continues the research project begun in RELS 481 and will write the honors thesis. Available to Religious Studies majors with a 3.5 GPA. Permission of the department chair required.

# Sociology

Dr. Cory Blad

Chair of the Department

Sociology, the scientific study of human social behavior, examines the processes and patterns of social interaction; forms of social organization; and the influences of social groups, institutions, and social structure upon human behavior.

The goals of the department are to develop the sociological imagination, including a familiarity with sociological concepts, theories, methods, and research findings; to foster knowledge of, and respect for, diverse social systems and cultures; and to promote global awareness, community service, and social justice.

The Department prepares students for careers in social service, law, administration in government or business, social research and data analysis, criminal justice, urban planning, immigration services, and related fields. Internships are available for students to explore career interests and apply knowledge in field experiences.

## Major

### Requirements for a Major in Sociology

All majors must complete 33 credits, including the following:

Sociology Core:

SOC 220	Social Problems (taken first or second year, incoming semester for transfer students) <small>Required and prerequisite</small>	3
Structural Inequalities Distribution (One of the following courses taken sophomore or junior year)		3
SOC 290	Codes of Gender	
SOC 295	Capitalism	
SOC 302	Race And Resistance	
SOC 304	Social Inequalities	
SOC 307	Research Methods (taken junior year)	3
SOC 324	Sociological Theories (taken junior year)	3
Advanced Methods Distribution (One of the following courses taken Fall senior year)		3
SOC 350	Advanced Topics in Geographic Information Systems (GIS)	
SOC 352	Advanced Qualitative Methods	
SOC 354	Introduction to Social Network Analysis	
SOC 416	Seminar in Sociology (taken senior year)	3
Fifteen additional credits from Sociology		15
Total Credits		33

The department also recommends that students take a course in statistics, preferably PSYC 214 Statistics and Research Methods I.

A minimum grade of C is required for all courses in the major.

General study in the field of sociology helps to prepare students for graduate school and/or a wide array of future careers in research, teaching, human resource management, civil service, and others. Sociology majors with more specific interests in the field may focus their study by electing a concentration. An additional option consists of completing a minor in cultural anthropology.

Concentrations

Sociology majors interested in social services; immigration and global sociology; or crime, law, and social justice may choose one of these as their area of concentration but only after consultation with a departmental advisor. If a student elects a concentration, they must meet the following course requirements:

Criminology and Criminal Justice

Recommended for students with career interests in criminal justice, law, community activism, and human rights advocacy. Majors must complete the following:

Sociology Core	18
Four courses from Category A or Category B based on student area of interest	12
Category A	
SOC 273	Mass Incarceration and Collateral Consequences (SOC 273 Corrections and Mass Incarceration)
SOC 275	Police & Society
SOC 308	Juvenile Justice
SOC 361	Criminal Justice Administration
SOC 362	Modern American Gangs
SOC 366	White Collar Crime
SOC 369	Current Issues in Criminal Justice
Category B	
SOC 270	Criminology
SOC 294	Gender, Crime & Justice
SOC 302	Race And Resistance
SOC 310	Sociology of Deviance
SOC 313	Family Law
SOC 317	Anthropology of Drugs
SOC 364	Law and Society
Elective Courses	3
Total Credits	33

Students are encouraged to take additional courses outside their area of concentration.

Social Services

Recommended for students interested in social-service related careers. Majors must complete the following:

Sociology Core	18
SOC 210            Introduction to Social Services	3
SOC 312            Social Service Practice	3
Three of the following are required:	9
SOC 220            Social Problems	
SOC 290            Codes of Gender	
SOC 302            Race And Resistance	
SOC 305            Urban Sociology	
SOC 306            The Family	
SOC 310            Sociology of Deviance	
SOC 317            Anthropology of Drugs	
SOC 319            Practicing Empowerment	
SOC 335            Culture, Health, and Illness	
<b>Total Credits</b>	<b>33</b>

The Department strongly recommends that students complete an internship. Students are encouraged to take additional courses outside their area of concentration.

## Geography

Recommended for students seeking a greater understanding of how humans interact with built and natural environments as well as those interested in developing mapping, geographic information systems, and other spatial analytical skills. Majors must complete the following:

Sociology Core	18
Required Course:	3
SOC 296            Introduction to Human Geography	
Four of the following Geographic Theory Elective Courses:	12
SOC 209            Identities of New York City	
SOC 212            Migration, Globalization, and Culture	
SOC 262            Contemporary Latin American Development	
SOC 295            Capitalism	
SOC 327            Power and Conflict	
SOC 329            Political Economy of Global Migration	
SOC 334            Sustainable Development	
SOC 336            Anatomy of a US City	
SOC 353            Political Ecology	
<b>Total Credits</b>	<b>33</b>

Students are encouraged to take additional courses outside their area of concentration.



# Minor

## Sociology

Minors in Sociology must take 15 credits chosen in consultation with a departmental advisor. Students are required to take Social Problems (SOC 220); 1 course dealing with social differentiation: Codes of Gender (SOC 290), Capitalism (SOC 295), Race and Resistance (SOC 302), or Social Inequalities (SOC 304); and 3 additional Sociology courses. SOC 150 Roots: Sociology, SOC 375 Internship, or SOC 416 Seminar in Sociology do not fulfill minor requirements.

A minimum grade of C is required for all courses in the minor.

## Cultural Anthropology

Recommended for students who wish to supplement any major with the comparative and social scientific insights offered by Cultural Anthropology. Minors must take 15 credits, including the following:

SOC 202	Introduction to Cultural Anthropology	3
Four of the following courses:		12
SOC 204	Urban Anthropology	
SOC 209	Identities of New York City	
SOC 217	Visual Anthropology	
SOC 317	Anthropology of Drugs	
SOC 328	Societies and Cultures of Latin America	
SOC 331	Workers and the Workplace	
SOC 335	Culture, Health, and Illness	
SOC 466	Research in Anthropology	
Total Credits		15

A minimum grade of C is required for all courses in the minor.

## Geography

Recommended for students interested in GIS and other spatial analysis skills, cartography/mapping, data mining, and spatial data visualization. Minors must take 15 credits of the following:

Two Required Courses:		6
SOC 250	Introduction to GIS	
Or		
SOC 225	Telling Stories with Maps	
And		
SOC 350	Advanced Topics in Geographic Information Systems (GIS)	
Three (or more) of the following Geographic Theory Electives Courses:		9
SOC 209	Identities of New York City	
SOC 212	Migration, Globalization, and Culture	

SOC 262	Contemporary Latin American Development
SOC 295	Capitalism
SOC 296	Introduction to Human Geography
SOC 327	Power and Conflict
SOC 329	Political Economy of Global Migration
SOC 334	Sustainable Development
SOC 336	Anatomy of a US City
SOC 353	Political Ecology

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Total Credits

15

A minimum grade of C is required for all courses in the minor.

## Courses

### **SOC 150. Roots: Sociology. 3 Credits.**

An explanation and critical examination of selected concepts in the social sciences. Students examine the logic and methods of social science research and engage in analysis of contemporary social issues from the perspectives of the disciplines of sociology and anthropology. (Not open to students who completed SOC 201.)

### **SOC 153. Roots: Sociology - FYS. 3 Credits.**

An explanation and critical examination of selected concepts in the social sciences. Students examine the logic and methods of social science research and engage in analysis of contemporary social issues from the perspectives of the disciplines of sociology and anthropology. (Not open to students who completed SOC 201.)

### **SOC 201. Introduction to Sociology. 3 Credits.**

An introduction to the nature and scope of the science of sociology. Emphasis on societies, social structures and institutions, social groups, and on the various social processes associated with social organization, socialization, and social change. (Not open to students who have completed SOC 150.)

### **SOC 202. Introduction to Cultural Anthropology. 3 Credits.**

An introduction to the basic concepts of cultural anthropology. Such concepts are related to subsistence, economy, ecology, social organization and ideology. Emphasis will be given to problems in contemporary/complex societies as well as primitive/simple societies. A comparative and evolutionary perspective is used throughout the case study of Western and non-Western societies.

### **SOC 204. Urban Anthropology. 3 Credits.**

Urban anthropology is concerned with the origin, development and evolution of cities as well as with the description, comparison and analysis of urban life and cultures.

### **SOC 205. Urban Environments. 3 Credits.**

An introduction to the complexities of urban life and space emphasizing the interaction of socio-cultural, political, economic, natural, and built environments. The course will examine the factors that influence urbanization, the distinct patterns of social interaction that typify urban life, motivations for various patterns/strategies of urban development, and the effect of globalization on urban expansion and decline. These points of emphasis are founded on the understanding of cities as unique environments with distinct challenges to social organization, economic growth and inequality, and sustainability.

**SOC 208. Anthropology of Food. 3 Credits.**

This course considers food from an anthropological perspective. Attention is given to the relationship between food as a cultural construct and ecology, ethnicity and race, social class, symbolic significance, political-economic processes, colonization and globalization, competitive dietary patterns, analysis of particular commodities, and power.

**SOC 209. Identities of New York City. 3 Credits.**

American identity is tied to New York City. This course explores identity formation, assimilation, and adaptation through time and across the NYC landscape. We unpack constructions of 'normal' and how intersections of class, gender, sexual orientation, ethnicity, religion, language, and ableism can influence personal and group experiences. Students will leave the course understanding the geography of NYC, how populations have changed across the landscape over time, and how the built environment and people co-produce identities in space.

**SOC 210. Introduction to Social Services. 3 Credits.**

The foundation of social work as a profession, its historical and philosophical development, its social purpose, value assumptions, and theoretical base. A review of the various types of social service practice. Case studies and analyses of programs, policies and issues.

**SOC 211. Mass Media and Popular Culture. 3 Credits.**

A social history of mass media in the American context and an exploration of the key theoretical perspectives that explain mass communications and popular culture. The impact of media such as newspapers, books, magazines, television, film, radio broadcasting and the countless means of mass communication transmitted through the internet is examined from a sociological perspective.

**SOC 212. Migration, Globalization, and Culture. 3 Credits.**

An introductory examination of how immigration/emigration is shaped by global political-economic structures. The goal is to understand the connections between global structures and local cultural responses. Attention will be devoted to a wide variety of social reactions ranging from inclusive (multiculturalism) to exclusive (ethnic nationalism/nativism) responses.

**SOC 217. Visual Anthropology. 3 Credits.**

An introduction to the history of ethnography, the politics of image representation of the other and the sub-discipline of visual anthropology. A variety of anthropological concepts are explored by using ethnographic pictures.

**SOC 220. Social Problems. 3 Credits.**

At its core, sociology is the study of social problems. This course develops a critical analysis of the causes and consequences of social problems using contemporary sociological approaches. The specific problems treated each semester can vary but typically include issues such as poverty, environmental challenges, state and corporate misconduct, racism, immigration policies, sexism, human trafficking, labor problems, national security, terrorism and others.

**SOC 225. Telling Stories with Maps. 3 Credits.**

This course introduces the concepts and components of geospatial thinking through a geographic information system (GIS), exploring how to visualize a story using maps. We work in Tableau, Google Earth, and ESRI's ArcGIS Online, ArcGIS Pro, and ArcMap software packages. Course topics include story design, spatial data acquisition, projection systems, spatial analysis, and cartographic design.

**SOC 250. Introduction to GIS. 3 Credits.**

An introduction to geographic information systems including mapping and social spatial analysis. Course topics include spatial data acquisition, projection systems, geodatabase design, spatial query and display, spatial analysis and modelling, and cartographic design.

**SOC 262. Contemporary Latin American Development. 3 Credits.**

Focuses on development in modern Latin America and its relationship to migration in and out of the region. The main paradigms in the sociology of development are used as a basis for specific case studies, illustrating the interrelated dynamics of poverty, violence, trafficking, and human displacement. Particular attention is given to popular movements and alternative models of development in the region.

**SOC 270. Criminology. 3 Credits.**

A survey of varieties of criminal activity, data on crime and sociological explanations of crime and criminality in relation to social structural, institutional and cultural factors. Traditional and contemporary policies for controlling crime are explored in this course and a critical analysis of the relationship between crime, social inequality and social justice is developed.

**SOC 273. Mass Incarceration and Collateral Consequences. 3 Credits.**

A historical and contemporary investigation of offender management and treatment. Critical theories and alternative methods of corrections are examined and the effects of institutionalization are discussed.

**SOC 275. Police & Society. 3 Credits.**

A socio-historical and comparative analysis of the structure and organization of contemporary policing. Students will develop a critical analysis of how law enforcement agencies interact with society.

**SOC 290. Codes of Gender. 3 Credits.**

As approach to the construction, reproduction, persistence, and resistance to gender inequality across multiple domains, using comparative and transnational approaches.

**SOC 294. Gender, Crime & Justice. 3 Credits.**

The course will explore: the evolution of gender in the context of criminology, female offending and related criminological theories, the frequency and nature of female offending, how women and girls are processed through the criminal justice system, how women and girls are punished, the victimization of women and girls by men, and the role of female employees in the criminal justice system.

**SOC 295. Capitalism. 3 Credits.**

An examination of capitalism as a social system in the modern world. The course examines the history of capitalism, political economic theories of how it functions, and examines the ways in which capitalism influences human activity on a global scale.

**SOC 296. Introduction to Human Geography. 3 Credits.**

This course introduces students to the field of human geography. We journey through the discipline's history and origins, modern geography and the scientific revolution, to postmodernism and GIS science. The course will cover geographic theory, including the concept of place and its impact on identity formation, the links between urban and rural spaces, regional interdependencies, among other topics.

**SOC 302. Race And Resistance. 3 Credits.**

This course involves discussing, reading, and examining cultural artifacts, social movements, and theorizations around the categories of race and ethnicity. It aims for re-thinking these categories through their grounding in particular localities, practices, truths and histories.

**SOC 303. Urban Planning. 3 Credits.**

Introduction to the principles and techniques of urban planning. Practical application of knowledge from many disciplines in forming physical design for urban spaces. Consideration of demographic, political, economic, and legal factors in the planning process.

**SOC 304. Social Inequalities. 3 Credits.**

Analysis of the class structure of the United States. Economic and non-economic characteristics of different classes. How class status affects one's life (physical and mental health, food and shelter, education, crime, and political power). The factors influencing what class one ends up in adulthood. The impact of welfare reform. Variations in class inequality across societies and across different time periods in the U.S. Varying explanations of and solutions to class inequality.

**SOC 305. Urban Sociology. 3 Credits.**

An examination of urbanization and the structure of modern cities. Selected issues such as urban decline, gentrification, ethnic and racial change, challenges facing city neighborhoods, business and urban cultural expression will be considered through field visits, readings and reports.

**SOC 306. The Family. 3 Credits.**

The nature and structure of the family as a group and as a social institution. Cross-cultural, historical and contemporary variations in family structure and interaction. Patterns in mate selection, marriage, parenthood and divorce, and their correlation with such variables as income, ethnicity, religion, and education.

**SOC 307. Research Methods. 3 Credits.**

The logic and skills of social scientific research. Research design, conceptualization and measurement, sampling, and data analysis. Student experience in data collection and analysis.

**SOC 308. Juvenile Justice. 3 Credits.**

Sociological perspectives on the nature, causes, and prevention of delinquency and the application of criminal justice to minors.

**SOC 310. Sociology of Deviance. 3 Credits.**

Analyzes the relationship between social power and the dynamic process of labeling certain acts and groups as deviant. A survey of theoretical explanations of deviance is offered as the course explores how individuals and groups respond to being labelled deviant. Specific attention is given to social policies intended to control deviance and the social consequences of those policies.

**SOC 311. Postmodern Societies. 3 Credits.**

A critical examination of theories and practices of social organization in the contemporary world. This course examines 'how times have changed' and led to contemporary cultural and political conflicts over identity, authority, social norms. Theories of modernity and postmodernity will inform more current theoretical understandings of the individual's role in constructing and organizing social relationships.

**SOC 312. Social Service Practice. 3 Credits.**

An introduction to basic social service methods with an emphasis on the special type of listening, utilized by social workers. The focus will be on engaging and helping individuals, couples and families. Students will learn about the helping process, starting with the initial phase and including assessment and treatment planning.

**SOC 313. Family Law. 3 Credits.**

This course will examine the law governing the definition of family and the rights and duties of family members to each other. In particular, the conversation will focus upon marriage and cover such topics as restrictions on who may marry, and issues incident to dissolution of marriage (property division, spousal and child support, and child custody).

**SOC 315. Special Topics: in Sociology. 3 Credits.**

New course offerings in any area of sociology. Topics will be listed in the pre-registration booklets. Course outlines will be posted in the sociology department before the preregistration periods.

**SOC 316. Special Topics: in Sociology. 3 Credits.**

New course offerings in any area of sociology. Topics will be listed in the pre-registration booklets. Course outlines will be posted in the sociology department before the preregistration periods.

**SOC 317. Anthropology of Drugs. 3 Credits.**

People at different levels of societal development (e.g. hunting, gathering, agricultural, industrial and post industrial societies) have integrated certain 'drugs' into their cultures. This course explores the use of drugs cross-culturally, focusing on their political, economic, and cultural ramifications. Qualitative and quantitative data are used in the course.

**SOC 318. Community Organizing for Social Change. 3 Credits.**

Community organizing is a strategy that has empowered individuals and communities to make social change. It has been a major factor in shaping the Bronx, the college's home, as it is today. The class will provide a historical perspective on community organizing and assist in developing skills critical to organizing, such as discussing the role of the organizer, identifying and researching issues, developing leaders and developing an organizing campaign. The class would include opportunities for real-world experience with a local community organization. 3 cr. (Students meet two hours in class weekly and have additional meeting time obligations in the community.) Dept. Chair consent required.

**SOC 319. Practicing Empowerment. 3 Credits.**

An analysis of social services designed for vulnerable, under-represented and displaced people, such as migrant populations, illegal immigrants, political refugees, and others. A critical and historical evaluation of efforts to engage and advocate for these populations is developed as well as tactics to empower them in today's world.

**SOC 324. Sociological Theories. 3 Credits.**

A survey of major sociological theories, e.g., functionalism, symbolic interactionism, conflict theory, phenomenology and ethnomethodology, Frankfurt School critical theory, structuralism, postmodernism and others. Special emphasis is given to tracing contemporary approaches back to classical sociologists such as Comte, Durkheim, Marx, Weber, and Mead.

**SOC 327. Power and Conflict. 3 Credits.**

An examination of the role of power in regulating and subordinating groups within human societies. The concept of power is a multifaceted process that includes forms of economic, political, cultural and discursive control. This requires a look at various theories of power and its role in ordering societies as well as different methods of acquiring, maintaining and losing power. Particular attention will be paid to the motivations for power acquisition and the dynamics of resistance to power structures in both theoretical and applied contexts.

**SOC 328. Societies and Cultures of Latin America. 3 Credits.**

An introduction to Mesoamerica (Mexico, Central America) South America, and the Caribbean as socio-cultural areas from an anthropological perspective. Native and contemporary cultures, cultural similarities and differences are examined with attention given to the process of sociocultural change, external forces that shape the region, and key issues/themes that consistently surface in Latin American anthropology.

**SOC 329. Political Economy of Global Migration. 3 Credits.**

An advanced exploration of the political economy of global migration in both historical and contemporary contexts. The course is designed to facilitate an understanding of how political economic conditions motivate immigration and emigration. Issues of particular interest include understanding demand for immigration in countries of high economic growth, understanding characteristics that typify emigration societies and gaining a more comprehensive understanding of how changes in global economic conditions affect changes in migration patterns. Also of interest will be political (policy) methods of managing the integration of migrant populations in receiving countries and the effects of population loss in sending countries.

**SOC 331. Workers and the Workplace. 3 Credits.**

Work is examined through a historical, comparative lens by using sociological analysis of occupations and global workplace dynamics in industrial and non-industrial settings.

**SOC 332. Labor Studies Colloquium. 3 Credits.**

An interdisciplinary introduction to the nature, scope, and methodology of Labor Studies. Students will examine the problems and opportunities that a globalized economy poses for worker rights. Guest lectures by Labor Studies faculty members from the humanities and social sciences, business, and health services on specific topics and/or case studies. Site visits to select NYC historical landmarks such as Union Square, The Catholic Worker, and the site of the Triangle Fire.

**SOC 333. US Labor Patterns and Movements. 3 Credits.**

This course analyzes the patterns of the US labor force and labor movements in the industrial age. Structural factors such as race, class, gender, geography and technology are considered along with the business and political contexts. The question of individual agency on the part of labor leaders is also addressed.

**SOC 334. Sustainable Development. 3 Credits.**

An examination of the relationship between economic development and environmental crises. The course focuses on theories of development and subsequent theories of sustainable development, as well as examining cases studies of development, environmental degradation, and sustainable development.

**SOC 335. Culture, Health, and Illness. 3 Credits.**

Application of anthropological and sociological methods and theory in the comparative analysis of illness, medical practices, and health systems. Attention will be given to the interaction of humans with their immediate environment and how humans adapt.

**SOC 336. Anatomy of a US City. 3 Credits.**

The United States evolved from settlements of hunter-gatherers and agriculturalists, to an industrial revolution powerhouse, to a modern globalization giant. As cities physically change over time, they leave traces of their ecological and sociological histories. This course journeys through time and explores major moments in US history as they relate to the political economy and environment of major cities. Students will gain in-depth knowledge about key forces, such as spatial structure of settlements, migration and immigration, open space and park development, central city change over time, and gentrification.

**SOC 338. Schools and Society. 3 Credits.**

Examination of how schools in U.S. and abroad are organized and operate, why there are class, race, and sex differences in how much education people get, why better educated people get the best jobs, and what must be done to reform our schools.

**SOC 350. Advanced Topics in Geographic Information Systems (GIS). 3 Credits.**

An advanced examination of mapping and geospatial analysis. The course builds on and moves beyond the topics in Introduction to GIS and includes advanced mapping techniques, spatial analytical methods, and basic coding using ArcGIS and other GIS programs.

**SOC 352. Advanced Qualitative Methods. 3 Credits.**

This course is designed to train undergraduate students in advanced qualitative research methods in the social sciences. Through this hands-on approach, the course is designed to prepare students to undertake research using ethnographic and intensive interview methods, and deepen their appreciation of the methodological dimensions of published qualitative work.

**SOC 353. Political Ecology. 3 Credits.**

This course is to introduce students of global change to the analytical framework of political ecology framework, including how axes of power, such as gender, class, and race, further complicate access to and distribution of natural resources. This geographic look at the politics of resource allocation and distribution begins in the post-colonial era to gendered dimensions of climate change and developing country socio-ecological systems.



**SOC 354. Introduction to Social Network Analysis. 3 Credits.**

An examination of social network analysis including theories and analytical methods of network formation and maintenance. Social media analyses, data mining, and graphical analysis of social network data are among the topics covered.

**SOC 361. Criminal Justice Administration. 3 Credits.**

An analysis of the various agencies in the administration of justice, the nature of law enforcement, the prisons, court system and rehabilitation agencies.

**SOC 362. Modern American Gangs. 3 Credits.**

Analysis of the origin, organization, control, and consequences of organized crime in the United States. Emphasis on conflicting theories and current research.

**SOC 364. Law and Society. 3 Credits.**

An exploration of the development of legal systems in different societies. The legal order in the United States will be discussed within the context of social and political influences on law-making and law enforcement.

**SOC 366. White Collar Crime. 3 Credits.**

An analysis of white collar crimes in their diverse forms such as professional misconduct, deliberate industrial pollution, corruption and governmental repression of political opponents. Consideration is given to recent trends and ways of exerting control over these crimes.

**SOC 367. Crime & Justice in Urban Settings. 3 Credits.**

A course examining the particular conditions and issues associated with crime and criminal activities in major cities. The focus of the course is to understand how urban conditions and environments influence crime and criminal activities.

**SOC 369. Current Issues in Criminal Justice. 3 Credits.**

Current and controversial issues in criminal justice will be explored and analyzed in this course. The topics will be debated in a classroom setting which will combine traditional lectures with student presentations and full class discussions.

**SOC 375. Internship. 3 Credits.**

Students participate in an off-campus training experience closely related to their area of study. Frequent meetings with the internship advisor and a paper are required. Internships are arranged through the Center for Career Development and must be approved in advance by the chair and the Dean of the School of Arts. Elective credit only.

**SOC 380. Sport and American Society. 3 Credits.**

An interdisciplinary course on the history of American sport from the colonial era to the present. Special emphasis will be given to the economic, sociological, political, and psychological aspects of twentieth century American sport.

**SOC 416. Seminar in Sociology. 3 Credits.**

This seminar is the 'capstone' course for sociology majors and is designed to support an original research project individually completed by each participant. Meeting on a weekly basis, students discuss their findings and engage in a series of peer-review activities. Prerequisites: SOC 304, SOC 307 and SOC 324.

**SOC 460. Independent Study. 3 Credits.**

A course of study designed for students with particular research interests not covered in the department's curriculum. Topics and methods of research are carefully worked out by the student in consultation with the supervising professor. This course is ordinarily open only to those students who have completed SOC 307 and have a minimum GPA of 3.0. Before registration, topics must be approved by the supervising professor and the department chair.

**SOC 461. Independent Study. 3 Credits.****SOC 465. Research in Sociology. 3 Credits.**

Participation in current research projects in the department. Permission of Chair and supervising professor required before registration. Prerequisite: SOC 307.

**SOC 466. Research in Anthropology. 3 Credits.**

Participation in current research projects in the dept. Permission of Chair and supervising professor required before registration. Prerequisite: SOC 307.

**SOC 475. Internship. 3 Credits.**

Students participate in an off-campus training experience closely related to their area of study. Frequent meetings with the internship advisor and a paper are required. Internships are arranged through the Center for Career Development and must be approved in advance by the chair and the Dean of the School of Arts. Credit may apply to major.

# Urban Studies

Dr. Adam Arenson

Director of the Program

Cities are places where human life is at its most intense - everything seems to be faster, louder, and more frenetic. They are where economies grow, where political movements emerge, and where cultural treasures are preserved. Cities are also where inequalities are most apparent. It seems safe to say that in cities you find the best and the worse that human societies have to offer. And, in the 21<sup>st</sup> century, cities around the world will only continue to grow.

Whether you are interested in business, history, engineering, sociology, political science, environmental sustainability, art, or education, it all happens in a city. Come learn how cities work. The Urban Studies Program at Manhattan College offers the perfect major, double major, or minor for your time in New York City!

## Major

### Requirements for a Major in Urban Studies

Ten courses totaling at least 30 credits are required. These courses must come from the list approved for Urban Studies credit and they must be taken from at least 3 departments.

All majors are required to take:

1) the introductory course in urban studies, URBN 202 Introduction to Urban Studies;

and

2a) either the senior Research Seminar, URBN 401 Seminar - Urban Studies,

or

2b) senior thesis, URBN 406 Urban Honors Thesis I and URBN 407 Urban Honors Thesis II

3) a supervised field experience/internship in an urban context. This requirement may be satisfied by URBN 475 ([http://catalog.manhattan.edu/search/?P=URBN %20475](http://catalog.manhattan.edu/search/?P=URBN%20475)) Internship or URBN 205 ([http://catalog.manhattan.edu/search/?P=URBN %20205](http://catalog.manhattan.edu/search/?P=URBN%20205)) Urban America and Catholic Social Teaching. A field-oriented independent research study, URBN 402 ([http://catalog.manhattan.edu/search/?P=URBN %20402](http://catalog.manhattan.edu/search/?P=URBN%20402)) Independent Study, may substitute for the internship/field experience only by permission of the program director.

No more than 4 courses in any department can be counted towards the Urban Studies major.

A minimum grade of C is required in all courses to fulfill the requirements for the major.

## Minor

The minor in Urban Studies is available to students in all schools of the College. 15 credits or 5 courses are required, including the introductory course in Urban Studies: URBN 202 Introduction to Urban Studies . No more than two courses from any one discipline can be

counted towards the minor. A minimum grade of C is required to fulfill the requirements for the minor.

## Courses for Urban Studies Majors and Minors

Courses are approved for Urban Studies credit on an ongoing basis. List below is not comprehensive.

AHS 206	Introduction to Public Health	3
ART 358	The New York Skyscraper	3
ART 360	New York City Architecture, Urbanism and Design	3
ART 370	Current Trends	3
CIVL 201	Introduction to Civil Engineering	3
CIVL 202	Transportation	3
CIVL 403	Civil Engineering Economy and Law	3
COMM 400	Political Communication	3
ECON 332	Introduction to Environmental Economics	3
ECON 405	Labor Economics	3
ENGL 212	Latino/Latina Literature	3
ENGL 285	Literary New York	3
ENGL 338	Studies in Twentieth-and Twenty-first-Century American Literature	3
ENGL 348	Postcolonial Literature	3
ENGL 400	The Theater and the City	3
ENSC 101	Intro to Environmental Science	3
ENVL 406	Water and Wastewater Treatment Processes	3
HIST 231	Introduction to African American History	3
HIST 358	The Industrial Revolution	3
HIST 387	New York City and the American Urban Experience	3
HIST 390	Terror and Terrorism	3
LABR 301	Field Work	3
MGMT 430	Business, Government, and Society	3
MUSC 300	History of Rock and Roll	3
MUSC 310	History of the Broadway Musical	3
MUSC 325	Modern Music & The Avant-Garde	3
MUSC 330	History of Jazz	3
POSC 210	Research Methods in Political Science	3
POSC 212	Wall Street	3
POSC 221	Urban Govt & Politics	3
POSC 222	Power in the City	3
POSC 322	Public Administration	3
POSC 223	Environmental Politics	3
POSC 254	Global Cities	3

POSC 315	State and Local Government in the United States	3
POSC 318	Community Organizing for Social Change	3
PSYC 321	Social Psychology	3
RELS 202	U.S. Latino/A Catholicism	3
RELS 204	Religion and Social Justice	3
RELS 312	Muslims in America	3
RELS 363	Religious Faith and the Arts	3
RELS 399	Criminal Justice Ethics	3
SOC 204	Urban Anthropology	3
SOC 209	Identities of New York City	3
SOC 210	Introduction to Social Services	3
SOC 220	Social Problems	3
SOC 225	Telling Stories with Maps	3
SOC 250	Introduction to GIS	3
SOC 262	Contemporary Latin American Development	3
SOC 270	Criminology	3
SOC 273	Mass Incarceration and Collateral Consequences	3
SOC 275	Police & Society	3
SOC 294	Gender, Crime & Justice	3
SOC 295	Capitalism	3
SOC 296	Introduction to Human Geography	3
SOC 303	Urban Planning	3
SOC 302	Race And Resistance	3
SOC 304	Social Inequalities	3
SOC 305	Urban Sociology	3
SOC 307	Research Methods	3
SOC 308	Juvenile Justice	3
SOC 310	Sociology of Deviance	3
SOC 312	Social Service Practice	3
SOC 318	Community Organizing for Social Change	3
SOC 324	Sociological Theories	3
SOC 327	Power and Conflict	3
SOC 331	Workers and the Workplace	3
SOC 332	Labor Studies Colloquium	3
SOC 333	US Labor Patterns and Movements	3
SOC 334	Sustainable Development	3
SOC 336	Anatomy of a US City	3
SOC 350	Advanced Topics in Geographic Information Systems (GIS)	3
SOC 338	Schools and Society	3
SOC 361	Criminal Justice Administration	3
SOC 362	Modern American Gangs	3

SOC 364	Law and Society	3
SOC 366	White Collar Crime	3
SOC 367	Crime & Justice in Urban Settings	3
SOC 380	Sport and American Society	3

## Courses

### **URBN 202. Introduction to Urban Studies. 3 Credits.**

An introduction to the complexities of urban life and space emphasizing the interaction of socio-cultural, political, economic, natural, and built environments. The course will examine the factors that influence urbanization, the distinct patterns of social interaction that typify urban life, motivations for various patterns/strategies of urban development, and the effect of globalization on urban expansion and decline. These points of emphasis are founded on the understanding of cities as unique environments with distinct challenges to social organization, economic growth and inequality, and sustainability.

### **URBN 205. Urban America and Catholic Social Teaching. 3 Credits.**

An interdisciplinary, service learning course. Sociological, political science, economic analysis of urban poverty, combined with reflections on Catholic social teaching, provide the framework for student-volunteer work at various Bronx-based community organizations.

### **URBN 301. Special Topics in Urban Affairs. 3 Credits.**

Course descriptions will be announced when courses are offered.

### **URBN 302. Sustainable Cities. 3 Credits.**

This course examines issue related to urban environmental sustainability through classroom instruction and field experience in New York City. Primary topics will include an introduction to the methods used by environmental scientists to measure environmental conditions, historical and contemporary environmental issues facing urban communities, the potential for sustainable urban development and growth, and issues pertaining to urban inequalities and environmental justice.

### **URBN 303. Urban Planning. 3 Credits.**

Introduction to the principles and techniques of urban planning. Practical application of knowledge from many disciplines in forming physical design for urban spaces. Consideration of demographic, political, economic, and legal factors in the planning process.

### **URBN 375. Internship. 3 Credits.**

Students participate in an off-campus training experience closely related to their area of study. Frequent meetings with the internship advisor and a paper are required. Internships are arranged through the Center for Career Development and must be approved in advance by the chair and the Dean of the School of Arts.

### **URBN 401. Senior Seminar in Urban Studies. 3 Credits.**

An in-depth, interdisciplinary analysis of specific research and practical problems. A capstone course intended to help students integrate the various courses they have taken in Urban Studies.

**URBN 402. Ind Sty: Urban Affairs. 3 Credits.**

Supervised reading and/or research designed to allow majors to pursue areas of special interest. Topic and outline of plans must be approved by director of program and supervising professor.

**URBN 406. Urban Honors Thesis I. 3 Credits.**

The first of a two-semester progression, Urban Honors Thesis I allows exceptional junior and senior students the opportunity to engage in an independent research project under the direction of the program director and a committee drawn from Urban Studies faculty. In the first semester, the student will conceptualize and propose the independent project and pursue advanced study in theory, method, and analysis. Open only to Urban Studies majors who meet program criteria. Approval of program director required.

**URBN 407. Urban Honors Thesis II. 3 Credits.**

The culmination of a two-semester progression, Urban Honors Thesis II, allows exceptional junior and senior students to collect and analyze data to complete an original independent research project. Open only to Urban Studies majors who meet program criteria and successfully complete URBN 406. Approval of program director required.

**URBN 475. Internship. 3 Credits.**

Students participate in an off-campus training experience closely related to their area of study. Frequent meetings with the internship advisor and a paper are required. Internships are arranged through the Center for Career Development and must be approved in advance by the chair and the Dean of the School of Arts. Open to majors only.

# Art History & Digital Media Art

Dr. Daniel Savoy  
Chair of the Department

The Department of Art History and Digital Media Art offers a Major in Art History and Minors in Art History and Digital Media Art.

The Major in Art History examines world art created from the pre-historic to contemporary eras within trans-historical and transcultural contexts. It provides students with the ability to interpret and find meaning in objects, artifacts, and images, while providing them with the critical thinking, research, and writing skills to excel in careers in Art History or in related disciplines. Over the course of a 30-credit program of study divided into six interrelated areas of focus, students develop a visual vocabulary, multiple perspectives on key monuments, an understanding of the cross-disciplinary nature of Art History, and learn to analyze visual materials, organize ideas, and write and speak persuasively about representational issues. In all of its courses, the Art History program takes full advantage of the world-renowned museums, galleries, architecture, and libraries in New York City.

The two Minors in Art History and Digital Media Art are designed to supplement majors in numerous disciplines. In addition to examining broad historical and cultural contexts, courses provide opportunities for individual creativity and an introduction to the theory and technology shaping contemporary visual studies. A Minor in Art History and/or Digital Media Art is an ideal choice for a variety of careers. In addition to preparing students for advanced training in Art History or the graphic arts, the Minors support careers of historians, sociologists, psychologists, teachers, philosophers, copyright lawyers, non-for-profit business managers, writers, critics, journalists, museum curators, librarians, graphic designers, graphic illustrators, photographers, film producers, and advertising executives.

Majors and Minors in Art History and Digital Media Art may take advantage of internship programs. Each summer, at least one Art History Major is placed at The Peggy Guggenheim Collection in Venice, Italy, and the vast majority of students regularly intern at numerous museums, private art galleries, graphic design firms, graphic art magazines, and production companies in New York City.

## Major in Art History

Majors in Art History must take a minimum of 30 credits in Art History courses taken from the following six areas:

One of the following World Arts courses:		3
ART 150	Roots: Art	
ART 151	Roots:Art -1st Year Seminar	
ART 402	Special Topic: in Art (on a world art topic)	
Two of the following Art before 1600 courses:		6
ART 320	Ancient Art	
ART 321	Medieval Art	
ART 322	Renaissance Art	
ART 402	Special Topic: in Art (on a pre-1600 topic)	



Two of the following Art after 1600 courses:	6
ART 323 19th Century Art: 1750-1890	
ART 326 Baroque Art: From Empire to Revolution	
ART 329 History of Modern Art	
ART 402 Special Topic: in Art (on a post-1600 topic)	
One of the following Studio Art courses:	3
ART 212 Art of Digital Photography	
ART 213 Digital Drawing	
ART 214 Introduction to Graphic Design	
To be taken during the Junior or Senior year:	3
ART 405 Senior Seminar: in Art History	
Art History electives:*	9
Total Credits	30

\* Students interested in Museum Studies should take at least two of the following courses: ART 370 Current Trends, ART 402 Special Topic: in Art, on a Museum Studies Topic, ART 412 Independent Study, or ART 375 Internship.

## Minor in Art History

Minors in Art History must take 15 credits of Art History courses as follows:

ART 150 Roots: Art	3
Electives. At least 9 credits must be at the 300 or 400 levels *	12
Total Credits	15

\*ART 375 Internship may substitute for an upper-level course.

## Minor in Digital Media Art

Minors in Digital Media Art must take 15 credits of Digital Media courses including the following:

ART 212 Art of Digital Photography *	3
ART 213 Digital Drawing *	3
ART 214 Introduction to Graphic Design *	3
ART 380 Digital Video Art: Editing and Production *	3
Art elective in consultation with department	3
Total Credits	15

\* ART 150 may serve as a substitute to one of the 200-level Digital Media Art courses. ART 375 Internship may serve as a substitute to the 300-level Digital Media Art courses when the internship focuses on a subject within Digital Media Art. Winter Intersession Study Abroad ART 402 Venice from the Water (Venice, Italy) may serve as a substitute to ART 212 Art of Digital Photography or ART 380 Digital Video Art: Editing and Production.

Digital Media Art Minors who have taken MUSC 390 Digital Audio Recording and Editing prior to the fall 2020 semester may count this course toward the Digital Media Art Minor.

A minimum grade of C is required for courses to satisfy all major and minor requirements. Minors must have a contract signed and approved by the Department Chair.

## Courses

**ART 092. Fine Art Elective. 1 Credit.**

**ART 093. Fine Arts Elective. 1 Credit.**

**ART 150. Roots: Art. 3 Credits.**

An intensive and critical examination of major works of art from the medieval period to the present that contribute to an understanding of the modern world.

**ART 151. Roots:Art -1st Year Seminar. 3 Credits.**

An intensive and critical examination of major works of art from the medieval period to the present that contribute to an understanding of the modern world. First Year Seminar.

**ART 212. Art of Digital Photography. 3 Credits.**

Focuses on the creation of conceptually oriented digital prints, the history and aesthetics of digital art, and a thorough understanding of Photoshop, color management, digital cameras, and ink jet printing. Includes extensive instruction in software and professional-grade printers that facilitate the creation of digital prints. Regular discussions and critiques of student work will scrutinize the student's objectives, intentions, conceptual ideas, and technical skills. Materials fee: \$50.

**ART 213. Digital Drawing. 3 Credits.**

Introduces students to variety of skills and experiences ranging from still-life, portraiture, perspective and shading to the dynamic use of the human figure, as in drawing choreography. Taught within a Macintosh-computer environment using Adobe Illustrator and Corel Painter. Each student has use of a Wacom Intous digital sketch pad and stylus pen.

**ART 214. Introduction to Graphic Design. 3 Credits.**

Introduces the process of making graphic designs from the initial choice of a topic through the working stages and the finished presentation. Presents instruction in Adobe Photoshop and Adobe Illustrator programs. Some minor visual arts knowledge is highly recommended.

**ART 218. Introduction to World Art. 3 Credits.**

A survey and analytical study of selected major architectural monuments and masterpieces of painting, sculpture, and photography from Africa, Asia, Middle East, and South America. Art and architecture are placed within cultural, stylistic, and historical contexts.

**ART 260. Monasticism and the Arts. 3 Credits.**

A survey of the artistic achievements of monastic communities during the Catholic Middle Ages, from the Benedictines to the Franciscan and Dominicans. Students will read monastic texts and study major works of medieval architecture, manuscript illumination, painting, and sculpture that manifest monastic values.

**ART 304. Art & Architecture of Renaissance Italy. 3 Credits.**

An on-site study of different aspects of the political, socio-economic and cultural life of Italy as witnessed through the Renaissance art and architecture of Florence and the surrounding region. The course is offered in Italy during the summer.

**ART 315. American Art. 3 Credits.**

Examines American painting, sculpture, architecture, graphic art, and decorative arts from the colonial period to 1970. Emphasizes parallels with European culture, the characteristics of American realism, and social and political contexts. Topics include the emergence of American art, 1760-1840; American Romanticism of the Hudson River School and Luminism; the insurgent Realists of The Ashcan School; pioneers of American Modernism; and the Abstract Expressionists.

**ART 316. History of Asian Art. 3 Credits.**

Surveys the major movements of the arts of India, China and Japan, including painting, calligraphy, sculpture, architecture, photography and the decorative arts. Beginning with the Neolithic period and extending beyond modern movements to the contemporary era, the course examines works of Indian, Chinese and Japanese art in their aesthetic, social, philosophical and religious contexts. Discusses concepts essential to an understanding of Asian art, including Buddhism, Zen Buddhism, Confucianism and Daoism.

**ART 320. Ancient Art. 3 Credits.**

History of art in the Western tradition from the Paleolithic Age (20,000 B.C.) to the 4th century A.D. Examines the development of civilization in the Near East, Egypt, the early Aegean cultures, the emergence of Greek art, from the Bronze age through the Hellenistic period; and explores the rise and expansion of the Roman Empire; and the period from the beginning of the Christian era to the rule of Emperor Constantine in the 4th-century A.D. A museum assignment requires a visit to the collections of the Metropolitan Museum of Art or the Brooklyn Museum.

**ART 321. Medieval Art. 3 Credits.**

The history of art in the Middle Ages, beginning with Early Christian art and continuing through Late Gothic. A museum assignment requires a visit to the collections of the Metropolitan Museum of Art or the Brooklyn Museum.

**ART 322. Renaissance Art. 3 Credits.**

This class begins with the early Renaissance in Florence, continues with the High Renaissance in Italy, and concludes with the Renaissance in the North. The basic concepts that distinguish the Renaissance from the Medieval period and modern times are discussed. Individual work is placed within the context of contemporary history, emphasizing in humanism, the emerging individualism of the artist, the revival of interest in the ancient world, and the varied responses to the classical heritage. A museum assignment requires a visit to the collections of the Metropolitan Museum of Art or the Brooklyn Museum.

**ART 323. 19th Century Art: 1750-1890. 3 Credits.**

Surveys nineteenth-century art from its roots in the Enlightenment and French Revolution to Post-Impressionism. Examines the innovations of artists and movements that led to the clash of classicism and romanticism, birth of landscape painting, and emergence of the avant-garde and radical painting that became the foundation of modern art. Focuses on how artists developed new visions in response to the century's political, social, and technological upheavals. Emphasizes major movements such as Neoclassicism, Romanticism, Realism, Impressionism, and Post-Impressionism. Includes museum visits.

**ART 326. Baroque Art: From Empire to Revolution. 3 Credits.**

This class discusses the profound geopolitical, religious, and economic changes and expansions in 17th century Europe as expressed in art and architecture, from the age of empire building and mercantilism to the age of revolution and enlightenment philosophy. The class will include trips to Metropolitan Museum of Art and special exhibitions at area museums.

**ART 329. History of Modern Art. 3 Credits.**

This course is an introduction to Modern art from the end of the 19th century to the present. Shaped by the dramatic social, technological and intellectual changes of the industrial age of modern life, painting, sculpture and new forms of art (e.g. photography) radically departed from the traditional notions of art formulated and practiced in pre-industrial society. Throughout the semester, we will examine the many artistic movements in modernism's wake, including impressionism, post-impressionism, expressionism, cubism, surrealism, and others as well as the rise of the avant-garde and the development of abstraction. This course includes visits to the Museum of Modern Art and various Chelsea area galleries.

**ART 340. History of Fashion. 3 Credits.**

Surveys costume and dress in Western culture ranging from antiquity to the present. Studies the costumes of various periods and the factors influencing the evolution of clothing styles. Examines historical influences, political rhetoric, economic issues and social and cultural identity in fashion in order to analyze contemporary trends and styles.

**ART 358. The New York Skyscraper. 3 Credits.**

An introduction to the art of building, concentrating on the skyscraper in New York City, and dealing only with such earlier work as relates to its background and development. Attention is given to planning, style, and engineering. The course features lectures, tours, visits to studios.

**ART 360. New York City Architecture, Urbanism and Design. 3 Credits.**

From the Federal-style row house to the modern skyscraper, New York's architectural heritage is compelling. This course is an introduction to the philosophy and socio-economic/political forces that have shaped our city. Using the city as a classroom, students experience architecture and the urban environment—look, touch, discuss, question. Classes take place on site, at various Manhattan locations.

**ART 370. Current Trends. 3 Credits.**

A course to introduce the student to the current New York Art Scene. There will be visits to galleries, studios, museums and performance spaces.

**ART 375. Internship. 3 Credits.**

Students participate in an off-campus training experience closely related to their area of study. Frequent meetings with the internship advisor and a paper are required. Internships are arranged through the Center for Career Development and must be approved in advance by the chair and the Dean of the School of Arts.

**ART 380. Digital Video Art: Editing and Production. 3 Credits.**

This course focuses on creating works of video art while examining and reflecting upon filmic history. There is extensive instruction in Final Cut Studio Pro and DVD Studio Pro, giving students the skills to begin making video in the first two weeks. Students create conceptual, engaging work that is critiqued at length. While examining video art's historical roots and contemporary video artists, students develop their video projects that build upon ideas and techniques realized from the first video assignment.

**ART 402. Special Topic: in Art. 3-6 Credit.**

An intensive study of a single artist, genre, period, culture, or issue facing visual art scholarship today. The subject studied will vary from semester to semester. A student may elect this course as often as four times for the art history minor, presuming a different subject each time. Offered every semester. Previous special topic courses include 'History of Photography', 'Art Between the World Wars', 'History of Modern Art', 'History of Fashion', and 'Video Editing and Production.'

**ART 405. Senior Seminar: in Art History. 3 Credits.**

An overview of the theories and methods of art history that clarifies approaches to analyzing and interpreting art, including formalism, iconography, semiotics, Marxism, feminism, deconstructionism, and post-colonialism. Readings will cover art historical periods from the ancient to the contemporary and a wide range of media. Students will develop critical skills necessary to practice the discipline of art history: careful looking, original research, compelling argumentation, and clear writing.

**ART 408. Independent Study. 1 Credit.**

Individual study of a major artist, architect, or aesthetical issue facing art scholarship and practice today with a member of the department. Open only to students who secure the approval of the Chair of the Dept. and the consent of the individual instructor. A student may elect this course only once for credit towards the minor in Digital Media arts or the minor in Art History.

**ART 412. Independent Study. 3 Credits.**

Individual study of a major artist, architect, or aesthetic issue facing art history scholarship today with a member of the department. Open only to students who secure the approval of the Chair of the Department and the consent of the individual instructor. A student may elect this course only once for credit towards the Minor in Art History.

# Women & Gender Studies

Dr. Nefertiti Takla  
Program Coordinator

Women and Gender Studies is an interdisciplinary minor that encourages students to explore the complex ways in which gender shapes who we are and how we live, and it takes the diversity of women's experiences through history and across cultures as its central focus. Until recently, women's experiences and work have been undervalued and often ignored. Recent scholarship by feminist historians, literary scholars, social and natural scientists, and educators has recovered the richness of women's contributions and the complexity of women's roles in society over time. This field of study explores the diversity of women's experiences as they have been represented for and by them, and, in so doing, challenges students to examine critically gender relations in both the public and private spheres. Women and Gender Studies also analyzes gender as it intersects with other categories that shape social institutions and practices, power relations, and the very meaning of knowledge. Through courses, invited speakers, and faculty research, the minor seeks to promote women's issues and gender awareness in order to help students create a more equitable world.

## Minor

Minors must take 15 approved credits from the following list. Three of these must be at the 300-level or higher. No more than two courses from any one department will apply to the minor.

ENGL 256	Types of Film Experience *	3
ENGL 262	Gender and Literature	3
ENGL 323	Studies in Eighteenth-Century British Literature *	3
ENGL 334	Romantic Matter(s): Subjects & Objects *	3
ENGL 337	Gender, Sexuality, and Literature	3
ENGL 374	Lust, Passion, and the Body: The American Novel to 1914	3
HIST 308	European Women to 1500	3
HIST 360	Women in the United States	3
HIST 388	Women in Modern Europe	3
HIST 389	Gender and Sexuality in the Modern Middle East	3
HIST 393	Global Feminisms	3
MGMT 460	Special Topics in Management	3
MUSC 400	Special Topics: in Music *	3
PHIL 230	Philosophy of Law *	3
PHIL 332	Africana Philosophy	3
PHIL 335	20th Century Philosophy *	3
PHIL 350	Philosophers on Race, Class, and Gender	3
PHIL 352	Philosophers on Sexuality, Love, and Friendship	3
POSC 310	Special Topics: in Comparative Politics *	3
POSC 412	Senior Seminar: Women in Politics	3

PSYC 342	Psychology of Family Relationships	3
PSYC 343	Psychology of Women	3
RELS 238	Theologies Of Liberation	3
RELS 300	Special Topic *	3
RELS 349	Women and Islam	3
RELS 374	Women in Western Religion	3
RELS 375	Religion and the Body	3
RELS 390	Sexuality and the Sacred	3
RELS 470	Religious Studies Seminar *	3
SOC 220	Social Problems	3
SOC 290	Codes of Gender	3
SOC 302	Race And Resistance	3
SOC 304	Social Inequalities	3
SOC 306	The Family	3
SOC 315	Special Topics: in Sociology *	3
SPAN 320	Special Topics: in Hispanic Culture Studies *	3
SPAN 420	Spanish Seminar *	3
SPAN 429	The Spanish Golden Age *	3
SPAN 440	Women in Hispanic Literature	3

\* When these "topics" courses focus on a subject relevant to women and gender studies. Special topics courses are also occasionally offered in education, the humanities, business, and the social sciences and may count toward the minor with permission of the Women and Gender Studies coordinator.

A minimum grade of C is required for credit toward the minor.

# Intensive English Language Program (IELP)

Jeffrey Vanderwerf, Director

## IELP Program Overview

The Manhattan College Intensive English Language Program (IELP) offers courses for English language learners during the course of four sessions. Fall and spring courses are 14 weeks in length, while the summer session is nine weeks in length. Fall and spring courses are 22 classroom hours per week, while summer courses are 30 classroom hours per week. Online courses are 20 synchronous hours per week. All IELP instructors have Master's degrees in TESOL or a closely related area. The teaching domains are reading, writing, listening, speaking, grammar (structure), and vocabulary with an emphasis on skills necessary for undergraduate and graduate level academic success in the United States. There are six English language levels in the IELP, which are outlined below.

## Program Goals

- To prepare non-English speaking students for admission into Manhattan College and other U.S. institutions through rigorous, holistic English language training.
- To build students' English language learning strategies and study skills critical for their future success in English-language environments.
- To prepare students for success in their academic and professional careers in the U.S.
- To increase diversity in the Manhattan College student population by enabling non-English speakers to meet the institution's English language admission requirements.
- To expose students to authentic intercultural experiences.

## Mission Statement

The mission of the Intensive English Language Program at Manhattan College is to provide international students with high-quality English language instruction and cultural skills necessary to meet their academic and professional goals. To achieve this mission, the IELP collaborates with partners across the college to offer programs and services that foster learning, provide qualified faculty and curriculum, and promote intercultural communication.

## Courses\*

- IEP 001 Beginner Level Intensive English Program
- IEP 002 Upper Beginner Level Intensive English Program
- IEP 003 Intermediate Level Intensive English Program
- IEP 004 Upper Intermediate Level Intensive English Program
- IEP 005 Advanced Level Intensive English Program
- IEP 005 Advanced Level Intensive English Program Online: IEP 005 as an online course
- IEP 006 Upper Advanced Level Intensive English Program



- IEP 006: Upper Advanced Level Intensive English Program Online: IEP 006 as an online course

*\* These are non-credit courses and do not count towards a degree or certification.*

## Application Procedures

The IELP application process can be done online. Applicants must have high school transcripts (translated into English) and a copy of applicant passport in order to complete the online application. The IELP application and admissions requirements can be found at the following link:

<https://manhattan.edu/admissions/international/apply.php>.

## Advisement

The IELP offers advising for students prior to the start of the program, during the program, and post-IELP. IELP administration serves as the advising office for students, and advisement includes academic and visa advisement.

## Courses

### **IEP 001. Beginner Level Intensive English Program. 0 Credits.**

This level develops academic skills necessary for speaking, listening, and reading for beginner level students interested in formal study at Manhattan College. The objectives of the course of study include academic vocabulary development, improvement of listening skills in academic settings, note-taking skills, grammar, and reading comprehension. The skills of listening, writing, speaking, and reading are monitored by specific learning outcomes consistent with beginner student needs. For communication fluency, students will be exposed to accent reduction exercises. Successful completion of this one semester course satisfies requirements for entry to IEP 2, Upper Beginner Level.

### **IEP 002. Upper Beginner Level Intensive English Program. 0 Credits.**

This level further develops basic paragraph structure such as topic sentences and writing supporting information and conclusions. Basic verb tenses such as present, past and future are further investigated. Students also learn the fundamentals of the writing process, reading skills and vocabulary development, as well as discussing brief texts. Speaking and Listening skills such as oral communication and effective listening are emphasized. Students learn how to comprehend and interact in basic spoken settings while responding accurately. Speaking activities are designed for common social setting, and well as for effective pronunciation and fluency.

**IEP 003. Intermediate Level Intensive English Program. 0 Credits.**

This level further develops listening, speaking and reading skills from IEP 2, upper beginner level, while adding an academic writing and research skills component for students pursuing undergraduate programs at the college level. The learning objectives build on the skills needed for academic writing, listening, speaking, and reading. Another core component of this level is the skills needed for academic vocabulary development, improvement in writing, comprehension of university textbook materials, and development of academic essay and research paper writing skills. Students will be expected to read and present material both verbally and through essay writing. Successful completion of IEP 3, Intermediate Level course satisfies requirements for entry to IEP 4, Upper Intermediate Level.

**IEP 004. Upper Intermediate Level Intensive English Program. 0 Credits.**

In this high intermediate level the students write multi-paragraph essays on academic topics while further learning the writing process (outlining, drafting and editing). Advanced verb tenses are used and students show marked improvement in writing and vocabulary usage. Students demonstrate active reading strategies such as inferring, scanning for key words and identifying information in context. Academic textbooks are introduced for reading comprehension. Students learn to confidently give presentations on academic topics, participate in group discussions and debates, and improve their language fluency and intonation. Successful completion of IEP 4, Upper Intermediate Level course satisfies requirements for entry to IEP 5, Advanced Level.

**IEP 005. Advanced Level Intensive English Program. 0 Credits.**

This level develops academic listening and speaking skills, and reading/writing scenarios for advanced level students who are preparing for formal undergraduate matriculation at the college. Learner outcomes for Listening/Speaking include academic listening skill improvement, development of effective note-taking skills, and improved discussion and presentation skills. Learner outcomes for the Reading/Writing component include further reading comprehension, writing proficiency, academic specific vocabulary, and research skills. Activities for this level include formal classroom presentations, reading/listening specific to academic content, and research reports. Successful completion of this course satisfies requirements for formal undergraduate matriculation to Manhattan College.

**IEP 006. Upper Advanced Level Intensive English Program. 0 Credits.**

This level further develops reading, writing, listening and speaking for upper advanced students planning to study at the graduate level at the college. Learner outcomes for this level include reading relevant portions of graduate academic sources (books, journal articles, or material of similar quality) in their field of study, understanding graduate lectures for listening comprehension, and improved oral presentation skills. Students will demonstrate many different ways of introducing a source, and use MLA and APA formatting correctly, including APA abstract. Activities for this level include writing 12-15 page essays, reading specific topics in the graduates' field of study, listening and understanding lectures, and making academic presentations. Successful completion of this course satisfies requirements for formal matriculation to the graduate school of Manhattan College.

# Business - General Information

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## Historical Note

In September 1926, a two-year program of courses in Business was offered to qualified students who had completed two years in Arts and Sciences. The success of this program prompted the establishment of Business in the spring of 1927. Degrees of Bachelor of Science in Business were awarded to the first graduates of the program in June 1928. During the next two years the program of professional subjects was again revised and extended to a four year curriculum of business and cultural courses. The first class to complete this curriculum conducted totally within Business was graduated in 1932. In 1933, the degree designation was changed to Bachelor of Business Administration. In 1970, as a result of an extensive curriculum revision which emphasizes a balance of humanities, mathematics, science, social sciences, and professional business courses, the degree was changed to the Bachelor of Science (Business Administration). At the same time, the baccalaureate degree program in the Evening Session was merged into Business.

The O'Malley School of Business is accredited by AACSB International, the Association to Advance Collegiate Schools of Business, the premier accrediting agency for business programs globally.

## Mission Statement

The O'Malley School of Business shares with the rest of Manhattan College a commitment to the development and growth of each student. Inspired by Lasallian tradition, the mission of the School is to prepare students from diverse backgrounds for the challenges they will face as business and community leaders. The faculty of the School, as teachers, scholars and mentors, foster the development of the whole person by engaging students in a values-based education with current business theory, skills and practices.

## Curriculum and Programs

In order to accomplish the mission of Business, the curriculum is structured to achieve a balance of liberal arts courses and professional business courses, thus bringing together liberal education and professional business preparation. The program in liberal arts is divided among the areas of humanities, mathematics, sciences, and social sciences. The professional business program, which includes core courses required of all students and the study of a major field, offers the student both theory and application to practical problems. This approach increases students' ability to reason and analyze situations in the business context of the 21st century, thus helping them understand how today's challenges -- from technology to climate change -- are addressed in real business organizations. The societal considerations of the firm and the behavioral aspects of the managerial function are interwoven throughout the business curriculum. The focus in the professional area is on executive action in business and non-business organizations.

The program of liberal arts courses, which comprises one-half of the total curriculum, blends humanistic knowledge with professional career preparation. The sequence of general business-related courses examines topics of broad business knowledge and

practice. The sequence includes introductory courses in accounting, economics, computer information systems, law, statistics, management, marketing, finance and operations. In each of these courses, emphasis is placed on essential analytical tools and their use in solving business problems. Course work emphasizing strategic planning, societal development, and global business is also included to help prepare students to enter a career in a functional field or undertake graduate studies. The major disciplines are accounting, business analytics, computer information systems, economics, finance, management, and marketing. Global Business Studies may be taken as a co-major or as a minor.

## **Majors**

The business curriculum provides seven major fields of study from which the student can select one or more for in-depth study. A student who opts to major in two areas must complete the requirements for both majors. Students may use business and free electives towards the second major.

### **Accounting**

The major in accounting centers on financial and operational communications for business and governmental units. The program prepares students for careers in public accounting, industrial or private accounting, governmental and institutional accounting, or for a general business career. Accounting education provides a sound basis for advancement to managerial positions and is a desirable background for other non-business professions, such as law.

Students who want to follow careers in public accounting should pursue the five-year B.S. in Professional Accounting/MBA Program. All accounting students should speak to their academic advisor about eligibility for the New York State CPA examination and the five-year program requirements.

### **Business Analytics**

Using data, Business Analytics helps organizations evaluate their performance, gain operational insight, improve decision making and forecast market trends. It combines the study of analytical and statistical data analyses, data management, modeling and visualization. The underlying analytics tools and techniques emerge from a variety of disciplines such as operations research, statistics, computer science and traditional business fields. The Business Analytics major allows the student to develop the skills needed to pursue a data-related career in financial services, healthcare management, telecommunications, retail, media, or one of the many other industries where data analytics skills are in high demand.

### **Computer Information Systems**

A CIS major enables a student to determine the informational needs of an organization and identify the patterns of information flow which satisfy those needs. The program includes studies in computer hardware and software, programming, computer decision systems, file and communication systems, operations analysis and simulation, management information systems, and the analysis and design of information systems. The CIS major will find excellent career opportunities in systems analysis and

management information systems. Combining the CIS knowledge with business functional areas such as accounting, finance, marketing, or management, provides the CIS graduate with a competitive advantage in careers related to system development and analysis.

## **Economics**

A major in business economics is designed for those students whose primary interest is oriented towards an examination of economic relationships. Students seeking a broad global economic background for government, industry, or law would benefit from this program. Students are able to choose one of three concentrations: quantitative economics, applied economics, or environmental economics. This program is also suitable for students who are interested in pursuing graduate studies in Economics.

## **Finance**

The major in finance enables the student to examine the tasks and techniques of financial management within business and government units and to study the structure of financial institutions and analytical instruments. Course work emphasizes the knowledge and tools needed to understand and participate in the global economic system. The program stresses financial analysis and decision-making and prepares students for careers in financial management and analysis.

## **Management**

The management program examines theories and concepts of organizations, describes the skills used by managers in fulfilling their roles and functions, and provides an opportunity for students to apply quantitative methods to solve management problems. The major emphasis is on behavioral aspects of organizations and administrative actions, in both business and nonprofit organizations. Special attention is given to the social responsibilities of the business executive, the ethics of decision-making, and the role of the modern corporation in society. Students also learn to master the latest technologies, which allows them to graduate with a functional knowledge of the tools that will be used in their careers. Students can choose to complete a concentration in Talent Management or Behavior and Decision Making.

## **Marketing**

Marketing is essential for the effective managing of both for-profit and nonprofit organizations. Marketing involves creating products and services, communicating their value, and managing customer relationships based on a thorough understanding of customers' needs and wants. The tasks of marketing managers include determining the firm's competitive market position and strategy, and formulating the optimum marketing mix: the product portfolio, communication, pricing and distribution strategies.

The marketing program emphasizes a managerial approach and is designed to train marketing professionals who are globally-oriented business leaders. The curriculum stresses analysis, critical thinking and decision making in the marketing process.

## Co-Major

### Global Business Studies

This co-major develops in the student a thorough and rigorous global perspective and understanding of the international environment and markets. Such understanding is essential for any business person who competes domestically and in the international arena. This field is interdisciplinary in nature and includes studies in business, communication, political science, and sociology. Students who are interested in pursuing careers in the international aspects of business or in government may complete the program as a second, co-major. Proficiency in a second language is strongly recommended.

### Minors for Business Students

In order to provide an opportunity for students to broaden their educational experiences, students in Business are able to minor in another business area such as management, marketing, business analytics, CIS, economics, finance, and accounting. This program consists of three courses in the discipline. Details of these programs may be found under the separate headings for each department in the business school.

Through special arrangements with Liberal Arts and Sciences, a business student may take a minor program consisting of approximately 15 credits in the humanities, mathematics, sciences, or social sciences. Business students who are interested in pursuing a minor outside the school of business must contact the academic advisor of the school for further information.

All major and minor credits must be taken at Manhattan College. A minimum grade of C is necessary to receive major or minor credit. Also, all 300 and 400 level Business courses must be taken at Manhattan College.

### Minors for Non-Business Majors

Students who are in Schools other than Business may pursue a minor in Business. Students must obtain the permission of the School in which they are enrolled. The minor in Business for non-business majors requires the completion of 15 credits. The five course sequence consists of:

ACCT 201	Principles of Accounting I	3
ECON 203	Microeconomics	3
MGMT 201	Introduction to Management	3
MKTG 201	Essentials of Marketing	3
Business Elective (with proper prerequisites)		3
Total Credits		15

Students in the Business minor who are specifically interested in Finance may select FIN 301 Principles of Business Finance as their elective, but must meet the prerequisite for the course, BUAN 227 Business Statistics, or its equivalent. Students interested in a minor in Business must consult with the School of Business advisor.

Non-Business majors may also pursue 15-credit minors in specific areas of business such as Economics, Finance, Management, and Marketing. Please consult the department section of the catalog for more information. The specific area minor must be approved by the chair of the department.

## **BS/MBA**

The B.S. Business / Masters of Business Administration Program offers business students an option to complete a five-year multiple award program. The successful completion of the five-year program leads to two awards: a B.S. in Business (in one of seven business majors) and an MBA. The program consists of a total of 150 hours in undergraduate and graduate credits, planned over a five-year period, including coursework during ten semesters and one summer session. The program is designed for students who are academically competitive. Students may use the free electives to commence with the masters level classes in their fourth year.

## **Advisement**

Advisement for students in Business is conducted by the Senior Academic Advisor in conjunction with the Department Chairs and faculty. The Senior Academic Advisor counsels all first-year students, sophomores, and transfer students, as well as any juniors and seniors when necessary. All students select their major at the end of their sophomore year. Programs of study for first-year students, sophomores, and transfer students, as well as co-approval of athletes, are approved by the Senior Academic Advisor. Programs of study for juniors and seniors are approved by the Department Chairs who act as advisors to the students in selecting a major. Department Chairs and faculty are responsible for advising upper level students. The faculty are closely associated with professional business organizations and industrial groups carrying out related activities, thus assuring maximum service to the student in preparing to meet the requirements for the degree, for advanced professional study, and for placement.

Business students who plan to enter law should consult with the Prelaw Advisor. The Advisor will guide the students through the preparation and application process required for law school admissions.

## **Internships**

Students in the O'Malley School of Business are encouraged to complete a business internship. Students can complete an approved internship experience for academic credit. Interested students must consult with the Assistant Dean for Career Development for guidance on the process of securing an appropriate internship and obtaining the required faculty sponsorship. Faculty supervisors will define appropriate academic activities in parallel to the work requirement in order to provide a complete internship experience. Credit bearing internships must be approved by the Department Chair, the Dean, and the Assistant Dean for Career Development.

## **Student Organizations**

Organizations of special interest to students in Business include: The Accounting Society; Beta Alpha Psi, the International Honor Society for Financial Information Professionals; Beta Gamma Sigma, the National Honor Society in Business; the Business Analytics

Data Society; Alpha Iota Delta, the National Honor Society for Computer Information Systems and Decision Sciences; the Economics-Finance Society; Omicron Delta Epsilon, the National Honor Society in Economics; the Entrepreneurship Club; Financial Management Association; the National Honors Society in Finance; Fair Trade Fuel, the student-run business; the Investment Club; the Management Club; Sigma Iota Epsilon, the National Honor Society in Management; the Marketing Club; American Marketing Association, Student Chapter; Mu Kappa Tau, the National Marketing Honor Society; the Women in Business Club.

## Study Abroad

Students interested in studying abroad should discuss their interest with the Senior Academic Advisor by the beginning of sophomore year. It is best to plan the semester of study abroad for the second semester of sophomore year or the first semester of junior year. Further information about study abroad opportunities is available through the Study Abroad Office. The O'Malley School of Business also sponsors a study tour, linked to a course, GLBL 414 International Field Study Seminar, conducted once a year for three credits. The course can be used towards fulfilling the requirements of the Marketing major, Global Business Studies co-major, or as one of the student's free or business electives.

## Curriculum

### I. Liberal Arts and Science Courses

#### A. Humanities Courses

ENGL 110	First Year Composition	3
CIS 110	Introduction to Information Systems	3
ENGL 211	Written Communication	3
ENGL Literature Elective		3
PHIL 201	Ethics	3
RELS 110	The Nature and Experience of Religion	3
RELS Elective 200 Level		3
RELS Elective 300 Level		3

#### B. Social Sciences Courses

ECON 203	Microeconomics (Microeconomics)	3
ECON 204	Macroeconomics (Macroeconomics)	3
HIST History Elective		3
PSYC 203	Introduction to Psychology I	3
SOC 201	Introduction to Sociology	3

#### C. Mathematics and Science Courses

MATH 153	Linear Mathematical Analysis	3
MATH 154	Calculus for Business Decisions	3
SCI Science Elective <sup>1</sup>		6
Liberal Arts Elective <sup>2</sup>		9

Total Credits

60



- <sup>1</sup> Science requirements: 6 credits from the following: Astronomy & Earth Science 201, 202, Science 203-204, Science 207; other science courses only with the approval of the dean and chair of the department.
- <sup>2</sup> Approved Arts and Science courses.

II. Business Courses

A. Business Core Program for all Students

ACCT 201	Principles of Accounting I	3
ACCT 202	Principles of Accounting II	3
BUAN 227	Business Statistics	3
FIN 301	Principles of Business Finance	3
ECON 305	Money and Banking	3
LAW 203	Business Law I	3
MKTG 201	Essentials of Marketing	3
MGMT 201	Introduction to Management	3
MGMT 307	Operations and Quality Management	3
MGMT 406	Strategic Management	3
MGMT 430	Business, Government, and Society	3
Total Credits		33

B. Business Program for Non-Accounting Majors

Major Field	21
Free Electives *	6
Business Core Courses	33
Total Credits	60

\*Students interested in pursuing the five-year B.S./MBA program can use the free electives in their senior year to complete courses toward the MBA program.

C. Business Program for Accounting Majors

Accounting Major Courses	27
Business Electives *	3
Business Core Courses	33
Total Credits	63

\*Students interested in pursuing the five-year B.S./MBA program can use the business elective in their senior year to complete a course toward the MBA program.

Total Credits for Graduation:

Non-Accounting Majors	120
Accounting Majors	123

Business students who are interested in pursuing a minor outside the O'Malley School of Business must contact the senior academic advisor of the school for further information.

# Accounting, Business Analytics, CIS & Law

## 1. Accounting, Business Analytics, Computer Information Systems & Law (ACCT/BUAN/CIS/LAW)

Dr. Fengyun Wu  
Chair of the Department

The Department of Accounting, Business Analytics, Computer Information Systems, and Law (ACCT/BUAN/CIS/LAW) offers a broad choice of courses and three majors: Accounting, Business Analytics and Computer Information Systems. The department also offers courses in Business Law required for students in the O'Malley School of Business.

Accounting is often described as the language through which entities communicate financial information to various stakeholders. The program provides students with the skills that prepare them for accounting careers in business and not-for-profit organizations. Qualified students specifically interested in public accounting may pursue the B.S./M.B.A. Professional Accounting Program. The program is registered with the State of New York as a Professional Accounting Program geared toward obtaining the Certified Public Accountant (CPA) license.

Using data, Business Analytics helps organizations evaluate their performance, gain operational insight, improve decision making and forecast market trends. It combines the study of analytical and statistical data analyses, data management, modeling and visualization. The underlying analytics tools and techniques emerge from a variety of disciplines such as operations research, statistics, computer science and traditional business fields. The Business Analytics major allows the student to develop the skills needed to pursue a data-related career in financial services, healthcare management, telecommunications, retail, media, or one of the many other industries where data analytics skills are in high demand.

The Computer Information Systems major emphasizes the use of computers in aiding business professionals to perform their functions in modern organizations. The program emphasizes important technical and applied skills and prepares students for a variety of careers in management information systems and technology.

Every major in the department must consult with the Chair concerning the fulfillment of the requirements for the major and the electives that will be most suitable for his/her particular professional and academic development.

## Accounting (ACCT)

Requirements for a **major** in Accounting:

LAW 304	Business Law II	3
ACCT 301	Intermediate Accounting I	3
ACCT 302	Intermediate Accounting II	3
ACCT 303	Cost Accounting	3

ACCT 350	Accounting Information Systems	3
ACCT 401	Auditing	3
ACCT 405	International and Advanced Issues in Accounting	3
ACCT 409	Federal Income Taxation I	3
Select one of the following courses:		3
ACCT 320	Financial Reporting Analysis	
ACCT 410	Federal Income Taxation II *	
ACCT 435	Accounting Field Study Internship	
Business Elective		3
Total Credits		30

\* Required for students who are continuing with the five-year B.S./M.B.A. Professional Accounting Program.

A minimum grade of C is necessary to receive major credit.

### First Year

Fall	Credits	Spring	Credits
ACCT 201		3 ACCT 202	3
RELS 110 or ENGL 110		3 ENGL 110 or RELS 110	3
PHIL 201 or SOC 201		3 SOC 201 or PHIL 201	3
PSYC 203 or CIS 110		3 CIS 110 or PSYC 203	3
MATH 153		3 MATH 154	3
		15	15

### Second Year

Fall	Credits	Spring	Credits
ECON 203		3 ECON 204	3
ENGL 211 or BUAN 227		3 BUAN 227 or ENGL 211	3
MKTG 201 or MGMT 201		3 MGMT 201 or MKTG 201	3
ACCT 301		3 ACCT 302	3
ACCT 303		3 ACCT 350	3
		15	15

### Third Year

Fall	Credits	Spring	Credits
RELS Catholic Studies or ENGL Elective		3 ENGL Elective or RELS Catholic Studies	3
SCI Elective		3 SCI Elective	3
LAW 203		3 ECON 305	3
MGMT 307 or FIN 301		3 FIN 301 or MGMT 307	3
ACCT 401		3 ACCT 405	3
		Liberal Art Elective	3
		15	18

**Fourth Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
LAW 304		3 HIST Elective	3
ACCT 409		3 ACCT Elective/Internship*	3
RELS Global/Contemporary		3 MGMT 430 or 406	3
MGMT 406 or 430		3 Liberal Art Elective	3
Liberal Arts Elective		3 Business Elective	3
	15		15

Total Credits: 123

\*Must be ACCT 410 for students pursuing BS/MBA in Professional Accounting. Students interested in pursuing the five-year B.S./M.B.A. Professional Accounting Program must consult with their academic advisor.

Students enrolled in the O'Malley School of Business who wish to **minor** in Accounting must complete the following in addition to the core courses required of all students in Business:

ACCT 301	Intermediate Accounting I	3
ACCT 302	Intermediate Accounting II	3
One of the following:		3
ACCT 303	Cost Accounting	
ACCT 320	Financial Reporting Analysis	
ACCT 350	Accounting Information Systems	
ACCT 401	Auditing	
ACCT 409	Federal Income Taxation I	

A minimum grade of C is necessary to receive minor credit.

The Accounting program offers core courses required of all Business students. All students are required to take:

ACCT 201	Principles of Accounting I	3
ACCT 202	Principles of Accounting II	3

**Business Analytics (BUAN)**

Requirements for a **major** in Business Analytics:

BUAN/CIS 205	Introduction to Programming for Business Applications	3
BUAN/CIS 310	Business Data Management	3
BUAN 327	Advanced Business Statistics	3
BUAN 410	Data Mining for Business Applications	3
BUAN 427	Artificial Intelligence and Machine Learning	3
Approved BUAN or CIS Electives		6
Total Credits		21

A minimum grade of C is necessary to receive major credit.

Students majoring in Business Analytics are encouraged to complete a business internship. Students can complete an approved internship experience for academic credit. Free Elective credit may be used to complete BUAN 375 Assimilating the Internship Experience in Business Analytics. Interested students must consult with the Assistant Dean for Career Development for guidance on the process of securing an appropriate internship and obtaining the required faculty sponsorship. Faculty supervisors will define appropriate academic activities in parallel to the work requirement in order to provide a complete internship experience. Credit bearing internships must be approved by the Assistant Dean of Career Development, Department Chair, and Dean.

### First Year

Fall	Credits	Spring	Credits
RELS 110 or ENGL 110		3 ENGL 110 or RELS 110	3
ECON 203 or ACCT 201		3 ECON 204 or ACCT 202	3
MATH 153		3 MATH 154	3
PSYC 203 or CIS 110		3 CIS 110 or PSYC 203	3
PHIL 201 or SOC 201		3 SOC 201 or PHIL 201	3
	15		15

### Second Year

Fall	Credits	Spring	Credits
ACCT 201 or ECON 203		3 ACCT 202 or ECON 204	3
MKTG 201 or MGMT 201		3 MGMT 201 or MKTG 201	3
ENGL 211 or BUAN 227		3 BUAN 227 or ENGL 211	3
SCI Elective or BUAN/CIS 205		3 BUAN/CIS 205 or SCI Elective	3
LAW 203 or HIST Elective		3 HIST Elective or Law 203	3
	15		15

### Third Year

Fall	Credits	Spring	Credits
BUAN/CIS 310		3 BUAN 327	3
ENGL Elective or RELS Catholic Studies		3 BUAN 410 (Or BUAN Elective)	3
ECON 305		3 RELS Catholic Studies or ENGL Elective	3
MGMT 307 or FIN 301		3 FIN 301 or MGMT 307	3
Free Elective or BUAN Elective		3 SCI Elective	3
	15		15

### Fourth Year

Fall	Credits	Spring	Credits
BUAN 427		3 BUAN Elective or BUAN 410	3
BUAN Elective or Free Elective		3 Free Elective or BUAN Elective	3
MGMT 406 or 430		3 MGMT 430 or 406	3
RELS Global/Contemporary		3 Liberal Art Electives	6

Liberal Arts Elective	3	
	15	15

Total Credits: 120

Students enrolled in the O'Malley School of Business who wish to **minor** in Business Analytics must complete the following in addition to the core courses required of all students in Business:

BUAN/CIS 205	Introduction to Programming for Business Applications	3
BUAN/CIS 310	Business Data Management	3
BUAN 410	Data Mining for Business Applications	3
or BUAN 427	Artificial Intelligence and Machine Learning	
Approved BUAN or CIS Elective		3

A minimum grade of C is necessary to receive minor credit.

The Business Analytics program offers core courses required of all Business students. All students are required to take:

BUAN 227	Business Statistics	3
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## Computer Information Systems (CIS)

Requirements for a **major** in Computer Information Systems:

CIS 201	Computer Hardware & Software	3
or CIS 211	System Administration and Cloud Computing for Business Applications	
CIS/BUAN 205	Introduction to Programming for Business Applications	3
CIS/BUAN 310	Business Data and Information Management	3
CIS 326	Networks, Telecommunications and Global Communications	3
CIS 431	Analysis, Design, and Implementation of Information Systems	3
Approved CIS or BUAN Electives		6
Total Credits		21

A minimum grade of C is necessary to receive major credit.

Students majoring in Computer Information Systems are encouraged to complete a business internship. Students can complete an approved internship experience for academic credit. Free or Business Elective credit may be used to complete CIS 375 Assimilating the Internship Experience in Computer Information Systems. Interested students must consult with the Assistant Dean for Career Development for guidance on the process of securing an appropriate internship and obtaining the required faculty sponsorship. Faculty supervisors will define appropriate academic activities in parallel to the work requirement in order to provide a complete internship experience. Credit bearing internships must be approved by the Assistant Dean for Career Development, Department Chair, and Dean.

**First Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
ECON 203 or ACCT 201		3 ECON 204 or ACCT 202	3
RELS 110 or ENGL 110		3 ENGL 110 or RELS 110	3
PHIL 201 or SOC 201		3 SOC 201 or PHIL 201	3
PSYC 203 or CIS 110		3 CIS 110 or PSYC 203	3
MATH 153		3 MATH 154	3
	15		15

**Second Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
ACCT 201 or ECON 203		3 ACCT 202 or ECON 204	3
ENGL 211 or BUAN 227		3 BUAN 227 or ENGL 211	3
MKTG 201 or MGMT 201		3 MGMT 201 or MKTG 201	3
HIST Elective or Law 203		3 CIS/BUAN 205	3
CIS 201 or 211		3 LAW 203 or HIST Elective	3
	15		15

**Third Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
MGMT 307 or FIN 301		3 FIN 301 or MGMT 307	3
ENGL Elective or RELS Catholic Studies		3 RELS Catholic Studies or ENGL Elective	3
Free Elective		3 Free Elective	3
ECON 305		3 CIS 310	3
CIS 326		3 SCI Elective	3
	15		15

**Fourth Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
SCI Elective		3 CIS 431	3
CIS or BUAN Elective		3 CIS or BUAN Elective	3
MGMT 406 or 430		3 MGMT 430 or 406	3
RELS Global/Contemporary		3 Liberal Arts Elective	6
Liberal Arts Elective	3		
	15		15

Total Credits: 120

Students enrolled in the O'Malley School of Business who wish to **minor** in Computer Information Systems must complete the following in addition to the core courses required of all students in Business:

CIS 201	Computer Hardware & Software	3
or CIS 211	System Administration and Cloud Computing for Business Applications	
CIS/BUAN 205	Introduction to Programming for Business Applications	3

CIS/BUAN 310 or CIS 326	Business Data and Information Management Networks, Telecommunications and Global Communications	3
Total Credits		9

A minimum grade of C is necessary to receive minor credit.

The Computer Information Systems program offers core courses required of all Business students. All students are required to take:

CIS 110	Introduction to Information Systems	3
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## Accounting Courses

**ACCT 091. Accounting Elective. 3 Credits.**

**ACCT 092. Accounting. 3 Credits.**

**ACCT 201. Principles of Accounting I. 3 Credits.**

Introduces fundamental principles in accounting and demonstrates their use in financial reporting for business organizations. It covers the four financial statements, preparation of those financial statements and accounting rules governing the preparation of those financial statements. The course provides students with a comprehensive coverage of financial reporting and the relevant components of the annual report. Topics include the accounting cycle and generally accepted accounting principles for cash, merchandise inventory, long-lived assets, liabilities and stockholders' equity. Financial statement ratios and ethical issues in financial accounting are introduced, applied and emphasized throughout the course.

**ACCT 202. Principles of Accounting II. 3 Credits.**

The second half of Principles of Accounting sequence has a focus of managerial accounting for business decisions. It covers costing methods, cost-volume profit analysis, incremental analysis, pricing decisions, budgetary planning, budgetary control, responsibility accounting, standard costs and planning for capital investments. It integrates and further discusses the topic of financial statement analysis. It emphasizes ethical dimensions of managerial accounting decisions. Prerequisite: ACCT 201.

**ACCT 301. Intermediate Accounting I. 3 Credits.**

This course is designed to assist students to understand, prepare, and analyze financial reporting for business enterprises. The course emphasizes on the foundation of financial concepts and their practical application. Topics discussed include accounting concepts, accounting information systems, preparation of financial statements, accounting for time-value of money, receivables, inventory, property, plant, and equipment, and intangible assets. Cases in ethics will be discussed to sensitize students to ethical situations encountered by practicing accountant. Moreover, a discussion of similarities and differences, with some application, between International Financial reporting Standards (IFRS) and US Generally Accepted Accounting Standards (GAAP) are incorporated in all topics covered in this course. Prerequisites: ACCT 201.



**ACCT 302. Intermediate Accounting II. 3 Credits.**

The second course in Intermediate Accounting is a continuation of the first half to cover accounting for current and long-term liabilities, stockholders' equity, investment, long-term contracts, installment sales, income taxes, pension, leases, accounting changes and error analysis, and full disclosure in financial reporting. Discussions of ethical cases are also discussed. Similarities and differences between IFRS and GAAP with some application are incorporated for all topics discussed in this course. A comprehensive project on critical analysis of financial reporting of one company over three years is assigned as a case study to practice on what student learn in both Intermediate I and II. Prerequisite: ACCT 301.

**ACCT 303. Cost Accounting. 3 Credits.**

This course concentrates on providing key cost data to managers. The topics covered include measurement and reporting of manufacturing costs, job costing, process costing, activity based costing, operation costing, accounting for spoilage, rework and scrap, standard costing variance analysis, variable costing, absorption costing, just in time inventory systems, backflush costing, cost allocation, joint products, quality costs, budgeting and managerial control, decision making and relevant information. Prerequisites: ACCT 201, ACCT 202.

**ACCT 320. Financial Reporting Analysis. 3 Credits.**

This course covers financial reporting analysis for security valuation. It discusses the investment environment and the use of financial statements in valuation models, analyzes information contained in the four financial statements and provides guidelines for forecasting future financial statements for valuation. Prerequisites: ACCT 202 and FIN 301.

**ACCT 350. Accounting Information Systems. 3 Credits.**

This course introduces students to conceptual understanding and practical application of accounting information systems. It seeks to enhance students' knowledge of analysis, design, and implementation of an AIS, with a focus on transaction cycles and internal control. Students will also learn how to apply these concepts using an enterprise system and other software packages. Offered in Spring. Pre-requisite: CIS 110, ACCT 201, and ACCT 301.

**ACCT 375. Assimilating the Internship Experience in Accounting. 3 Credits.**

In consultation with the faculty advisor, students design and complete an independent project related to their Accounting internship. This project aids in assimilating the practical off-campus work experience in business, industry, government or cultural organization with the students' studies and/or career interests. This course is subject to the approval of the Department Chair, Dean and Internship Coordinator of the School of Business. The student is required to pre-register with the Internship Coordinator and to obtain internship placement prior to the start of the semester. (Free/business elective).

**ACCT 401. Auditing. 3 Credits.**

Auditor's responsibilities in examining and preparing various reports on financial statements and his/her function in evaluating management controls. Topics include professional ethics, legal liability, auditing standards, internal control, and the selection, scope, and application of auditing procedures. Fall. Prerequisites: ACCT 301, ACCT 302, ACCT 350.

**ACCT 405. International and Advanced Issues in Accounting. 3 Credits.**

This course covers advanced accounting topics with an emphasis on international accounting issues. Advanced accounting topics include the equity method for investments, consolidation of financial statements, and accounting for not-for-profit organizations, state governments and local governments. International accounting topics include worldwide accounting diversity, International Financial Reporting Standards and accounting for foreign currency transactions, translation and hedging. Spring. Prerequisites: ACCT 301, ACCT 302.

**ACCT 409. Federal Income Taxation I. 3 Credits.**

This course focuses on the fundamentals of federal income taxation as it relates to individuals and covers various topics including the concepts of gross income, exclusions, capital gains and losses, personal and business losses, basis, deductions, and credits. The area of tax planning will also be addressed. Fall. Prerequisites: ACCT 301, ACCT 302.

**ACCT 410. Federal Income Taxation II. 3 Credits.**

This course focuses on the fundamentals of federal income taxation as it relates to business entities, with an emphasis on corporations and partnerships. The tax treatment of estates and trusts may also be addressed. Spring. Prerequisite: ACCT 409.

**ACCT 435. Accounting Field Study Internship. 3 Credits.**

Students will work in an accounting position for 120-150 hours. A journal will be maintained and a project, supervised by a faculty advisor, will be completed with a final report.

**ACCT 441. Accounting Seminar. 3 Credits.****ACCT 460. Accounting Seminar. 3 Credits.**

This course exposes students to theories and issues of current professional interest in accounting. Open to a limited number of students who meet departmental requirements and have the approval of the Chair of the Department. Prerequisite: ACCT 201, ACCT 202.

**ACCT 470. Accounting Independent Study. 3 Credits.**

A program of supervised reading and research under the direction of a member of the Department. Topics and methods of research are to be developed in consultation with the supervising professor. Open to qualified students who meet the departmental requirements and have the approval of the Department Chair and the Dean.

**ACCT 471. Accounting Independent Study. 1-3 Credit.**

Independent Study for Accounting Information systems. Permission of Dean.

**ACCT 475. Assimilating the Internship Experience in Accounting. 3 Credits.**

This course may be used as a second internship experience and/or with senior status. (Free/business elective).

**ACCT 608. Accounting Theory and Research. 3 Credits.**

This course is a seminar in accounting theory, research, and current topics in accounting. The topics covered include the information, measurement, and efficient contracting approaches to decision usefulness, the standard setting process, the joint IASB/FASB conceptual framework, new and proposed accounting standards, and professional responsibility. This course will also familiarize students to different research methodologies, with an emphasis on practical research. Case studies will be utilized extensively to enhance students' critical thinking, research and communication skills.

Prerequisite: ACCT 302.

**ACCT 609. Information Technology Assurance and Audit. 3 Credits.**

This course covers the evaluation of an information system; concepts of system and design; techniques of analyzing and flow charting various systems; use of computer audit package programs; and the study of organizational, security, input, output, processing, and documentation controls. Spring. Prerequisites: ACCT 301, ACCT 302, ACCT 401.

**ACCT 610. Governmental and Not-for-Profit Accounting. 3 Credits.**

This course examines accounting principles unique to governmental and not-for-profit entities for the preparation and analysis of their financial statements. Governmental and not-for-profit organizations are an increasingly large part of the economy. Not-for-Profit topics include accounting for not-for-profit voluntary health and welfare organizations, healthcare organizations and colleges and universities. Governmental accounting topics include government-wide and fund-based reporting models, budgetary accounting, and accounting for capital projects, debt service, business-type and fiduciary activities. After learning the basic accounting models, students will analyze the financial statements of these organizations and will either participate in a service-based learning project (preferably) or write an extensive research paper on these topics. Prerequisites: ACCT 302 or FIN 320, or permission of instructor.

**ACCT 611. Tax Research. 3 Credits.**

The course covers the following topics: discussions of various primary tax authorities; review of important court decisions in income, deductions, property transactions, and accounting methods; and discussions of Circular 230 and the rules related to tax preparer privileges. The class will also include discussions of gift and estate basic rules and tax accounting. Prerequisite: ACCT 410.

## **Business Analytics Courses**

**BUAN 205. Introduction to Programming for Business Applications. 3 Credits.**

Introduction to computer programming and data analysis utilizing an object-oriented programming language. Topics include input/output statements, variables, arithmetic and logical operations, decision statements, loop structures, functions, data formats (csv, json, xml), web scraping and libraries for data manipulation/analysis. In this course, problem solving and algorithm development skills will be honed on assignments involving business applications. Prerequisite: CIS 110.

**BUAN 227. Business Statistics. 3 Credits.**

Applications of statistical methods of data analysis and decision making. Coverage includes descriptive statistics, statistical measures and estimation, testing of hypothesis, linear regression and correlation analysis. Use of computer software for statistical analysis and business applications. Prerequisite: MATH 153 (or MATH 105), MATH 154, CIS 110.

**BUAN 305. Business Analytics Spreadsheet Modeling. 3 Credits.**

This course covers examples of descriptive analytics, predictive analytics, and prescriptive analytics. Topics include, data identification, preparation and representation; risk analysis and simulation; project management; decision analysis; and optimization. The course provides a balance between understanding processes for analytical modeling and developing the tools to represent and solve decision making problems. It introduces students to the fundamental concepts and tools needed to understand the emerging role of business analytics in organizations and shows students how to apply basic business analytics tools in a spreadsheet environment, and how to communicate with analytics professionals to effectively use and interpret analytic models and results for making better business decision. Emphasis is placed on applications, concepts and interpretation of results. Prerequisites: BUAN 227.

**BUAN 310. Business Data Management. 3 Credits.**

This course introduces the core concepts of data and information management. It is centered around the core skills of identifying organizational information requirements, modeling them using conceptual data modeling techniques, converting the conceptual data models into relational data models, and implementing the models using a commercial relational database management system. Additional topics include database administration, security, transaction management, distributed databases and SQL programming. Prerequisites: BUAN 205/CIS 205.

**BUAN 317. Principles of Data Visualization. 3 Credits.**

This course introduces the core concepts, principles and technologies that are utilized to visualize data. Students will learn about that different dimensions of data, how different types of data are encoded and how to analyze, summarize and visualize data. Spreadsheet-based and web-based visualization tools will be utilized throughout the course. Pre-requisites: BUAN 227, BUAN 205/CIS 205.

**BUAN 327. Advanced Business Statistics. 3 Credits.**

The course aims to broaden students' knowledge of statistics as an instrument for extracting information from data and a basis for enhanced decision-making in every aspect of business. Topics include regression analysis, time series forecasting, ANOV and design of experiments. Prerequisites: BUAN 227 and BUAN 205/CIS 205.

**BUAN 350. Supply Chain Analytics. 3 Credits.**

Supply chains are an integral part of contemporary business practices. This course focuses on understanding key areas of logistics and supply chain management where data analytics can help the companies overcome the complexities of today's marketplace. Students will be introduced to various methods and tools for descriptive, predictive and prescriptive analytics to address supply-chain decision problems such as efficiently managing the network of suppliers, manufacturers of goods/services, and distributors. Much of the course concepts will be covered through case studies and simulations. This course may not be taken concurrently with MGMT 307. Pre-requisite: BUAN 227.

**BUAN 375. Assimilating the Internship Experience in Business Analytics. 3 Credits.**

In consultation with the faculty advisor, students design and complete an independent project related to their BUAN internship. This project aids in assimilating a practical off-campus work experience in business, industry, government or cultural organization with the students' studies and/or career interests. This course is subject to the approval of the Department Chair, Dean, and Internship Coordinator of the School of Business. The student is required to pre-register with the Internship Coordinator and to obtain internship placement prior to the start of the semester. (Free elective).

**BUAN 410. Data Mining for Business Applications. 3 Credits.**

This course addresses how technology can be used to connect data to decision making. The use of real-world examples and cases places data mining techniques in context and fosters the development of data-analytic thinking, and also illustrates the proper application of data-mining techniques is as much an art as it is a science. In addition to the cases, the course features hands-on exercises within data mining software. Prerequisites: BUAN 310/CIS 310.

**BUAN 415. Security, Privacy & Ethical Issues in Business Analytics. 3 Credits.**

This course covers the tools, techniques and issues related to securing and using digital information. Topics include authentication, anonymity, legal and ethical issues of big data, basic cryptographic tools, access management, web tracking technologies and digital rights management. Issues will be examined from both the business owner and user perspective.

**BUAN 427. Artificial Intelligence and Machine Learning. 3 Credits.**

This course focuses on applying and programming machine learning algorithms such as artificial intelligence and neural networks, KNN classification, SVM, logistic regression to solve data-intensive business problems. Students will be expected to design and implement a data driven solution to a real-world business problem. Pre-requisites: BUAN/CIS 205, BUAN 227.

**BUAN 440. Big Data Analytics for Business Analytics. 3 Credits.**

This course introduces the student to the fundamental concepts of Big Data management and analytics. This course will examine the challenges faced by applications dealing with very large volumes of data as well as in proposing scalable solutions for them. Modern big data technologies such as current map-reduce and NoSQL platforms will be utilized to solve large business analytics problems. Pre-requisite: BUAN 410 and BUAN 427.

**BUAN 460. Business Analytics Seminar. 3 Credits.**

This course exposes students to evolving techniques and theories on issues of current professional interest in information system development and practice. Topics may include network design and management, software engineering computer and network security, ethical, global and legal issues of information systems. Prerequisite: varies according to topic.

**BUAN 475. Assimilating the Internship Experience in Business Analytics. 3 Credits.**

This course may be used as a second internship experience and/or with senior status. (Free elective).

## Computer Information System Courses

### **CIS 110. Introduction to Information Systems. 3 Credits.**

Critical technologies used to manage information in today's rapidly changing business environment are introduced. Analysis of computer hardware, software, networks, spreadsheets, search engines, database management systems, e-commerce and related ethical issues.

### **CIS 201. Computer Hardware & Software. 3 Credits.**

Introduction to computer architecture and system software. Major topics include basic computer architecture, parallel computing, operating systems design and functionality, and software development. Prerequisite: CIS 110.

### **CIS 205. Introduction to Programming for Business Applications. 3 Credits.**

Introduction to computer programming and data analysis utilizing an object-oriented programming language. Topics include input/output statements, variables, arithmetic and logical operations, decision statements, loop structures, functions, data formats (csv, json, xml), web scraping and libraries for data manipulation/analysis. In this course, problem solving and algorithm development skills will be honed on assignments involving business applications. Pre-requisite: CIS 110.

### **CIS 211. System Administration and Cloud Computing for Business Applications. 3 Credits.**

System administration and the technologies that form the foundation of cloud-based computing. Major topics include the Linux operating system, cybersecurity, virtual machines and containers. Pre-requisite: BUAN/CIS 205.

### **CIS 310. Business Data and Information Management. 3 Credits.**

This course introduces the core concepts of data and information management. It is centered around the core skills of identifying organizational information requirements, modeling them using conceptual data modeling techniques, converting the conceptual data models into relational data models, and implementing the models using a commercial relational database management system. Additional topics include database administration, security, transaction management, distributed databases and SQL programming. Prerequisites: BUAN 205/CIS 205.

### **CIS 316. E-Commerce & Web Development. 3 Credits.**

The course combines basic ideas and concepts in e-commerce with hands-on work using internet technologies. We will study topics such as electronic commerce business models, Internet and Web technology infrastructure, Web site development and management, payment systems and security. You will build dynamic web sites using HTML, PHP and SQL, and also work on a significant project. Prerequisite: BUAN/CIS 205.

### **CIS 317. Principles Data Visualization. 3 Credits.**

This course introduces the core concepts, principles and technologies that are utilized to visualize data. Students will learn about the different dimensions of data, how different types of data are encoded and how to analyze, summarize and visualize data. Spreadsheet-based and web-based visualization tools will be utilized throughout the course. Prerequisites: BUAN 227, BUAN 205/CIS 205.

**CIS 326. Networks, Telecommunications and Global Communications. 3 Credits.**

An introduction to computer networking and telecommunications. Major topics include networking and telecommunications fundamentals, LANs, wireless communication, the Internet, standards, and protocols. Prerequisite: CIS 201 and CIS 205/BUAN 205.

**CIS 375. Assimilating the Internship Experience in Computer Information Systems. 3 Credits.**

In consultation with the faculty advisor, students design and complete an independent project related to their CIS internship. This project aids in assimilating a practical off-campus work experience in business, industry, government or cultural organization with the students' studies and/or career interests. This course is subject to the approval of the Department Chair, Dean and Internship Coordinator of the School of Business. The student is required to pre-register with the Internship Coordinator and to obtain internship placement prior to the start of the semester. (Free/business elective).

**CIS 426. Network Management. 3 Credits.**

An introduction to a broad spectrum of network, system and applications management. Students will gain theoretical and practical knowledge of network and system architectures such as TMN, protocols such as SNMP, information modeling, and NM applications such as Configuration, Fault, and Performance management. Prerequisite: CIS 326.

**CIS 427. Artificial Intelligence and Machine Learning. 3 Credits.**

This course focuses on applying and programming machine learning algorithms such as artificial intelligence and neural networks, KNN classification, SVM, logistic regression to solve data-intensive business problems. Students will be expected to design and implement a data driven solution to a real-world business problem. Pre-requisites: BUAN/ CIS 205, BUAN 227.

**CIS 431. Analysis, Design, and Implementation of Information Systems. 3 Credits.**

A study of the development of information systems from initiation to design, including requirement analysis and reviews. A phased approach and structured analysis methodologies are emphasized. Prerequisite: BUAN 205/CIS 205, BUAN 310/CIS 310.

**CIS 460. Computer Information Systems Seminar. 3 Credits.**

This course exposes students to evolving techniques and theories on issues of current professional interest in information system development and practice. Topics may include network design and management, software engineering computer and network security, ethical, global, and legal issues of information systems. Prerequisite: varies according to topic.

**CIS 470. Computer Information Systems Tutorial/Independent Study. 3 Credits.**

A program of supervised reading and research under the direction of a member of the Department. Topics and methods of research are to be developed in consultation with the supervising professor. Open to qualified students who meet the departmental requirements and have the approval of the Department Chair and the Dean. Prerequisite: CIS 310.

**CIS 475. Assimilating the Internship Experience in Information Systems. 3 Credits.**

This course may be used as a second internship experience and/or with senior status. (Free/business elective).

## Law Courses Courses

### **LAW 203. Business Law I. 3 Credits.**

Studies the impact of law on the business environment. Topics include the nature and sources of law, ethics, court systems, crimes, torts, intellectual property, contracts, agency and the forms of business organizations. Prerequisite: at least sophomore standing.

### **LAW 304. Business Law II. 3 Credits.**

This is the second half of a two semester course exploring the legal environment of business. Topics include personal property and bailments, real property, landlord and tenant, wills, trusts and estates, corporations, securities regulation, consumer protection, employment law, sales and negotiable instruments. Spring. Prerequisite: LAW 203, at least Junior standing.

### **LAW 375. Assimilating the Internship Experience in Law. 3 Credits.**

In consultation with the faculty advisor, students design and complete an independent project related to their Law internship. This course is subject to the approval of the Department Chair, Dean and Internship Coordinator of the School of Business. The student is required to pre-register with the Internship Coordinator and to obtain internship placement prior to the start of the semester. (Free/business elective).



# Economics & Finance

Dr. Kudret Topyan  
Chair of the Department

The Department of Economics and Finance offers a broad choice of courses and majors in Economics, Finance, as well as a double major in Finance and Economics. The aims of the department are (1) to prepare students for careers in business, government, and not-for-profit organizations; (2) to provide an intellectual and professional basis for informed participation in contemporary society; and (3) to develop competent and well-trained students in the disciplines of Economics and Finance.

Every major in the department must consult with the Chair concerning the fulfillment of the requirements for the major and the electives that will be most suitable for his/her particular professional and academic development. Students planning to pursue graduate studies and quantitatively oriented jobs in economics or finance are strongly advised to pursue a minor in mathematics and a minor in business analytics.

## Economics

### Major

Students enrolled in the O'Malley School of Business who wish to pursue a major in Economics without a concentration must take:

ECON 301	Intermediate Price Analysis	3
ECON 302	Intermediate Macroeconomics	3
ECON 334	International Economics	3
ECON 433	Econometrics	3
Any three approved ECON electives		9
Total Credits		21

Students enrolled in the School of Arts who wish to pursue a major in Economics without a concentration must take:

MATH 153	Linear Mathematical Analysis	3
MATH 154	Calculus for Business Decisions	3
BUAN 227	Business Statistics	3
ECON 203	Microeconomics	3
or ECON 150	Roots: Economics	
ECON 204	Macroeconomics	3
ECON 301	Intermediate Price Analysis	3
ECON 302	Intermediate Macroeconomics	3
ECON 305	Money and Banking	3
ECON 334	International Economics	3
ECON 433	Econometrics	3

Any three approved ECON electives	9
Total Credits	39

**The department offers three concentrations:** Quantitative Economics, Applied Economics, and Environmental Economics. For each concentration, students are required to take three elective courses from the lists below.

### I. Quantitative Economics

ECON 303	Mathematical Economics	3
ECON 401	Advanced Microeconomics	3
ECON 402	Seminar in Macroeconomics and Financial Markets	3
ECON 403	Seminar in Monetary Theory and Policy	3
ECON 434	Advanced Econometrics	3

### II. Applied Economics

ECON 332	Introduction to Environmental Economics	3
ECON 405	Labor Economics	3
ECON 412	Economic Growth and Development	3
ECON 445	The Economics of Public Issues	3
Or an ECON elective approved by the Department		3

### III. Environmental Economics

ECON 332	Introduction to Environmental Economics	3
ECON 432	Applied Environmental Economics	3
POSC 223	Environmental Politics	3
Or an ECON elective approved by the Department		3

A minimum grade of C is necessary to receive major credit.

Students majoring in Economics are encouraged to complete a business internship. Students can complete an approved internship experience for academic credit. Free Elective credit may be used to complete ECON 375 Assimilating the Internship Experience in Economics. Interested students must consult with the Assistant Dean for Career Development for guidance on the process of securing an appropriate internship and obtaining the required faculty sponsorship. Faculty supervisors will define appropriate academic activities in parallel to work requirements in order to provide a complete internship experience. Credit-bearing internships must be approved by the Department Chair, Dean, and Assistant Dean for Career Development.

### First Year

Fall	Credits	Spring	Credits
ECON 203 *		3 ECON 204 *	3
MATH 153 or 185		3 MATH 154 or 186	3
ENGL 110		3 ENGL 211	3
CIS 110		3 RELS 110	3

MGMT 201 or MKTG 201	3 MKTG 201 or MGMT 201	3
	15	15

**Second Year**

Fall	Credits	Spring	Credits
SOC 201		3 FIN 301	3
BUAN 227		3 ECON 305	3
ACCT 201*		3 ACCT 202*	3
PSYC 203		3 LAW 203	3
ENGL Elective		3 PHIL 201	3
	15		15

**Third Year**

Fall	Credits	Spring	Credits
ECON 302*		3 ECON 301*	3
ECON 433		3 ECON 334	3
MGMT 307		3 Economics Elective	3
Liberal Arts Elective		3 RELS Contemporary	3
RELS Catholic Studies		3 History Elective	3
	15		15

**Fourth Year**

Fall	Credits	Spring	Credits
Economics Elective		3 Economics Elective	3
MGMT 406 or 430		3 MGMT 430 or 406	3
Free Elective		3 Free Elective	3
SCI Elective		3 SCI Elective	3
Liberal Arts Elective		3 Liberal Arts Elective	3
	15		15

Total Credits: 120

\* Courses must be taken in sequence

**Minor**Students in the O'Malley School of Business who wish to minor in Economics must take:

ECON 301	Intermediate Price Analysis	3
ECON 302	Intermediate Macroeconomics	3
One approved ECON elective		3
Total Credits		9

Students who are in schools other than the school of business and who wish to pursue a minor in Economics must take:

ECON 203	Microeconomics	3
or ECON 150	Roots: Economics	

ECON 204	Macroeconomics	3
Three approved ECON electives		9
Total Credits		15

A minimum grade of C is necessary to receive minor credit.

## Finance

### Requirements for a Major in Finance/CFA Track

The major in Finance is available to O'Malley School of Business students only. Students must take, in addition to the Business Core courses, FIN 308, FIN 320, FIN 340, FIN 416, FIN 436, and two Finance electives. A minimum grade of C is necessary to receive major credit.

Students should complete BUAN 227 and FIN 301 by the end of their sophomore year. Students majoring in Finance can use their free electives (6 credits) to fulfill the requirements for their degree. The Finance degree has been accepted into the CFA Institute University Recognition Program. This status is granted to institutions whose degree program(s) incorporate at least 70% of the CFA Program Candidate Body of Knowledge (CBOK), that provides students with a solid grounding in the CBOK and positions them well to sit for the CFA exams.

FIN 308	Investments	3
FIN 320	Financial Statement Analysis	3
FIN 340	Corp Structure & Financing	3
FIN 416	Options and Futures Markets	3
FIN 436	Multinational Finance	3
Two FIN electives		6
Total Credits		21

A minimum grade of C is necessary to receive major credit.

Students majoring in Finance are encouraged to complete a business internship. Students can complete an approved internship experience for academic credit. Free Elective credit may be used to complete FIN 375 Assimilating the Internship Experience in Finance. Interested students must consult with the Assistant Dean for Career Development for guidance on the process of securing an appropriate internship and obtaining the required faculty sponsorship. Faculty supervisors will define appropriate academic activities in parallel to work requirements in order to provide a complete internship experience. Credit-bearing internships must be approved by the Department Chair, Dean, and Assistant Dean for Career Development.

#### First Year

Fall	Credits	Spring	Credits
ECON 203 *		3 ECON 204 *	3
MATH 153 or 185 *		3 MATH 154 or 186 *	3
ENGL 110		3 ENGL 211	3
CIS 110		3 RELS 110	3

MGMT 201 or MKTG 201		3 MKTG 201 or MGMT 201		3
		15		15
<b>Second Year</b>				
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>		<b>Credits</b>
BUAN 227		3 FIN 301		3
SOC 201		3 ACCT 202*		3
ACCT 201*		3 PHIL 201		3
PSYC 203		3 LAW 203		3
ENGL Elective		3 SCI Elective		3
		15		15
<b>Third Year</b>				
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>		<b>Credits</b>
FIN 308*		3 FIN 340		3
FIN 320		3 FIN 416*		3
ECON 305		3 MGMT 307		3
HIST Elective		3 Free Elective		3
RELS Catholic Studies		3 SCI Elective		3
		15		15
<b>Fourth Year</b>				
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>		<b>Credits</b>
FIN 436		3 RELS Global/Contemporary		3
MGMT 406 or 430		3 Liberal Arts Elective		6
Liberal Arts Elective		3 MGMT 430 or 406		3
Two FIN Electives		6 Free Elective		3
		15		15

Total Credits: 120

\*Courses must be taken in sequence

\*\*Students planning to take the CFA Level 1 exam are strongly encouraged to take FIN 499 (Seminar in Professional Finance). This course provides in-depth coverage of the exam topics and fulfills the finance elective requirement. Full-time students can take FIN 499 as a second finance elective and as a sixth course in the Spring semester of Senior year (carrying a six-course load instead of a five-course load at the same tuition rate).

**Requirements for a Minor in Finance**

Students who are in Schools other than Business may pursue a Minor in Finance. Students must obtain the permission of the School in which they are enrolled. To Minor in Finance a student must complete the following fifteen credits:

ACCT 201	Principles of Accounting I	3
BUAN 227	Business Statistics	3
ECON 305	Money and Banking	3
FIN 301	Principles of Business Finance	3

FIN 308	Investments	3
Total Credits		15

Students in the O'Malley School of Business who wish to Minor in Finance must complete the following, in addition to the core courses required of all students in Business:

FIN 308	Investments	3
FIN 320	Financial Statement Analysis	3
FIN 340	Corp Structure & Financing	3
Total Credits		9

A minimum grade of C is necessary to receive minor credit.

## Requirements for a Double Major in Finance and Economics/CFA Track

The double major in Finance and Economics is designed to thoroughly ground students in the relationship between Economics and Finance and how the two disciplines prepare them for the analysis of the economy in general and the actions of companies and the financial markets in particular. Emphasis is placed on the economic environment in which companies operate and the reaction and values assigned by the asset markets.

The interaction between fiscal policy, monetary policy, corporate strategies, and market valuations are examined to provide a comprehensive understanding of the relationship between the real and financial economies. The Double Major in Economics and Finance has been accepted into the CFA Institute University Recognition Program. This status is granted to institutions whose degree program(s) incorporate at least 70% of the CFA Program Candidate Body of Knowledge (CBOK), which provide students with a solid grounding in the CBOK and positions them well to sit for the CFA exams.

Required and elective courses will parallel the material necessary to prepare students for the first part of the CFA exam, which can be taken after undergraduate studies are complete.

**The double major in Finance and Economics is available to O'Malley School of Business students only.** Students must take:

FIN 308	Investments	3
FIN 320	Financial Statement Analysis	3
FIN 340	Corp Structure & Financing	3
FIN 416	Options and Futures Markets	3
FIN 436	Multinational Finance	3
Two FIN electives		6
ECON 301	Intermediate Price Analysis	3
ECON 302	Intermediate Macroeconomics	3
ECON 334	International Economics	3
ECON 433	Econometrics	3
Two ECON electives		6
Total Credits		39

A minimum grade of C is necessary to receive major credit. Students are required to complete BUAN 227 Business Statistics and FIN 301 Principles of Business Finance by the end of their sophomore year. Students majoring in Finance and Business Economics can use free electives (6 credits) to fulfill the requirements for their degree. In addition, Intermediate Microeconomics (ECON 301 Intermediate Price Analysis) and Intermediate Macroeconomics (ECON 302 Intermediate Macroeconomics) can be used as two liberal arts elective courses.

If a student is interested in preparing for the CFA exam, we strongly encourage them to take FIN 499.

### First Year

Fall	Credits	Spring	Credits
ECON 203 *		3 ECON 204 *	3
MATH 153 or 185		3 MATH 154 or 186	3
ENGL 110		3 RELS 110	3
CIS 110		3 ENGL 211	3
MGMT 201 or MKTG 201		3 MKTG 201 or MGMT 201	3
	15		15

### Second Year

Fall	Credits	Spring	Credits
BUAN 227		3 FIN 301	3
ACCT 201 *		3 ACCT 202 *	3
MGMT 201 or MKTG 201		3 ECON 305	3
SOC 201		3 LAW 203	3
ENGL Elective		3 PHIL 201	3
PSYC 203		3	
	18		15

### Third Year

Fall	Credits	Spring	Credits
FIN 308 *		3 FIN 340	3
FIN 320		3 FIN 416 *	3
ECON 302		3 ECON 301	3
FIN Elective		3 ECON 334	3
RELS Catholic Studies		3 MGMT 307	3
	15		15

### Fourth Year

Fall	Credits	Spring	Credits
FIN 436		3 MGMT 430	3
ECON 433 *		3 PHIL 201	3
MGMT 406 or 430		3 FIN Elective **	3
Two ECON Electives		6 RELS Global/Contemporary	3

Science Elective	3 HIST Elective	3
	18	15

Total Credits: 126

\*Courses must be taken in sequence

\*\*Students planning to take the CFA Level 1 exam are strongly encouraged to take FIN 499 (Seminar in Professional Finance). This course provides in-depth coverage of the exam topics and fulfills the finance elective requirement. Full-time students can take FIN 499 as a second finance elective and as a sixth course in the Spring semester of Senior year (carrying a six-course load instead of a five-course load at the same tuition rate).

## Courses

### Economics Courses

#### **ECON 150. Roots: Economics. 3 Credits.**

An explanation and critical examination of selected concepts in the social sciences. Students examine the logic and methods of social science research and engage in analysis of contemporary social issues from the perspective of the discipline of economics. The main emphasis of the course is to study the behavior of households and business firms in the marketplace. ECON 150 or ECON 203 is the prerequisite for ECON 204.

#### **ECON 203. Microeconomics. 3 Credits.**

An introductory study of the behavior of households and business firms in the marketplace, including households as consumers and resource suppliers, business firms as producers of goods and services and buyers of resources, market structures for outputs and inputs, role of the government, and free trade vs. protection.

#### **ECON 204. Macroeconomics. 3 Credits.**

An introductory study of the determination of the level of production and the price level in the macro economy. Topics covered include inflation and unemployment, money and banks, federal budget and national debt, monetary and fiscal policy, and economic growth and development.

#### **ECON 301. Intermediate Price Analysis. 3 Credits.**

Market and factor pricing under pure competition, imperfect competition conditions and monopoly; the pricing process and the allocation of resources. Prerequisites: ECON 203, ECON 204, BUAN 227.

#### **ECON 302. Intermediate Macroeconomics. 3 Credits.**

The nature and causes of unemployment and inflation and the debate over the policies used to fight these problems in a global economy. Prerequisites: ECON 203, ECON 204, BUAN 227.

#### **ECON 303. Mathematical Economics. 3 Credits.**

A course that applies linear algebra, calculus, and unconstrained and constrained optimization techniques to solve economic problems and perform economic analysis. Topics covered include equilibrium analysis, comparative static analysis, and optimization. Prerequisite: MATH 153 and MATH 154.



**ECON 305. Money and Banking. 3 Credits.**

This course considers the nature of money, the markets that allocate money to a variety of uses, the institutions that create and control the money stock, the flow of money and how it is related to employment levels, GDP, inflation and interest rates, and international financial matters. Much attention will be paid to problems and issues requiring the attention of policymakers. Prerequisites: ECON 203, ECON 204.

**ECON 332. Introduction to Environmental Economics. 3 Credits.**

An introductory study of the way economists approach environmental problems. Topics covered include externalities, market failure, public goods, common-pool resources, policy instruments (e.g. taxes, command and control policies, cap and trade, and tradable pollution permits, and cost-benefit analysis. Prerequisites: ECON 203 and MATH 154.

**ECON 334. International Economics. 3 Credits.**

A study of international trade and financial relationships. Topics covered include theory of international trade, public and private barriers to trade, commercial policy of the U.S., regional economic integration, foreign exchange markets, balance of payments, disequilibrium and the adjustment process, international monetary systems, and economic development of the developing nations. Prerequisites: ECON 203 and ECON 204, and by permission of instructor.

**ECON 375. Assimilating the Internship Experience in Economics.. 3 Credits.**

In consultation with the faculty advisor, students design and complete an independent project related to their Economics internship. This project aids in assimilating a practical off-campus work experience in business, industry, government or cultural organization with the students' studies and/or career interests. This course is subject to the approval of the Department Chair, Dean and Internship Coordinator of the School of Business. The student is required to pre-register with the Internship Coordinator and to obtain internship placement prior to the start of the semester. (Free elective).

**ECON 401. Advanced Microeconomics. 3 Credits.**

The course will focus on the analytical tools of modern microeconomics – especially game theory and information economics – and will apply these tools to economics problems such as imperfect competition, auctions, bargaining, price discrimination, moral hazard and adverse selection. Prerequisite: ECON 301.

**ECON 402. Seminar in Macroeconomics and Financial Markets. 3 Credits.**

Advanced topics in macroeconomics and financial market will be discussed. Emphasis will be placed on a theoretical understanding and the applications to forecasting cyclical and dynamic movements in the economy. Prerequisites: ECON 203 or ECON 150 or ECON 204, and ECON 302.

**ECON 403. Seminar in Monetary Theory and Policy. 3 Credits.**

Econ 403 is designed as a survey of modern monetary policies and theories. The primary objective of the course is to examine how unconventional monetary phenomena and policies are determined, and how they impact the domestic and foreign economies. The course will also provide rigorous training for the College Federal Reserve Challenge Competition. This competition is designed to bring real-world economics into the classroom - student teams assume the role of monetary policymakers by analyzing economic conditions and recommending a course for monetary policy. Prerequisite: ECON 302.

**ECON 405. Labor Economics. 3 Credits.**

A study of the labor market, employment and wage determination; theories that explain wage differentials and unemployment; and alternative policies that can reduce labor market problems. Prerequisites: ECON 203, ECON 204, BUAN 227 or by permission of instructor.

**ECON 412. Economic Growth and Development. 3 Credits.**

This course offers a broad overview of the economic problems that developing countries face along with policies to mitigate these issues. Topics may include poverty, inequality, institutional breakdowns, failures in education and health care systems, environmental degradation, the international trade regime, and financial crises. Prerequisites: ECON 203 or ECON 150 and ECON 204 or by permission of instructor.

**ECON 432. Applied Environmental Economics. 3 Credits.**

A study of the applications of economic theory and econometric methods to analyze environmental problems and to value environmental improvements. Topics include: game theory, behavioral economics experiments focused on common resources, public goods, and nudges, as well as revealed and stated preference methods and applications to value improvements to the environment. Prerequisites: ECON 203 and BUAN 227.

**ECON 433. Econometrics. 3 Credits.**

A systematic attempt of setting theoretical hypotheses about economic reality against empirical evidence produced by real-world situations and problems. Emphasis is on the process and application of statistical inference through the use of various distributions and on the estimation and measurement of relationships among economic variables. Prerequisites: ECON 203, ECON 204 and BUAN 227 or its equivalent.

**ECON 434. Advanced Econometrics. 3 Credits.**

Advanced Econometrics: It is the second of a two-course sequence that introduces the student to econometric analysis. EC444 focuses on Gauss Markov Theorem and its classical assumptions which guarantee that the OLS is the optimal estimator of the classical linear regression model. The course delves deeper into the consequences associated with violating the classical OLS assumptions and how to detect and correct for them. Course topics include the different functional forms of regression models, dummy variable regression models, multicollinearity, heteroscedasticity, autocorrelation, model specification and diagnostic testing, simultaneous-equation models, and identification problem. Prerequisites: ECON 433.

**ECON 441. Economics Seminar. 3 Credits.**

A program of supervised research and reading related to a theme or topic of economics. Open to a limited number of students majoring in economics or finance who meet the departmental requirements and have the approval of the Chair of the Department. Open to economics and finance majors only.

**ECON 444. Special Topic: in Economics. 3 Credits.****ECON 445. The Economics of Public Issues. 3 Credits.**

A study of the economics of contemporary public and social issues. Using micro- and macro-economic analysis, the course analyzes specific issues and events of inherently economic nature as well as issues and events of controversial and seemingly non-economic nature. It also examines policy alternatives and outcomes in the context of each issue. Topics include the economics of government spending and regulation, the environment, use of natural resources, health care and aging, education, crime, drug and alcohol use, sex and race discrimination, immigration, organ sale, property rights, poverty, global affairs, and others. Prerequisites: ECON 203 or ECON 150 and ECON 204 and BUAN 227.

**ECON 470. Economics Tutorial/Independent Study. 3 Credits.**

A single-semester tutorial course, related to a particular topic of economics, directed by a faculty member from the department. Open to qualified students who meet the departmental requirements and have the approval of the Department Chair and the Dean.

**ECON 471. Economics Thesis Project I. 3 Credits.**

An in-depth program of research, under the direction of a member of the department (mentor), leading to a comprehensive research proposal which includes a topic, a review of the literature, the research methodology, sources of data and potential results. Open to qualified students who meet the departmental requirements and have the approval of the Department Chair and the Dean.

**ECON 472. Economics Thesis Project II. 3 Credits.**

An in-depth program of research, under the direction of a member of the department (mentor), leading to a completion of the research project proposed in ECON 471 Thesis Project I. A defense of the thesis is required. Prerequisite: ECON 471 Thesis Project I.

**ECON 475. Assimilating the Internship Experience in Economics. 3 Credits.**

This course may be used as a second internship experience and/or with senior status. (Free elective).

## **Finance Courses**

**FIN 301. Principles of Business Finance. 3 Credits.**

An overview of modern finance concepts and a survey of fundamental issues. Topics include basic finance terminology, time value of money, basic financial statement analysis, the structure and functions of financial markets and institutions, bond and stock valuation, and elementary capital budgeting. Prerequisites: ECON 203, ECON 204, and ACCT 201.

**FIN 303. Quantitative Methods for Finance. 3 Credits.**

This course provides an introduction to the mathematical tools needed to improve the students understanding of finance and economics theory. This course will introduce you to the basic quantitative methods used in investment, portfolio management as well as the pricing of financial securities. By the end of this course, you are expected to be able to solve intermediate finance problems using Excel.' course prerequisite Fin 301.

**FIN 308. Investments. 3 Credits.**

An introduction to the markets and instruments in investments including equity and debt securities, mutual funds, and basic derivatives including options and futures contracts as well as the principles governing the selection and management of portfolios of financial assets. Prerequisites: ECON 203, ECON 204, FIN 301, and BUAN 227.

**FIN 309. Real Estate Investment. 3 Credits.**

This course offers a thorough study of the fields of real estate investment and finance. It covers the basics of real estate investment analysis, mortgage concepts, and the financing of residential and commercial properties. The topics include an overview of the major types of valuation models and approaches used for analyzing the primary categories of real properties. Alternative types of mortgages are also discussed. The course emphasizes the ways in which financing and investments in real properties are similar to a range of financial assets. It integrates real estate finance topics and builds its methodology on a modern corporate finance and investment framework. Prerequisite: FIN 301.

**FIN 320. Financial Statement Analysis. 3 Credits.**

This course covers financial reporting analysis for security valuation. It discusses the investment environment and the use of financial statements in valuation models, analyzes information contained in the four financial statements and provides guidelines for forecasting future financial statements for valuation. Prerequisites: ACCT 202 and FIN 301.

**FIN 340. Corp Structure & Financing. 3 Credits.**

A survey of the different types of capital structures and the various ways they are financed. Topics include strategic decisions concerning financial leverage, the corporation's attempts to maximize its value, dividend policies, leasing, raising of debt and equity, refunding operations, investment banking techniques, mergers and acquisitions, and bankruptcy. Prerequisites: FIN 301, BUAN 227.

**FIN 370. Insurance and Risk Management. 3 Credits.**

This course examines the many sources of risk faced by individuals and firms and how risk can best be managed. Personal and business insurance are key tools in how we respond to risk. This course begins with the basic principles of risk management and continues by examining the major forms of insurance and risk management programs. Insurance delivery systems and company operations are also surveyed. Other topics covered are legal principles as they relate to insurance, government regulation, and insurance contracts. In this introductory course, students will become familiar with a number of risk management concepts and applications, including life and health plans and personal and commercial policies. Prerequisite: FIN 308.

**FIN 375. Assimilating the Internship Experience in Finance. 3 Credits.**

In consultation with the faculty advisor, students design and complete an independent project related to their Finance internship. This project aids in assimilating a practical off-campus work experience in business, industry, government or cultural organization with the students' studies and/or career interests. This course is subject to the approval of the Department Chair, Dean, and Internship Coordinator of the School of Business. The student is required to pre-register with the Internship Coordinator and to obtain internship placement prior to the start of the semester. (Free elective).

**FIN 380. Applied Portfolio Management. 3 Credits.**

This course provides a perspective on the portfolio management process. Students will learn how to apply portfolio theory for the evaluation of performance and learn how to optimally balance risk against performance. Students will apply the concepts examined in class by actively managing a simulated portfolio. Their investment ideas, goals and portfolio performance will be presented to the class in the form of a semester-long project. The course also discusses the investment management industry structure, including organizations, products and policies. Prerequisite: FIN 308.

**FIN 390. Real Estate Development. 3 Credits.**

This course offers a thorough study of real estate development, finance and investment. It offers a step-by-step analysis of the phases used in the real estate development process, including conceptualization, site acquisition, zoning and permits, planning and design, the construction process, budgeting, financing, and financial reporting and evaluation. It includes an overview of the major types of valuation methods and approaches used for analyzing the main categories of real properties. Leadership, management, and control of the development team are also featured topics. Prerequisite: FIN 301.

**FIN 402. Seminar in Macroeconomics and Financial Markets. 3 Credits.**

Advanced topics in macroeconomics and financial market will be discussed. Emphasis will be placed on a theoretical understanding and the applications to forecasting cyclical and dynamic movements in the economy. Prerequisites: ECON 305 or ECON 302.

**FIN 408. Financial Intermediaries. 3 Credits.**

This course provides an understanding of the operation of commercial banks, thrifts, insurance companies, investment banks, brokers, investment companies, credit unions and pension funds. Attention will be given to current trends and policy issues in the financial services industry. Prerequisites: FIN 301.

**FIN 416. Options and Futures Markets. 3 Credits.**

Analysis of the nature and use of derivative securities in general, and options, futures, and swap contracts in particular. Topics include market institutions and trading practices, valuation models, and hedging and risk management techniques. Prerequisites: FIN 301, FIN 308.

**FIN 436. Multinational Finance. 3 Credits.**

An exploration and analysis of the behavior of multinational firms. Topics covered include the nature and mechanics of the foreign exchange market, impact and management of foreign exchange risk, foreign project evaluation, direct and portfolio investments, accounting exposures, balance of payments and trade accounts, and the legal and political risks and constraints surrounding multinational corporations. Prerequisite: FIN 301.

**FIN 440. Advanced Topic in Finance. 3 Credits.**

Select treatment of current topics in finance including financial engineering, behavior of the financial markets, the crises among financial institutions, changing financial environment, and the development of new financial products by non-banks and securities firms. Prerequisites: FIN 301, FIN 308.

**FIN 441. Finance Seminar. 3 Credits.**

A program of supervised research and reading related to a theme or topic of finance. Open to a limited number of students majoring in economics or finance who meet the departmental requirements and have the approval of the Chair of the Department. Open to economics and finance majors only.

**FIN 442. Financial Modeling. 3 Credits.**

This course provides an understanding of the statistical analysis and financial modeling in the fields of investment and computational finance. Topics include regression analysis, constrained and unconstrained optimization, Capital Asset Pricing Model, and models assessing efficiency in the foreign exchange market. Prerequisites: FIN 301 and BUAN 227.

**FIN 444. Special Topic: in Finance. 3 Credits.****FIN 470. Finance Independent Study. 3 Credits.**

A single-semester tutorial course, related to a particular topic of finance, directed by a faculty member from the department. Open to qualified students who meet the departmental requirements and have the approval of the Department Chair and the Dean.

**FIN 471. Finance Thesis Project I. 3 Credits.**

An in-depth program of research, under the direction of a member of the department (mentor), leading to a comprehensive research proposal which includes a topic, a review of the literature, the research methodology, sources of data and potential results. Open to qualified students who meet the departmental requirements and have the approval of the Department Chair and the Dean.

**FIN 472. Finance Thesis Project II. 3 Credits.**

An in-depth program of research, under the direction of a member of the department (mentor), leading to a completion of the research project proposed in FIN 471 Thesis Project I. A public defense of the thesis is required. Prerequisite: FIN 471 Thesis Project I.

**FIN 475. Assimilating the Internship Experience in Finance. 3 Credits.**

This course may be used as a second internship experience and/or with senior status. (Free elective).

**FIN 496. Summer Research. 0 Credits.****FIN 499. Seminar in Professional Finance. 3 Credits.**

The seminar will serve as a review of the fundamental concepts of economic and financial analysis and how they apply to everyday business decisions and strategies. The course also will serve as a recap of topics from previous course work as general preparation for Part 1 of the CFA exam that students may take at some future point after graduation.

# Global Business Studies

Dr. Grishma Shah  
Director of the Program

The Global Business Studies program seeks to provide a global and multi-disciplinary perspective on the economic, social, cultural, ecological and technological elements (at both the micro and macro levels) of a globally integrated economy. The Global Business Co-Major complements functional and technical skills with a global mindset, vital to ethical, well-balanced decisions making and conscious leadership. The cornerstone of inclusive globalization is a conscious decision maker well aware of international development, economics, environmental sustainability, geo-politics, and global inequities. Students interested in pursuing a career in the international arena of business and/or inclined towards a global perspective will find the Global Business Co-Major beneficial.

The Global Business Studies co-major option requires that students choose a primary major in a Business discipline (e.g., Marketing, Management, Finance, Economics, Computer Information Systems, Business Analytics). Global Business Studies is a second major (and not intended to be a standalone major).

Proficiency in a foreign language is strongly recommended.

## Co-Major

### Global Business Studies

Students in the O'Malley School of Business who wish to pursue a co-major in Global Business Studies must take:

MGMT 309	Management of International Business	3
GLBL 414	International Field Study Seminar	3
(or other approved international immersion experience)		
Total Credits		6

One additional (3 credit) course from the following:

ECON 334	International Economics	3
ECON 412	Economic Growth and Development	3
FIN 436	Multinational Finance	3
GLBL 470	Independent Study: International Business	3
MKTG 412	International Marketing	3
MGMT 300 or 400 level approved course with an international component		3

Two additional (6 credits) interdisciplinary electives from the following:

COMM 371	Intercultural Communication	3
INTL 201	Global Issues	3
INTL 310	Technology and Society	3
INTL 312	Ethnicity in the Modern World	3
INTL 315	Special Topics: Area Studies	3

POSC 205	Political Geography	3
POSC 209	Comparative Politics	3
POSC 223	Environmental Politics	3
POSC 251	Global Issues	3
POSC 254	Global Cities	3
POSC 343	Government and Politics of the Middle East	3
POSC 351	International Relations	3
POSC 357	United States Foreign Policy	3
SOC 212	Migration, Globalization, and Culture	3
SOC 329	Political Economy of Global Migration	3

Total Credits for Co-Major

**15**

## Minor

### Global Business Studies

Students in the O'Malley School of Business who wish to minor in Global Business Studies must take:

MGMT 309	Management of International Business	3
GLBL 414	International Field Study Seminar	3
(or other approved international immersion experience)		

Students must also take one of the following course elective options:

ECON 334	International Economics	3
ECON 412	Economic Growth and Development	3
FIN 436	Multinational Finance	3
GLBL 470	Independent Study: International Business	3
MGMT 309	Management of International Business	3
MKTG 412	International Marketing	3
MGMT 300 or 400 level approved course with an international component		3

Total Credits for Minor:

**9**

## Courses

### **GLBL 414. International Field Study Seminar. 3 Credits.**

A program designed to access the impact of the foreign environment on the international firm. Seminars will be conducted at home and abroad. Students will visit selected companies in a foreign country in January. (Participants are responsible for the cost of travel, lodging, meals and miscellaneous expenses.) Open to students approved by the instructor.



**GLBL 470. Independent Study: International Business. 3 Credits.**

A program of supervised reading and research under the direction of a member of the Department. Topics and methods of research are to be developed in consultation with the supervising professor. Open to qualified students who meet the departmental requirements and have the approval of the Department Chair and the Dean.

# Management & Marketing

Dr. Poonam Arora  
Chair of the Department

The Department of Management and Marketing offers a broad choice of courses and two distinct majors: Management and Marketing.

The management program examines theories and concepts of organizations, describes the skills used by managers in fulfilling their roles and functions, provides an opportunity for students to apply quantitative methods to solve management problems, and seeks to arouse interest in management as a growing field.

The major emphasis is on behavioral aspects of organizations and administrative actions in both business and nonprofit organizations. Special attention is given to the social responsibilities of the business executive and the role of the modern corporation in society. Students also learn to master the latest technologies, which allows them to graduate with a functional knowledge of the tools that will be used in their careers. Students can complete a general Management major or concentrate either in (a) Talent Management or (b) Behavior and Decision Making.

Marketing represents a key function and managerial philosophy of contemporary organizations. It is essential for the effective managing of both for profit and nonprofit organizations. Marketing involves creating products and services, communicating their value, and managing customer relationships based on a thorough understanding of customers' needs and wants. The tasks of marketing managers include determining the firm's competitive market position and strategy and formulating the optimum marketing mix: the product portfolio, communication, pricing and distribution strategies.

The Marketing program emphasizes a managerial approach and is designed to train marketing professionals who are globally-oriented business leaders. The curriculum stresses analysis, creativity, critical thinking and decision making in the marketing process.

## Management

### Major

Requirements for a major in Management include the following:

MGMT 309	Management of International Business	3
MGMT 315	Human Behavior in the Organization	3
MGMT 320	Talent Management & Acquisition	3
MGMT 314 or MGMT 450 or approved Decision Making Elective		3
9 credits of electives from the following courses:		9
MGMT 305	Managerial Planning and Decision Making	
MGMT 303	Managing Greed and Fear	
MGMT 314	Applied Management Science	
MGMT 321	Career Management	
MGMT 441	Small Business Management Seminar	

MGMT 450	Negotiation & Conflict Mgmt	
MGMT 460	Special Topics in Management	
MGMT 461	Entrepreneurship	
MGMT 462	Managing a Diverse Workforce	
MGMT 463	Contemporary Topics & Issues in Human Resource Management	
Approved Business or MGMT Elective		
Total Credits		21

A minimum grade of C is necessary to receive major credit.

Students majoring in Management are encouraged to complete a business internship. Students can complete an approved internship experience for academic credit. Free or Business Elective credit may be used to complete MGMT 375 Assimilating the Internship Experience in Management. Interested students must consult with the Assistant Dean for Career Development for guidance on the process of securing an appropriate internship and obtaining the required faculty sponsorship. Faculty supervisors will define appropriate academic activities in parallel to the work requirement in order to provide a complete internship experience. Credit bearing internships must be approved by the Assistant Dean for Career Development, Department Chair, and Dean.

### First Year

Fall	Credits	Spring	Credits
RELS 110 or ENGL 110		3 ENGL 110 or RELS 110	3
ECON 203 or ACCT 201		3 ECON 204 or ACCT 202	3
CIS 110 or PSYC 203		3 PSYC 203 or CIS 110	3
MGMT 201 or MKTG 201		3 MKTG 201 or MGMT 201	3
MATH 153		3 MATH 154	3
	15		15

### Second Year

Fall	Credits	Spring	Credits
ACCT 201 or ECON 203		3 ACCT 202 or ECON 204	3
SCI Elective		3 SCI Elective	3
HIST Elective or LAW 203		3 LAW 203 or HIST Elective	3
PHIL 201 or SOC 201		3 SOC 201 or PHIL 201	3
ENGL 211 or BUAN 227		3 BUAN 227 or ENGL 211	3
	15		15

### Third Year

Fall	Credits	Spring	Credits
Free Elective		3 Free Elective	3
RELS 2xx or ENGL Elective		3 ENGL Elective or RELS 2xx	3
MGMT 315 or 320		3 MGMT 320 or 315	3
MGMT 307 or FIN 301		3 FIN 301 or MGMT 307	3

ECON 305 or MGMT Elective	3 MGMT Elective or ECON 305	3
	15	15

**Fourth Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
Business or MGMT Elective		3 MGMT Elective	3
MGMT Elective or MGMT 309		3 MGMT 309 or MGMT Elective	3
MGMT 406 or 430		3 MGMT 430 or 406	3
RELS 3xx		3 Liberal Arts Elective	3
Liberal Arts Elective		3 Liberal Arts Elective	3
	15		15

Total Credits: 120

**Concentrations**

The department offers two concentrations within the Management Major. Students are required to declare their concentration and then fulfill the requirements as shown below. A minimum grade of C is necessary to obtain Concentration credit.

**1. Talent Management**

- MGMT 320 Talent Management and Acquisition
- MGMT 463 Contemporary Topics and Issues in HRM

At least one course from the following:

- MGMT 462 Managing a Diverse Workforce
- MGMT 321 Career Management
- MGMT 450 Negotiation and Conflict Management

**2. Behavior and Decision Making**

- MGMT 315 Human Behavior in the Organization

At least two courses from the following:

- MGMT 305 Managerial Planning and Decision Making
- MGMT 303 Managing Fear and Greed
- MGMT 450 Negotiation and Conflict Management
- MGMT 314 Applied Management Science

**Minor**

Requirements for a minor in Management: Students who are in Schools other than Business may pursue a minor in Management. Students must obtain the permission of the School in which they are enrolled. To minor in Management a student must complete 15 credits in Management including: MGMT 201 Introduction to Management, MGMT 309 Management of International Business, MGMT 315 Human Behavior in the Organization, and 2 additional Management courses. Students in the School of Business who wish to minor in Management must take MGMT 315 Human Behavior in the Organization, MGMT 309 Management of International Business or

MGMT 320 Talent Management & Acquisition, and one management elective. A minimum grade of C is necessary to obtain Minor credit.

**Requirements for the Business core**

The Management program offers core courses required of all Business students. All students are required to take the following:

MGMT 201	Introduction to Management	3
MGMT 307	Operations and Quality Management	3
MGMT 406	Strategic Management	3
All students except 5-year Accounting majors are required to take the following:		
MGMT 430	Business, Government, and Society	3

**Marketing**

**Major**

Marketing majors take:

MKTG 303	Marketing Research	3
MKTG 307	Consumer Behavior	3
MKTG 403	Marketing Management	3
MKTG 412	International Marketing	3
Marketing Elective		3
Business Elective		6
Total Credits		21

A minimum grade of C is necessary to receive major credit.

A working set of skills in PowerPoint, a computer-based statistics program, a computer-based marketing survey program, as well as skills in web development will be used in many of the marketing classes.

Students majoring in Marketing are encouraged to complete a business internship. Students can complete an approved internship experience for academic credit. Free or Business Elective credit may be used to complete MKTG 375 Assimilating the Internship Experience in Marketing. Interested students must consult with the Assistant Dean for Career Development for guidance on the process of securing an appropriate internship and obtaining the required faculty sponsorship. Faculty supervisors will define appropriate academic activities in parallel to the work requirement in order to provide a complete internship experience. Credit bearing internships must be approved by the Assistant Dean for Career Development, Department Chair, and Dean.

**First Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
ECON 203 or ACCT 201		3 ECON 204 or ACCT 202	3
RELS 110 or ENGL 110		3 ENGL 110 or RELS 110	3
PSYC 203 or CIS 110		3 CIS 110 or PSYC 203	3

MGMT 201 or MKTG 201	3 MKTG 201 or MGMT 201	3
MATH 153	3 MATH 154	3
	15	15

**Second Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
ACCT 201 or ECON 203		3 ACCT 202 or ECON 204	3
SCI Elective		3 SCI Elective	3
ENGL 211 or BUAN 227		3 BUAN 227 or ENGL 211	3
PHIL 201 or SOC 201		3 SOC 201 or PHIL 201	3
LAW 203 or HIST Elective		3 HIST Elective or Law 203	3
	15		15

Total Credits: 60

**Third Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
MGMT 307 or FIN 301		3 FIN 301 or MGMT 307	3
ENGL Elective or RELS Catholic Studies		3 RELS Catholic Studies or ENGL Elective	3
MKTG 303 or 307		3 MKTG 307 or 303	3
ECON 305 (or MKTG Elective)		3 MKTG Elective or ECON 305	3
Free Elective		3 Free Elective	3
	15		15

Total Credits: 30

**Fourth Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
MKTG 412 or 403		3 MKTG 403 or 412	3
Business elective		3 Business elective	3
MGMT 406 or 430		3 MGMT 430 or 460	3
RELS Global/Contemporary Studies		3 Liberal Arts elective	6
Liberal Arts elective	3		
	15		15

Total Credits: 30

Total Credits: 120

**Minor**

Requirements for a minor in Marketing: Students who are in Schools other than Business may pursue a minor in Marketing. Students must obtain the permission of the School in which they are enrolled. To minor in Marketing a student must complete 15 credits in Marketing including: MKTG 201 Essentials of Marketing, MKTG 307 Consumer Behavior and 3 additional Marketing courses. Students in the School of Business who wish to minor in Marketing must take MKTG 307 Consumer Behavior and 6 approved credits in addition

to the core courses required of all students. A minimum grade of C is necessary to obtain Minor credit.

## Requirements for the Business core

The Marketing program offers a core course required of all Business students. All students are required to take MKTG 201 Essentials of Marketing.

## Management Courses

### **MGMT 201. Introduction to Management. 3 Credits.**

Develops understanding of management from historical, behavioral, theoretical and practical perspectives. Through a critical assessment of the classical and alternative approaches to the discipline, the student learns the essentials of leadership of contemporary enterprises in a global environment. Moreover, the student experiences a pragmatic employment of relevant communication skills both within and outside the classroom.

### **MGMT 302. Working with Businesses in Nicaragua. 3 Credits.**

Students have the opportunity to work in Nicaragua with micro-entrepreneurs who run very small businesses, usually employing only one or two people and offering basic goods and services. Located in a part of the world where formal jobs are scarce, micro-businesses make up most of the economy and provide livelihoods for the people who own them. Students will help owners acquire and apply an understanding of business principles so that they can run more successful businesses. At the heart of the course is a 10-day visit in which students will work as part of a small team with a micro-business in Leon, Nicaragua. Students will stay with a family and experience the culture personally. In preparation for the visit, students will be given readings and participate in online learning on business principles.

### **MGMT 303. Managing Greed and Fear. 3 Credits.**

Rational and irrational behavior can lead to success and destruction when it comes to decision-making. The world of trading seems attractive and lucrative and while many believe that they can “beat the markets”, few believe that this can be done unless more risk is employed. In fact, many lose funds and end up blaming the market for substantial losses, but few understand how they work. Research has shown that the markets react to a number of different data points (e.g. earnings, interest rate announcements, economic data to name a few) however, most fail to realize that there are certain price targets that are magnets to heavy trading activity based on chart reading. This form of technical analysis employs the psychology of support and resistance pricing (i.e. fear and greed). While greed gives people hope in generating more income beyond their wildest dreams, the risks involved are enormous and the trades often result in failure. On the other hand, the fear of losing, keeps many out of trading various asset classes. Few understand the concept of inflation and how using “safe asset classes” are still losses (due to purchasing power) albeit smaller ones. This course will provide students with insight into how people behave irrationally and how they can avoid making similar mistakes.

**MGMT 305. Managerial Planning and Decision Making. 3 Credits.**

Examination of major decisional areas with respect to establishment of goals and the determination of strategies. The dynamic conditions of uncertainty and risk characterizing the environment of modern organizations-both profit and non-profit. Critical evaluation of applicable concepts such as, optimization, decision rules, feedback, and cybernetics. Spring. Prerequisite: MGMT 201 and BUAN 227.

**MGMT 307. Operations and Quality Management. 3 Credits.**

A study of the managerial functions involved in operations and quality management. Application of management and decision support quantitative techniques including PERT, CPM, linear programming, inventory control and scheduling systems, work standards, and quality control. Integration and use of modern computer software for controlling business operations within a context that includes total quality management requirements. Prerequisites: MGMT 201, BUAN 227.

**MGMT 309. Management of International Business. 3 Credits.**

The objective of this course is to develop an understanding of the management issues associated with the development, environment, operations and growth of multinational enterprises. The impacts of various aspects of international business are examined from the perspective of the firm, the home and host countries. Prerequisite: MGMT 201.

**MGMT 314. Applied Management Science. 3 Credits.**

An introduction to Management Science and Operations Research in the context of Business applications, including but not limited to Supplier Selection, Product Portfolio, Transportation Problem, Shortest Path, as well as Cost Minimization and Profit Maximization. Methodologies introduced in the course include Linear Programming Modeling, Integer Programming Modeling, Network Models, Solution Methods to Linear Programming Problems, Sensitivity Analysis, Multicriteria Decision-Making, and Dynamic Programming. Pre-requisites: MGMT201, MGMT307.

**MGMT 315. Human Behavior in the Organization. 3 Credits.**

Individual and social behavioral processes and their relevance to managers. Behavioral sciences concepts and techniques for maximizing both the contribution of human resources toward organizational goals and the personal growth and fulfillment of organizational personnel. Prerequisite: MGMT 201.

**MGMT 320. Talent Management & Acquisition. 3 Credits.**

The study of current human resource management practices and principles in the areas of equal employment opportunity, strategic human resource planning, selection, performance evaluation, training and development, compensation, health and safety, and labor relations. Prerequisite: MGMT 201.

**MGMT 321. Career Management. 3 Credits.**

This course is designed to develop skills in managing one's own career and facilitating the careers of subordinates. Topics include the changing nature of careers; career exploration and planning; career paths, stages and transitions over the life span; and work-life management issues over the life span. The course includes an experiential element of career self-management. Students will use self-assessment techniques to develop career goals and plans that consider the work-life issues they will encounter during their life spans.



**MGMT 375. Assimilating the Internship Experience in Management. 3 Credits.**

In consultation with the faculty advisor, students design and complete an independent project related to their Management internship. This project aids in assimilating the practical off-campus work experience in business, industry, government or cultural organization with the students' studies and/or career interests. This course is subject to the approval of the Department Chair, Dean and Internship Coordinator of the School of Business. The student is required to pre-register with the Internship Coordinator and to obtain internship placement prior to the start of the semester. (Free/business elective).

**MGMT 406. Strategic Management. 3 Credits.**

An inter-disciplinary capstone course focusing on how managers analyze key environmental forces and then formulate, implement and evaluate strategies. Student use tools and techniques from Finance, Marketing, Production and Human Resources to devise future plans for companies. Various normative strategic planning models are considered and assessed. Small businesses, profit and non-profit firms, and multinational corporations are featured in case studies. Prerequisite: Business Seniors only.

**MGMT 430. Business, Government, and Society. 3 Credits.**

Examines interactions between business, government and society in a changing global economy. Analyzes the role of government as an arbiter between business practices and society's expectations and values. From the perspective of the firm, addresses corporate responsiveness to public concerns, business ethics and public issues management. Considers government regulation of product safety and quality; environmental protection and resource conservation; workforce diversity; workplace health and safety; and international trade and competitiveness. Prerequisite: Business Seniors only.

**MGMT 441. Small Business Management Seminar. 3 Credits.**

Analysis of management of small business enterprises from feasibility to survival. Attention is given to the concept of entrepreneurship as well as to developing consulting skills. Through field work, in cooperation with governmental and non-profit organizations, student counseling teams provide assistance to the small business community under faculty supervision. Spring. Prerequisite: Business Seniors only (or by permission of the instructor).

**MGMT 450. Negotiation & Conflict Mgmt. 3 Credits.**

The aim of this course is to improve students' skills in all phases of negotiation including managing intra- and inter-group relations, integrative and distributive approaches; making choices in response to ethical issues; and negotiating in a variety of contexts, including multilateral negotiations and negotiating with the assistance of a third party. In-class exercises, cases and negotiations designed to engage a variety of bargaining processes in the contexts of deal making and dispute resolution will be utilized. Prerequisite: MGMT 201, Senior or MBA status required.

**MGMT 460. Special Topics in Management. 3 Credits.**

A program of supervised research and readings on problems of interest to the students. Open to a limited number of students who meet the departmental requirements and have the approval of the Chair of the Department.

**MGMT 461. Entrepreneurship. 3 Credits.**

This course is designed for those individuals interested in creating a new business venture, acquiring an existing business, starting a social enterprise, or working in industries(e.g., banking) that serve the entrepreneur, or students who simply wish to familiarize themselves with the concepts, issues and techniques of new venture creation and entrepreneurship. Prerequisite: MGMT 201.

**MGMT 462. Managing a Diverse Workforce. 3 Credits.**

This course will provide a foundation for understanding diversity in the workplace and the personal and managerial implications of working in a diverse organizational environment. We will examine demographic trends in the workforce, assess cultural practices and values among diverse groups, and explore such constructs as stereotyping, prejudice, discrimination, social identity, power and privilege. Prerequisite: MGMT 201.

**MGMT 463. Contemporary Topics & Issues in Human Resource Management. 3 Credits.**

This course consists of supervised research and readings on special topics in human resource management. Students will learn about the challenges facing employers and employees as they strive to create productive workplaces in which high levels of personal and organizational success are achieved. Students will be exposed to current issues in the major areas of human resources, including, but not limited to, strategic HR management, the legal environment, acquisition & preparation of human resources, assessment & development, and compensation & benefits. Each topic discussed will allow students to understand different points of view. Prerequisites: MGMT 201.

**MGMT 470. Management Independent Study. 3 Credits.**

Please see academic advisor or department chair for details.

**MGMT 475. Assimilating the Internship Experience in Management. 3 Credits.**

This course may be used as a second internship experience and/or with senior status. (Free/business elective).

## Marketing Courses

**MKTG 201. Essentials of Marketing. 3 Credits.**

This course provides the student with an understanding of modern marketing practice, philosophy, advantage, marketing mix decisions, market segmentation, product positioning and buyer behavior. Computer simulations and cases are used to demonstrate real-life applications.

**MKTG 302. Innovation and Creativity. 3 Credits.**

This course is taught online during the semester. It combines theory, texts, articles and exercises to explore innovation and creativity on a personal level as well as its importance within careers and business.

**MKTG 303. Marketing Research. 3 Credits.**

Develops knowledge and skills in designing research projects; developing experimental designs and research instruments such as interviews, questionnaires, and concept tests; implementing projects; analyzing data; and communicating research results and implications. Prerequisite: MKTG 201, BUAN 227.

**MKTG 305. Direct Response Marketing. 3 Credits.**

The managing of direct response advertising. The course focuses on using customer databases, testing customer response, and measuring efficiency of marketing methods that appeal for action from specified individuals. Prerequisite: MKTG 201.

**MKTG 307. Consumer Behavior. 3 Credits.**

The course focuses on the major theories needed to understand buyer behavior, such as evoked set, brand loyalty, learning and memory functions, motivation, attitudes and attitude change, diffusion of innovations, perception and meaning, lifestyle and personality differences, culture and social class, and family buying influences. Prerequisite: MKTG 201.

**MKTG 308. Sales Management. 3 Credits.**

An introduction to methods of sales management: selection, recruiting, selling strategies, training, territory management, compensation and motivation, and performance review. Prerequisite: MKTG 201.

**MKTG 311. Product Management. 3 Credits.**

A review of the company's product portfolio management, including the task of product positioning, product development, market development, product diversification and alternative strategies associated with the introduction, growth, maturity and decline stages of the the product life cycle. Spring.

**MKTG 315. Retail Management. 3 Credits.**

The study of modern retail practices, e.g. trading area analysis, economic quantity models, atmospherics, non-store retailing, target market selection, and competitive analysis. Prerequisite: MKTG 201.

**MKTG 321. Contemporary Marketing Issues. 3 Credits.**

Major ethical challenges facing marketers today are studied such as negative word-of-mouth, new product failure, consumerism, product liability, deceptive advertising, and other societally oriented issues.

**MKTG 375. Assimilating the Internship Experience in Marketing. 3 Credits.**

In consultation with the faculty advisor, students design and complete an independent project related to their Marketing internship. This project aids in assimilating the practical off-campus work experience in business, industry, government or cultural organization with the students' and/or career interests. This course is subject to the approval of the Department Chair, Dean and Internship Coordinator or the School of Business. The student is required to pre-register with the Internship Coordinator and to obtain internship placement prior to the start of the semester. (Free/business elective).

**MKTG 403. Marketing Management. 3 Credits.**

This capstone course integrates previous marketing courses within a problem-solving framework. Students study marketing issues, strategies, plans, and implementation in a competitive environment. Case analysis is an integral part of the learning experience. Required of senior marketing majors and open to senior marketing minors. Prerequisites: MKTG 201, MKTG 303 and MKTG 307.

**MKTG 404. Advertising and Communication Management. 3 Credits.**

Students learn how marketers communicate to develop brand awareness, image and distinctiveness, encourage buying, behavior and reinforce satisfaction. Promotional campaigns for actual products are created by determining budgets, setting objectives, targeting audiences, developing themes and messages, choosing media and measuring results. Prerequisite: MKTG 201.

**MKTG 412. International Marketing. 3 Credits.**

Selecting and entering global markets, as well as building and protecting market share are viewed in light of significant economic, cultural, and political-legal differences. Prerequisite: MKTG 201.

**MKTG 413. Marketing Honors Seminar. 3 Credits.**

A unique opportunity for students to do research on major marketing issues. Previous seminars have addressed the use of athletes in advertising, the acceptance of marketing activities in non-profit organizations, and consumer knowledge about the potential dangers of artificial sweeteners. Open only to selected students with the approval of the faculty mentor.

**MKTG 421. Contemporary Marketing Issues. 3 Credits.**

This course covers the most recent issues and trends in contemporary marketing. The topics will vary depending on emerging important developments in the market place. Previous topics covered in the course have been social media, digital marketing, branding, green marketing, fashion marketing, and sports marketing.

**MKTG 440. Management & Marketing Databases and Analytics. 3 Credits.**

The two major focuses in the class are Data Mining and Metrics. Database marketing has expanded with the increased availability of sources of consumer information, list creation and newer research methodologies like Clementine and Answer Tree. Data mining methodologies will be used to extract relationships from among the data variables yielding new insights into consumer behavior. Metrics would focus on how companies measure the effectiveness of their communications in the B to B and B to C environment. Focus would be on the variety of measurement tools and their efficacy in the business environment. Prerequisite: MKTG 201, MKTG 303.

**MKTG 470. Marketing Independent Study. 3 Credits.**

Please see academic advisor or department chair for details.

**MKTG 475. Assimilating the Internship Experience in Marketing. 3 Credits.**

This course may be used as a second internship experience and/or with senior status. (free/business elective).

# Education & Health - General Information

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## Historical Note

Teacher preparation began at Manhattan College in the late 1800's. By 1921, the College was offering programs for the preparation of Sisters and Brothers of the Christian Schools. In 1964, a Division of Teacher Preparation was established with responsibility for programs leading to teacher certification and, in 1970, was extended to a School of Education & Health. As of 2001, the School of Education & Health has included Undergraduate Education Programs leading to New York State teaching certification at the Childhood and Adolescent levels as well as a Dual Certification Program in Childhood/ Special Education or Adolescence/ Special Education. Downward extension for certificates in early childhood education, and upward or downward extensions in Middle Childhood Education are also available. In addition, the School offers a Five-Year Program in Childhood Education and Adolescence Education/Special Education leading to a B.S. in Childhood Education or Adolescence Education and an MSED in Special Education with certification in each. Additional undergraduate programs include the Department of Kinesiology which includes Physical Education Teaching, Exercise Science and Public Health, and the Department of Radiologic and Health Professions which includes Radiation Therapy Technology, Nuclear Medicine Technology. Graduate Programs are available in School Counseling, Mental Health Counseling, Marriage and Family Therapy, Special Education, School Building Leadership (SBL), and Special Education and SBL are part of the Education Department. In 2005 and again in 2010, the teacher preparation programs received accreditation from the Teacher Education Accreditation Council (TEAC) and are currently accredited through the Council for the Accreditation of Education Programs, CAEP. Their next accreditation is being pursued through AAQEP, Association for Advancing Quality in Educator Preparation.

## Objectives

In the tradition of Saint John Baptist de La Salle, the "Patron of all Teachers," the School of Education & Health prepares dedicated professionals for careers in teaching and allied health services. A strong liberal arts and sciences education emphasizes effective communication, scientific literacy, and multi-cultural awareness. Coursework and practical experiences in Education provide those skills necessary for work in a school or clinical setting. The School seeks to develop broadly educated teachers and health service professionals who possess competencies necessary for certification in their area of study or for graduate study.

The Teacher Preparation Programs at Manhattan College simultaneously meet the requirement of the college for excellence in the Liberal Arts and Sciences, academic concentrations and pedagogy; as well as standards established by New York State for teacher certification. The programs are designed to be consistent with the LaSallian tradition of excellence in teaching, respect for individual dignity, and commitment to social justice principles, on which the college was founded.

The goal of the Education and Health Faculty is the preparation of professional educators who are reflective, scholarly and committed to the education of all learners. Students examine the theoretical foundations of learning and teaching in relation to psychological, philosophical, historical and sociological issues. This theoretical foundation is applied to the practice of teaching and learning as students engage in field-based experiences in the context of a diverse, contemporary educational environment. The total Manhattan College experience is designed to prepare graduates who are self-directed learners, effective teachers, informed professionals and caring human beings committed to the education of all learners.

## Curricula

A strong core of liberal arts and science courses is central to all programs in Education and Health. Each Teacher Preparation Program has three components: the core requirements in the liberal arts and sciences; an academic concentration and the professional education component of the program. Physical Education and Radiological and Health Professions Programs include those courses that provide necessary professional expertise. All students in Education and Health complete a culminating experience of student teaching, professional practicum, or clinical internship in which they are expected to display the ability to apply knowledge gained through previous course work and field experiences. The curricula of the Childhood Education, Adolescent, Dual-Childhood/Adolescence Special Education, and Physical Education Programs are designed for undergraduate students who are pursuing their degrees full-time.

## Advising

Students in the Childhood Education, Adolescence Education, and Dual-Childhood or Adolescence Education/Special Education, and Physical Education Programs have at least two assigned advisors in their Departments: an academic advisor and an education faculty advisor. Students have a third advisor in the content specialization or concentration area (i.e., English, Math). Each student receives a checklist of courses required for graduation based on his/her education program and content specialization.

Students are required to meet with their education faculty advisor to discuss individual academic and professional progress, and course scheduling each semester. Once students have met with and receive the signature of their Faculty Advisor they must then submit their schedule to the Academic Advisor for approval.

While department faculty provide advisement, the student is ultimately responsible for academic and professional decisions. Please note that it is very important for the student to take the recommended number of credits each year in order to avoid an over-charge at a later time. If a student is struggling in a course, it is highly recommended that the student meet with the course instructor and also his/her advisor for support, and avoid having to withdraw from the course.

1. The Educational Faculty Advisor provides guidance through the program and consultation related to professional issues. This may include selecting an academic concentration, identifying appropriate electives or discussing graduate school or employment options. The education advisor is the sole faculty advisor for students who choose a General Studies content specialization.

2. The Academic Advisor for the School of Education & Health oversees course scheduling for registration. The academic advisor also monitors students' compliance with requirements for all undergraduate certification programs, the College's academic standards, and New York State teacher certification.
3. The Content Specialization Faculty Advisor provides guidance to assure that the student takes the required courses in her/his content specialization area and offers assistance in selecting the most appropriate electives for each student. Some Content Specialization advisers also sign the course registration along with the academic advisor for the School of Education & Health.

## **Criteria for Formal Admission into Teacher Education Program**

1. Successfully complete English 110 with a grade of C+ or higher;
2. Successfully complete core Math requirements with grades of "C" or higher;
3. Complete two required Education courses from the following list with grades of C or higher for the two courses (Educ 201, Educ 202, Educ 206, Educ 301 or Educ 318);
4. Have an overall Grade Point Average of 2.75 and a minimum average of 2.5 or higher in the academic concentration(s);
5. Successfully complete Kinesiology 110 with a grade of C or higher;
6. Applicant's disposition assessments will be reviewed, as will faculty comments on Jasper Connect and in the applicant's program folder. In addition, Undergraduate Education faculty will be invited to comment on each applicant's professional dispositions as part of their application.

Students applying for formal admission into teacher education can receive one of three responses:

1. Unconditional admittance into the Program. The student who successfully meets all criteria, is formally admitted into the Program, and may proceed with the program of studies.
2. Conditional admittance into the Program. The student who has met most criteria will be eligible for unconditional admittance by the end of the following semester and may continue and enroll in education courses for that semester. At the end of the conditional semester the student automatically advances to unconditional admittance if all criteria are met. If the conditions are not met, the student will not be allowed to take additional upper division education courses until unconditional status is achieved. The student must reapply if unconditional status is not met by the end of the conditional semester.
3. Denied admittance into the Program. If a student has a number of deficiencies that will take longer than one semester to correct, the application will be denied. The student will not be allowed to continue with education classes until conditional admittance is achieved. When conditional admittance status is achieved the student must meet the criteria listed under conditional admittance. The student in this category must reapply for admission to teacher education when the criteria are met and documented.

*Note: Students who do not achieve unconditional or conditional admittance into the Education Program by the end of the second year may take longer than four years to complete the program. The above criteria are designed for students who indicate their intent to pursue Education when they enter Manhattan College as first-year students and*

*follow the prescribed program. Internal and external transfer students will be evaluated on an individual basis for entrance into the program and must meet all criteria.*

## Requirements for student teaching

To register for student teaching, a student must meet the following School requirements:

1. Enrollment in the School;
2. Cumulative GPA of 2.75 or higher is required;
3. A GPA of 2.75 or higher is also required in Education courses and 2.5 for academic concentration(s) coursework;
4. Senior status required at the time of the student teaching or professional practicum semester;
5. Recommendation of the Chair of the Department or Program Director;
6. Applicant's disposition assessments will be reviewed, as will faculty comments on Jasper Connect and in the applicant's program folder. In addition, Undergraduate Education faculty will be invited to comment on each applicant's professional dispositions as part of their application;
7. The student teaching applicant may not have more than two academic concentration courses and one pedagogical concentration course to complete after student teaching.

*Note. Required exams for New York State teacher certification are: Educating All Students Test, Content Specialty Test, and the edTPA portfolio-assessment. Students also pursuing certification in Students with Disabilities must take a second Content Specialty Test in special education. Students who desire to teach in other states should check with the State Education Department of the specific state in which they want to teach and register for the appropriate State-mandated tests.*

Students already graduated from the School may not register for undergraduate student teaching, professional practicum or clinical internship.

## Teacher Certification

The School of Education & Health has been approved by the New York State Education Department to offer approved programs leading to the initial certificate. Certification can be achieved in the following fields:

Childhood Education, (grades 1-6)

Extension for Early Childhood Education (birth - grade 2)

Childhood Education and Students with Disabilities (grades 1-6)

Adolescence Education, (grades 7-12)

Extension for Middle Childhood (grades 5-9 for Adolescence Education majors; Grades 7-9 for Childhood Education majors)

Adolescence Education and Students with Disabilities (grades 7-12)

Physical Education (grades k-12)



The initial certificate is valid for five years, beginning the first year the individual is employed as a teacher. In order for a student to be recommended by the Dean for initial certification, the following requirements must be met:

1. Completion of all course work ('the approved program') with a cumulative index of 2.75 or higher;
2. A passing grade in all courses;
3. A grade of "C" or higher in all Education and concentration course work; Please note that the cumulative and Education grades GPAs must be at least 2.75;
4. Completion of the New York State Education Department approved program of teacher preparation in the certification area;
5. Successful completion of appropriate New York State Teacher Certification Examinations: EAS, CST (s) and electronic portfolio the edTPA.
6. Completion of the online application for certification and payment of required fees;
7. Recommendation of the Dean of Education, the state certifying officer; and
8. Payment of all outstanding fees owed to the college.

**Note: Candidates for NYS certification are responsible for knowing and meeting NYS requirements related to the specific certification they seek. Any changes in NYS requirements take precedence over those in this catalog.**

## Transfer Students

Students in good academic standing (minimum GPA of 2.75) and possessing a desire for teaching or health services will be accepted for transfer to School of Education & Health Programs from any program in the College after their first semester of study. Only those courses in which the student has received a "C" or higher are transferable.

Transfer students from other accredited colleges who meet the requirements for admission at Manhattan College will be considered for transfer to School of Education & Health Programs. Courses comparable to those required in the School of Education & Health and in which the student achieved a minimum grade of "C" are transferable.

## Education Minor (does not lead to teacher certification)

### Course List

EDUC 201 Principles and Practices of Education	3 Credits
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EDUC 202 Psychology of Adolescent Education	3 Credits
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OR

EDUC 303 Psychology of Childhood Education	3 Credits
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Three courses from the following options:

EDUC 301 Nature and Needs of Students with Disabilities	3 Credits
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EDUC 360 Language and Literacy	3 Credits
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EDUC 402 Reading in the Content Area	3 Credits
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EDUC 406 Social Relations in the Classroom	3 Credits
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Total Credits	15 Credits
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## Enrichment

Students are encouraged to participate in co-curricular activities that enrich their program of study. Co-curricular activities may increase cultural awareness, knowledge in subject content, and skills in communication. Campus activities of a religious, cultural, and academic nature offer opportunities for self-expression such as forums, dramatics, public speaking and publications.

## Honors

Students who maintain a 3.5 or higher index may, after their first semester, be invited to participate in the Honors Program of the Schools of Liberal Arts, Education, and Science. This program offers additional cultural and intellectual experiences to those students demonstrating academic excellence.

In addition to the scholastic honors offered by the College, students in Education are eligible for membership in national honor societies. Students pursuing teacher education are eligible after sophomore year for selection into the Mu Sigma Chapter of Kappa Delta Pi if they meet the criteria established by the society. Students in the Department of Physical Education may be invited to join the Alpha Eta Chapter of Phi Epsilon Kappa during their sophomore year. Students in the Radiological and Health Sciences may qualify for admission to Alpha Beta Gamma after their junior year.

## Job Opportunities for Teacher Education Graduates

According to the National Center for Education Statistics' Predicting the Need for Newly Hired Teachers in the U.S., there is a need for more teachers. The U.S. Department of Education also reports teacher shortages throughout the country.

## Study Abroad

Students interested in studying abroad should discuss their interest with the Academic Advisor by the second semester of freshman year. It is best to plan the semester of study abroad for the second semester of sophomore year or the first semester of junior year. Further information about study abroad opportunities is available through the Study Abroad Office.

## Programs of Study for Childhood, Adolescent, and Dual Childhood/ Special Education

The first year of the program emphasizes courses in the liberal arts and sciences. The remaining three years of each program are arranged by developmental level (childhood or adolescence) according to the subject area the student is preparing to teach. If the student follows his/her prescribed program plan, requirements for graduation and initial teacher certification can be achieved in four years.

## Courses

### **EDUC 201. Principles and Practices of Education. 3 Credits.**

Current issues in education; the process of becoming an educator; historical and philosophical foundations of education; legal and ethical responsibilities of educators, parents, and community; the organization and financing of schools; implications of the multicultural nature of schools; the role of technology in the teaching and learning process; the state of education in the United States and the world, 15 fieldwork hours is required as follows: childhood and dual 15 hours at any level; adolescent 15 hours in a 7-9 classroom. Open only to students matriculated in this school or those who have formally declared a minor in Education.

### **EDUC 202. Psychology of Adolescent Education. 3 Credits.**

This course explores issues in learning and cognition from theoretical and research-based perspectives related to children and adolescents; the social, moral, and emotional development of school-aged children; definitions of intelligence; the influence of culture, race, ethnicity, gender, and socioeconomic status on teaching and learning; the evolution and research foundation of special education; the uses of technology in the learning, teaching, and research processes; and the application of research to the analysis of pedagogical practices and learning. Includes 15 hours of field work experience in a 10-12th grade classroom. Open to Adolescence Education and Physical Education majors, or by permission of the instructor.

### **EDUC 205. Theory and Practice. 3 Credits.**

This course explores the decision to become a teacher; characteristics of effective teachers and the development of a sense of community and respect for one another. Theoretical and technical dimensions of teaching and learning; the complexity of the educational environment; the profession itself, and issues in education. 12 field work hours is required as follows: 6 hours in grades 1-3 and 6 hours in grades 4-6. Open only to Childhood Education majors.

### **EDUC 206. Planning & Assessing for Learning in Secondary Schools. 3 Credits.**

This course focuses on the study of instructional planning and assessment that supports middle and high school students in meeting learning goals by drawing upon knowledge of content areas based on New York State Standards. Participants create sequenced learning experiences that are appropriate for curriculum goals and content standards learning targets, align objectives with developmentally appropriate formative and summative assessments, and design lesson plans and assessments that meet the needs of all learners. Prerequisite: EDUC 201.

### **EDUC 214. Education of the Young Child. 3 Credits.**

This course focuses on the nature and needs of culturally and linguistically diverse young children (birth to eight years). Pertinent legislation, foundations, assessment and curriculum methods will include collaboration with professionals and families. Trends and issues of advocacy will be studied within the context of the continuum of service delivery and developmentally appropriate practice. 50 hours of fieldwork experience are required (Birth - K). Please note that to earn the Early Childhood Extension, the elementary student teaching experience must occur in either a first or second grade classroom.

**EDUC 215. Early Childhood Student Teaching. 3 Credits.**

The early childhood student teaching experience and related seminar provide an opportunity to apply knowledge, skills, and strategies related to teaching and learning in a classroom setting. Each student's field experience is guided by a certified teacher and by a college supervisor. Students will develop teaching competencies while experiencing the personal and professional roles of a teacher. The seminar is an opportunity for students and faculty to discuss current issues and ideas related to early childhood education and to examine the relationship between these ideas and what they are experiencing in the classroom. This course requires 20 full days of student teaching in a Birth - K context. Please note that to earn the Early Childhood Extension, the elementary student teaching experience must occur in either a first or second grade classroom.

**EDUC 300. Fieldwork. 0 Credits.**

Students complete fieldwork experience hours, in which they observe and participate in educational settings with teachers and/or supervisors, and school-age students.

**EDUC 301. Nature and Needs of Students with Disabilities. 3 Credits.**

An overview of historical social and legal foundations of special education. Examination of the etiology and characteristics of individuals with disabilities under Individuals with Disabilities Education Act and from multicultural and multilingual backgrounds. Emphasis on standards for special populations. assistive technology; modification and accommodation of curriculum. interdisciplinary collaboration. educational and vocational programs; placement alternatives; and an exploration of community services which support the students and family. 20 hours of fieldwork experience required in a classroom in grades 1-6 (for Childhood Education majors) or grades 10-12 (for Adolescence Education majors). Prerequisite EDUC 201.

**EDUC 303. Psychology of Childhood Education. 3 Credits.**

This course explores issues in the physical, social, moral, and emotional development of children and adolescents. Emphasis is placed on major theories and research related to understanding normal development, individual differences, and assessment of those differences. Topics include definitions of intelligence; the influence of culture, race, ethnicity, gender, and socioeconomic status on teaching and learning; the evolution and research foundation of special education; the uses of technology in the learning, teaching, and research processes; and the application of research to the analysis of pedagogical practices and learning. Open only to Childhood Education majors, Physical Education majors, or those who have formally declared a minor in education.

**EDUC 311. Teaching and Learning w/ Tech. 3 Credits.**

In this course, students explore various uses of technology in the classroom. Students will gain technical proficiency in using hardware and software commonly found in classrooms today and apply best practices for using these tools effectively to enhance teaching and learning. Students will develop strategies for using technology toward a wide range of teaching practices, including communication, assessment, classroom management, etc. In addition, the design and facilitation of technology-related student-centered projects and learning experiences, will be explored.

**EDUC 318. Curriculum and Pedagogy in the Elementary Classroom. 3 Credits.**

This course focuses on the development and application of skills, strategies, and reflection associated with the art and science of teaching, through an examination of various New York State standards and of the relationship between annual, unit and lesson planning for teaching in the diverse, elementary classroom. Clinical simulations, including videotaping presentations, will be used to develop skills in planning, presenting and assessing learning. Prerequisite: EDUC 201. Co-requisite (only for transfer students).

**EDUC 353. Integrated Learning Grades 1-3. 3 Credits.**

This course examines developmentally appropriate, integrated curriculum for grades 1-3. The course focuses on methods and materials, appropriate practices, strategies for supporting diverse learners and children with special needs, effective techniques for assessing teaching and learning, and the use of technology and computers to enhance learning and instruction. Includes 30 hours of field work experience in a 1st-3rd grade classroom. Prerequisite: EDUC 318.

**EDUC 354. Integrated Learning Grade 4-6. 3 Credits.**

This course examines developmentally appropriate, integrated curriculum for grades 4-6. The course focuses on methods and materials, appropriate practices, strategies for supporting diverse learners and children with special needs, effective techniques for assessing teaching and learning, and the use of technology and computers to enhance learning and instruction. Includes 30 hours of field work experience in a 4th-6th grade classroom. For adolescence education majors seeking the downward extension, field placement must be in a middle school. Prerequisite: EDUC 318 or EDUC 206.

**EDUC 355. Assessment of Learning and Behavior Grades 1-6. 3 Credits.**

Study of standardized, formal, informal, ongoing, and alternative measures used in the assessment of at risk and disabled populations with emphasis on the areas of reading in the content area of social studies. Ways to report and use assessment information is reflected through instructional planning in inclusive and special education classrooms along with strategies to communicate assessment information to parents. 20 hours field work required in a special education setting. Open only to students matriculated in the school of Education.

**EDUC 356. Assessment and Remediation of Math and Science Grades 1-6. 3 Credits.**

This course will focus on management of assessment and instructional skills and competencies needed to provide effective remediation based on information gathered through assessment of students in inclusive special education settings, individually or in groups. Emphasis is on methods and strategies for standards based instruction with a focus in the areas of mathematics, science, and the arts. 20 hours of fieldwork experience required in a special education setting. Open only to students matriculated in this school.

**EDUC 357. Curriculum Adaptation. 3 Credits.**

This course provides students with the opportunity to use information gathered through assessment, adapt instruction and identify appropriate pedagogical strategies for the special education and at-risk students in inclusive and self-contained classrooms. Emphasis is placed on NYS standards for content, Universal Design for Learning, instructional adaptations for individual and group settings, and the use of technology to enhance learning. Open to Childhood Education majors. Prerequisite: Formal admission to student teaching and Senior status.

**EDUC 358. Curriculum Adaptation for Secondary Students with Special Needs. 3 Credits.**

This course is designed to help students enhance their basic understanding of principles and practices related to addressing academic ability and cultural diversity in the classroom. This course will focus on ways to identify and acknowledge student variance, differentiate instruction, create a responsive classroom environment, develop instructional and management strategies and utilize Universal Design for learning in conjunction with state standards. The course will assist pre-service teachers in developing approaches to modify content, process and products of mixed ability classrooms, address the varied readiness and needs of learners through developmentally appropriate practice, and to use technology to enhance learning. This course will emphasize NYS learning standards. 15 hours of fieldwork experience are required in a special education setting. Pre-requisites: Senior status and EDUC 301.

**EDUC 360. Language and Literacy. 3 Credits.**

This course provides an introduction to language acquisition and literacy development by native English speakers and students who are English language learners. Techniques for developing listening, speaking, reading, and writing skills are emphasized. Includes 15 hours of field work experience in a 7-9 classroom. Prerequisites: For Adolescence Education majors: EDUC 206; For Kinesiology Majors: KIN 213 or KIN 305.

**EDUC 375. Theoretical Foundations of Teaching and Learning in the Middle School Grades 7-9. 3 Credits.**

This course studies the physical, cognitive, social and emotional development of the middle school adolescent. Application of diverse instructional strategies including integrated curriculum, interdisciplinary teaching, and teaming of students and teachers. 30 hours field required in middle school. Prerequisites: For Childhood Education program majors seeking upward extension: EDUC 318, EDUC 402, EDUC 354. For Adolescence Education majors seeking downward extension: EDUC 360, EDUC 403.

**EDUC 376. Curriculum and Methods of Teaching English Grades 7-12. 3 Credits.**

This course covers curriculum, methods and materials for effective integration and multidisciplinary approaches for teaching English Language Arts; application of learning theory and the use of developmentally appropriate practices; and strategies for teaching and assessing learning of diverse students. Students will develop English lessons for grades 7-12. For Childhood Education Majors seeking upward extension, 30 fieldwork hours are completed in a middle school setting. For Adolescence Education majors, 30 hours of fieldwork experience are required: 15 hours in a middle school and 15 hours in a secondary school. Prerequisites: For Childhood Education majors: EDUC 354. For Adolescence Education majors: EDUC 206 and EDUC 360.

**EDUC 377. Curriculum and Methods of Teaching Social Studies Grades 7-12. 3 Credits.**

This course covers curriculum, methods and materials for effective integration and multidisciplinary approaches for teaching social studies; application of learning theory and the use of developmentally appropriate practices; and strategies for teaching and assessing learning of diverse students. Students will develop social studies lessons for grades 7-12. For Childhood Education majors seeking upward extension, all fieldwork hours are completed in a middle school setting. For Adolescence Education majors, 30 hours of fieldwork experience are required; 15 hours in a middle school and 15 hours in a secondary school. Prerequisites: For Childhood Education majors: EDUC 354. For Adolescence Education majors: EDUC 206 and EDUC 360.

**EDUC 378. Curriculum and Methods of Teaching Mathematics Grades 7-12. 3 Credits.**

This course covers curriculum, methods and materials for effective integration and multidisciplinary approaches for teaching mathematics; application of learning theory and the use of developmentally appropriate practices; and strategies for teaching and assessing learning of diverse students. Students will develop lessons in mathematics for grades 7-12. For Childhood Education majors seeking upward extension, all fieldwork hours are completed in a middle school setting. For Adolescence Education majors, 30 hours of fieldwork experience are required: 15 hours in a middle school and 15 hours in a secondary school. Prerequisites: for Childhood Education majors: EDUC 354; for Adolescence Education majors: EDUC 206 and EDUC 360.

**EDUC 379. Curriculum and Methods of Teaching Foreign Language Grades 7-12. 3 Credits.**

This course covers curriculum, methods and materials for effective integration and multidisciplinary approaches for teaching foreign language; application of learning theory and the use of developmentally appropriate practices; and strategies for teaching and assessing learning of diverse students. Students will develop lessons in foreign language for grades 7-12. For Childhood Education majors seeking upward extension, all fieldwork hours are completed in a middle school setting. For Adolescence Education majors, 30 hours of fieldwork experience are required: 15 hours in a middle school and 15 hours in a secondary school. Prerequisites: for Childhood Education majors: EDUC 354; for Adolescence Education majors: EDUC 206 and EDUC 360.

**EDUC 380. Curriculum and Methods of Teaching Science Grades 7-12. 3 Credits.**

This course covers curriculum, methods and materials for effective integration and multidisciplinary approaches for teaching science- biology, chemistry, and physics; application of learning theory and the use of developmentally appropriate practices; and strategies for teaching and assessing learning of diverse students. Students will develop science lessons for grades 7-12. For Adolescence Education majors, 30 hours of fieldwork experience are required: 15 hours in a middle school and 15 hours in a secondary school. Prerequisites: EDUC 206 and EDUC 360.

**EDUC 400. Special Topics. 3 Credits.**

An intensive study of a topic relevant to curriculum and pedagogy. The subject to be studied will vary from semester to semester. A student may elect this course as often as twice for college credit, presuming a different topic each time.



**EDUC 401. Principles and Practices of Reading in Elementary School. 3 Credits.**

This course focuses on the principles of development and learning underlying reading instruction as part of the total communication process (listening, speaking, reading and writing). Methods for diverse learners in grades 1-6; materials, testing, procedures and computer applications. 20 hours of field experience required: 10 in grades 1-3, 10 in grades 4-6. Must be taken before Student Teaching.

**EDUC 402. Reading in Content Area. 3 Credits.**

This course focuses on teaching for comprehension in the content areas through reading and writing. Emphasis is placed on methods of teaching vocabulary, comprehension, study skills, and writing. Assessment of individual differences of general and special needs students as a basis for providing appropriate instruction. Includes 10 hours of field work experience.

**EDUC 403. Reading in Content Area Secondary Education. 3 Credits.**

Teaching for critical literacy to construct meaning in the content areas through reading and writing of expository text. Emphasis placed in methods of evaluating and integrating literacy teaching including vocabulary, comprehension, study skills and writing. Assessment of individual differences of general and special needs students as a basis for providing appropriate literacy instruction. 10 hours of field required in grades 7-12. Open to adolescent majors only. Prerequisite: EDUC 376, or 377, or 378, or 379, or 380.

**EDUC 404. Assessment & Remediation for the Secondary Student with Special Needs. 3 Credits.**

This course will consider educational assessment as a process of gathering and analyzing information in order to plan meaningful instruction, to evaluate interventions, to select appropriate learning curricula and materials, and to make appropriate educational decisions for students who are at-risk or disabled primarily in the content areas of language arts and mathematics. Students will utilize standardized format, informal, ongoing and alternative measures used in the assessment of students who are at-risk and disabled, with an emphasis on reading in the content areas of social studies, mathematics and science. Ways to report and use assessment information are reflected through instructional planning in inclusive and special education classrooms along with strategies to communicate assessment information to parents. 20 hours of fieldwork experience will be provided as part of the course. Prerequisite; EDUC 301.

**EDUC 406. Social Relations in the Classroom Social Relations in the Classroom. 3 Credits.**

This course investigates the ways in which racism, sexism, economic injustice, heterosexism, ageism, ableism and other forms of discrimination influence classroom interaction as well as impacting educational access and opportunities for youth. Informed by social justice theory and the Lasallian mission of the College, coursework considers what individuals and communities can do to ensure that all students have equitable access to high quality education. Open only to Education majors or those who have formally declared a minor in Education. Prerequisite: EDUC 201.



**EDUC 408. Management of Behavior and Learning for At-Risk and Disabled. 3 Credits.**

Study of biological, behavioral, psychosocial, humanistic and cognitive approaches to classroom management and instruction; emphasis on the application of strategies and methods for students with behavior and learning problems in the mainstream and special education setting; methods of developing social skills. Services in the school and community that strengthen partnerships with families are examined. (10 hours) Field observation required. Open only to students matriculated in this school, or those who have formally declared a minor in Education. This course satisfies the New York State Dignity for All Students Act (DASA) teacher licensing requirement.

**EDUC 418. Seminar, Observation and Student Teaching in Elementary School, Grades 1-3. 3 Credits.**

Participation in student teaching and seminar in grades 1-3. Students seeking NYS certification in Childhood Education or Childhood Education and Students with Disabilities will be mentored by a college supervisor and cooperating teacher. Taken with EDUC 438 (grades 4-6) or EDUC 446 (special education grades 4-6) for semester-long, full time student teaching. Seminar is in discussion and lecture format, covering special topics related directly to teaching. Resume and interviewing preparation included. Prerequisites: Senior status with a minimum, cumulative GPA of 2.75, a minimum GPA of 2.75 in the education courses and a minimum GPA of 2.5 in area(s) of concentration. Formal admission to student teaching; approval by Chair of Education.

**EDUC 438. Seminar, Observation and Student Teaching in Elementary School, Grades 4-6. 3 Credits.**

Participation in student teaching and seminar in grades 4-6. Students seeking NYS certification in Childhood Education or Childhood Education and Students with Disabilities will be mentored by a college supervisor and cooperating teacher. Taken with EDUC 418 (grades 1-3) or EDUC 444 (special education grades 1-3) for semester-long, full time student teaching. Seminar is in discussion and lecture format, covering special topics related directly to teaching. Resume and interviewing preparation included. Prerequisites: Senior status with a minimum, cumulative GPA of 2.75, a minimum GPA of 2.75 in the education courses and a minimum GPA of 2.5 in area(s) of concentration. Formal admission to student teaching; approval by Chair of Education.

**EDUC 444. Seminar, Observation and Student Teaching in Special Education, Grades 1-3. 3 Credits.**

Participation in student teaching in a special education or inclusive setting and seminar in grades 1-3. Students seeking NYS certification in Childhood Education and Students with Disabilities will be mentored by a college supervisor and cooperating teacher. Taken with EDUC 438 (grades 4-6) for semester-long, full time student teaching. Seminar is in discussion and lecture format, covering special topics related directly to teaching. Resume and interviewing preparation included. Prerequisites: Senior status with a minimum, cumulative GPA of 2.75, a minimum GPA of 2.75 in education courses, and a minimum GPA of 2.5 in area(s) of concentration. Formal admission to student teaching; approval by Chair of Education.

**EDUC 446. Seminar, Observation and Student Teaching in Special Education, Grades 4-6. 3 Credits.**

Participation in student teaching in a special education or inclusive setting and seminar in grades 4-6. Students seeking NYS certification in Childhood Education and Students with Disabilities will be mentored by a college supervisor and cooperating teacher. Taken with EDUC 418 (grades 1-3) for semester-long, full time student teaching. Seminar is in discussion and lecture format, covering special topics related directly to teaching. Resume and interviewing preparation included. Prerequisites: Senior status with a minimum, cumulative GPA of 2.75, a minimum GPA of 2.75 in education courses, and a minimum GPA of 2.5 in area(s) of concentration. Formal admission to student teaching; approval by Chair of Education,.

**EDUC 453. Seminar, Observation and Student Teaching Grades 7-9. 3 Credits.**

Participation in student teaching and seminar in grades 7-9. Students seeking NYS certification in Adolescence Education will be mentored by a college supervisor and cooperating teacher. Taken with EDUC 454 (grades 10-12) or EDUC 456 (special education grades 10-12) for semester-long, full time student teaching. Seminar is in discussion and lecture format, covering special topics related directly to teaching. Resume and interviewing preparation included. Prerequisites: Senior status with a minimum, cumulative GPA of 2.75, a minimum GPA of 2.75 in the education courses and a minimum GPA of 2.5 in area of concentration. Formal admission to student teaching; approval by Chair of Education.

**EDUC 454. Seminar, Observation and Student Teaching Grades 10-12. 3 Credits.**

Participation in student teaching and seminar in grades 10-12. Students seeking NYS certification in Adolescence Education will be mentored by a college supervisor and cooperating teacher. Taken with EDUC 453 (grades 7-9) or EDUC 455 (grades 7-9) for semester-long, full time student teaching. Seminar is in discussion and lecture format, covering special topics related directly to teaching. Resume and interviewing preparation included. Prerequisites: Senior status with a minimum, cumulative GPA of 2.75, a minimum GPA of 2.75 in the education courses and a minimum GPA of 2.5 in area of concentration. Formal admission to student teaching; approval by Chair of Education.

**EDUC 455. Sem: Observation & Practice Tchg. Adol/Sp. Ed.Grades 7-9. 3 Credits.**

Participants in EDUC 455-456 gain adolescent special education experiences and meet specific requirements to acquire proficiency in teaching adolescents with special needs at 7-9 and 10-12 grade levels. The student teacher works formally and informally with the cooperating teacher at a local school and undergoes regular assessment and evaluation. Knowledge gained in prior course work is applied to planning learning experiences, teaching and assessing the secondary school student. Student teachers attend weekly seminars in which they discuss effective communications; classroom management; knowledge of content; professional responsibilities; and meeting the needs of adolescent students with disabilities. Applicants for these courses may not have more than one course each left to complete in their academic and pedagogical concentration and must have satisfactory scholastic background and meet the physical, mental, speech, and language standards established for the profession. Applicants will be expected to show evidence of active participation in professional experiences. Students must file an application with the Chair of Education during their junior year. Prerequisites: 15 credits of education including methods, with a minimum grade of 'C+', senior status. Open only to students matriculated in Education. Minimum 20 full days in grades 7-9.

**EDUC 456. Sem: Observation & Practice Tchg. Adol/Sp.Ed.Grades 10-12. 3 Credits.**

Participation in student teaching in seminar in grades 10-12. Students seeking NYS certification in Adolescence Education will be mentored by a college supervisor and cooperating teacher. Taken with EDUC 453 (grades 7-9) for semester-long, full-time student teaching. Seminar is in discussion and lecture format, covering special topics related directly to teaching. Resume and interviewing preparation included. Prerequisites: Senior status with a minimum, cumulative GPA of 2.75, a minimum GPA of 2.75 in the education courses and a minimum GPA of 2.5 in area of concentration. Formal admission to student teaching; approval by Chair of Education.

# Adolescence Ed Grades 7-12

Dr. Tracy Lahey  
Chair of the Department

## Adolescence Education (Grades 7-12)

All future Adolescence Education teachers are required to successfully complete a concentration of at least 30 credits in one of the following areas: English, modern foreign language (Spanish or French), social studies, mathematics, biology, chemistry or physics.

## Teacher of English (Grades 7-12)

First Year	Credits
EDUC 201	3
EDUC 202	3
ENGL 110	3
KIN 110	3
LANG 1 & LANG 2	6
ENGL Elective	3
RELS 110	3
SCI	3
MATH 151 or 230	3
Social Science (ECON/GOVT/PSYC/SOC)**	3
	<hr/> 33

Second Year	Credits
EDUC 206	3
EDUC 301	3
ENGL 306	3
ENGL Concentration Electives	12
EDUC 360	3
RELS Catholic Studies	3
SCI	3
EDUC 311	3
	<hr/> 33

Third Year	Credits
EDUC 376	3
PHIL Elective	3
EDUC 403	3
ENGL Concentration Electives	12
EDUC 408	3
Fine Arts Elective	3

SPCH 204	3
	30
<b>Fourth Year</b>	<b>Credits</b>
EDUC 406	3
EDUC 453	3
EDUC 454	3
KIN 209	1
RELS Global/Contemporary	3
ENGL 395	3
Electives	9
	25
Total Credits: 121	

\* Not PSYC 345 or 346

### English Concentration Electives:

Three courses (9 credits) at the 300- or 400-level from 'Literary History and National Traditions,' one from each of the three literary periods listed.

One course from three of the remaining four categories (9 credits): 'Theory, Media, and Praxis'; 'Writing'; 'Genre and Author Studies'; and 'Global and Cultural Perspectives'

ENGL 395: Senior Seminar (3 credits): NOT required for Childhood Education concentrators; required for adolescent ED concentrators.

2 additional 300- or 400-level courses (6 credits), including one labeled 'Sophomore/Junior research seminar.'

Total: 30 credits

Additional details about elective options for Education majors will be found in the English section of this catalog.

Show evidence of passing New York State exams (to be determined).

### Teacher of Spanish (Grades 7-12)

<b>First Year</b>	<b>Credits</b>
EDUC 201	3
EDUC 202	3
One of the following:	
SPAN 204 & SPAN 203	6
SPAN 201 & SPAN 202	
KIN 110	3
ENGL 110	3
RELS 110	3

SCI	3
ENGL Elective	3
Social Science (ECON/GOVT/PSYC/SOC)**	3
MATH 151 or 230	3

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 33

### Second Year Credits

EDUC 206	3
EDUC 301	3
EDUC 360	3
SPAN 307	3
SPAN 350	3
2nd LANG	6
SPCH 204	3
SCI	3
RELS Catholic Studies	3
EDUC 311	3

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 33

### Third Year Credits

EDUC 379	3
EDUC 403	3
EDUC 408	3
SPAN 340	3
SPAN 341	3
SPAN Elective 300-400 Level	3
2nd LANG	6
Philosophy Elective	3
SPAN 351	3

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 30

### Fourth Year Credits

EDUC 406	3
EDUC 453	3
EDUC 454	3
SPAN Electives -300-400 Level	6
KIN 209	1
RELS Global/Contemporary	3
Fine Arts Elective	3
Electives*	3

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 25

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 Total Credits: 121

*NOTE: If student places above the 200 level, two additional electives will be selected in consultation with language advisor.*

*Students will not receive credit for more than two 200-level Spanish courses.*

**\*\*Not PSYC 345 or 346**

Show evidence of passing New York State exams (to be determined).

## Teacher of French (Grades 7-12)

First Year	Credits
EDUC 201	3
EDUC 202	3
One of the following:	
FREN 201 & FREN 202 FREN 204 & FREN 203	6
KIN 110	3
ENGL Elective	3
MATH 151 or 230	3
RELS 110	3
SCI	3
ENGL 110	3
Social Science (ECON/GOVT/PSYC/SOC) **	3
	<hr/> 33
Second Year	Credits
EDUC 206	3
EDUC 301	3
EDUC 360	3
FREN 340	3
FREN 350	3
2nd LANG	6
SCI	3
SPCH 204	3
RELS Catholic Studies	3
EDUC 311	3
	<hr/> 33
Third Year	Credits
EDUC 379	3
EDUC 403	3
EDUC 408	3
FREN 307	3

FREN Electives 300-400 Level	9
2nd LANG	6
Philosophy Elective	3
	<hr/> 30

<b>Fourth Year</b>	<b>Credits</b>
EDUC 406	3
EDUC 453	3
EDUC 454	3
FREN Electives 300-400 Level	6
KIN 209	1
RELS Global/Contemporary	3
Fine Arts Elective	3
Elective**	3
	<hr/> 25

Total Credits: 121

*NOTE: \*If student places above the 200 level, two additional electives will be selected in consultation with language advisor.*

*Students will not receive credit for more than two 200-level French courses.*

\*\*Not PSYC 345 or 346

Show evidence of passing New York State exams (to be determined).

## Teacher of Social Studies (Grades 7-12)

<b>First Year</b>	<b>Credits</b>
EDUC 201	3
EDUC 202	3
ENGL 110	3
KIN 110	3
HIST 206 (Fall )	3
HIST 207 (Spring)	3
RELS 110	3
SCI	3
MATH 151 or 230	3
LANG I and 2	6
	<hr/> 33

<b>Second Year</b>	<b>Credits</b>
EDUC 206	3
EDUC 301	3
EDUC 360	3
ECON 204	3
HIST 300 (Fall)	3



HIST 217 (Fall )	3
HIST 218 (Fall and Spring)	3
SOC 201 (Fall )	3
SPCH 204	3
RELS Catholic Studies	3
EDUC 311	3
	<b>33</b>

<b>Third Year</b>	<b>Credits</b>
EDUC 377	3
EDUC 403	3
EDUC 408	3
HIST Elective *	3
HIST Electives (World) *	6
POSC 251 or 205	3
PHIL Elective	3
SCI	3
SOC 302 or 204 (Spring)	3
	<b>30</b>

<b>Fourth Year</b>	<b>Credits</b>
EDUC 406	3
EDUC 453 (Fall) <sup>†</sup>	3
EDUC 454 (Fall) <sup>†</sup>	3
ECON 203	3
Social Science (ECON/GOVT/PSYC/SOC)**	3
POSC 203 <sup>(Fall)</sup>	3
HIST 490 (Spring)	3
RELS Global/Contemporary	3
KIN 209	1
Fine Arts Elective	3
English Elective	3
	<b>31</b>

Total Credits: 127

\* Available History electives include: HIST 225, HIST 240, HIST 242, HIST 306, HIST 312, HIST 313, HIST 314, HIST 318, HIST 328, HIST 330

\*\* Downward extension for grades 5 and 6 requires completion of the following six hours: EDUC 354 *Integrated Learning Grade 4-6 – Integrated Learning Grades 4-6 (30 field hours in grade 5 or 6 classroom)* and EDUC 375 *Theoretical Foundation of Teaching and Learning in the Middle School – Theoretical Foundation of Teaching and Learning in the Middle School (30 field hours in a middle school is required)*.

† It is recommended that student teaching be taken during Fall semester due to the scheduling of HIST 490 *Senior Seminar* in the Spring.

\*\*Not PSYC 345 or 346

Show evidence of passing New York State exams (to be determined).

## Teacher of Mathematics (Grades 7-12)

First Year	Credits
EDUC 201	3
EDUC 202	3
MATH 185	3
MATH 186	3
CMPT 101 (Fall)	3
MATH 158	3
ENGL 110	3
KIN 110	3
LANG	6
RELS 110	3
	<hr/> 33
Second Year	Credits
EDUC 206	3
MATH 361	3
EDUC 301	3
EDUC 360	3
MATH 285 (Fall)	3
MATH 243 (Fall) *	3
MATH 272 (Spring)	3
SCI	3
SPCH 204	3
Social Science (ECON/GOVT/PSYC/SOC) **	3
EDUC 311	3
	<hr/> 33
Third Year	Credits
EDUC 378	3
EDUC 403	3
EDUC 408	3
MATH 377 (Fall)	3
MATH 387 (Spring)	3
MATH 331 (Spring)	3
MATH 432 (Spring)	3
RELS Catholic Studies	3
Philosophy Elective	3
SCI	3
	<hr/> 30

<b>Fourth Year</b>	<b>Credits</b>
EDUC 406	3
EDUC 453	3
EDUC 454	3
MATH 422 (Spring)	3
MATH 489 (Fall)	3
KIN 209	1
ENGL Elective	3
RELS Global/Contemporary	3
Fine Arts Elective	3
	<b>25</b>

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Total Credits: 121

\* *MATH 243 Foundations for Higher Mathematics*

*Student may complete CMPT Sci. minor by taking CMPT 101 Computer Science I, CMPT 102 Computer Science II and 3 additional approved courses. All CMPT electives must be approved by mathematics advisor or chair.*

\*\*Not PSYC 345 or 346

Show evidence of passing New York State exams (to be determined).

## **Five-Year BS-MSED in Adolescence Education Mathematics**

This program is a seamless Five-Year BS-MSED in Adolescence Education Mathematics. Students will complete all requirements for the BS in Adolescence Education - Mathematics in four years leading to initial NYS teaching certification in Adolescence Education - Mathematics. Students begin taking graduate courses in the junior and senior years, enabling completion of the MSED in the fifth year. Graduate courses are designed to give deep understanding of both mathematics and modern pedagogy. At the end of the Five-Year Program, students will have mastery of Mathematics in five key areas: Algebra, Geometry, Data and Statistics, Analysis and Number Theory.

## **Teacher of Biology (Grades 7-12)**

<b>First Year</b>	<b>Credits</b>
EDUC 201	3
BIOL 111 & BIOL 113	4
BIOL 112 & BIOL 114	4
MATH 155	3
MATH 156	3
LANG	6
RELS 110	3
KIN 110	3

ENGL 110	3
<hr/>	
<b>Second Year</b>	<b>Credits</b>
EDUC 206	3
EDUC 202	3
BIOL 217 (& BIOL 218)	4
BIOL 223	4
BIOL 231 (& BIOL 232)	4
CHEM 101	3
CHEM 103	1
CHEM 102	3
CHEM 104	1
RELS Catholic Studies	3
SPCH 204	3
EDUC 311	3
<hr/>	
	35
<b>Third Year</b>	<b>Credits</b>
EDUC 301 or 408*	3
EDUC 360	3
EDUC 380	3
EDUC 403	3
BIOL 225	4
BIOL 301	4
BIOL 302	4
CHEM 319	6
& CHEM 320	
Social Science (ECON/GOVT/PSYC/SOC)**	3
<hr/>	
	33
<b>Fourth Year</b>	<b>Credits</b>
EDUC 406	3
EDUC 453	3
EDUC 454	3
BIOL 319	8
& BIOL 320	
KIN 309	2
ENGL Elective	3
RELS Global/Contemporary	3
PHIL Elective	3
KIN 209	1

Fine Arts Elective	3
	32

Total Credits: 132

\*     *For New York City License you will need to take both courses.*

\*\*Not PSYC 345 or 346

Show evidence of passing New York State exams (to be determined).

## Teacher of Chemistry (Grades 7-12)

First Year	Credits
EDUC 201	3
ENGL 110	3
KIN 110	3
LANG	6
RELS 110	3
MATH 185	3
MATH 186	3
Choose two of the following:	
CHEM 101 & CHEM 103	4
CHEM 102 & CHEM 104	4
CHEM 197	
CHEM 198	
	32
Second Year	Credits
EDUC 202	3
EDUC 206	3
CHEM 319 & CHEM 323	5
CHEM 320 & CHEM 323	5
One of the following:	
PHYS 101 or 107*	4
PHYS 102 or 108	4
SPCH 204	3
RELS Catholic Studies	3
EDUC 311	3
	33
Third Year	Credits
EDUC 301 or 408*	3

EDUC 360	3
EDUC 380	3
EDUC 403	3
CHEM 302	5
CHEM 309	3
CHEM 335	3
CHEM Elective	3
ENGL Elective	3
	<hr/> 29

<b>Fourth Year</b>	<b>Credits</b>
EDUC 406	3
EDUC 453	3
EDUC 454	3
CHEM 310 & CHEM 311	5
PHIL Elective	3
RELS Global/Contemporary	3
KIN 209	1
Fine Arts Elective	3
Social Science (ECON/GOVT/PSYC/SOC)**	3
	<hr/> 27

Total Credits: 121

\* PHYS 101 is taken with PHYS 102 (8 credits). PHYS 107 is taken with PHYS 108 (8 credits).

\*\*Not PSYC 345 or 346

Show evidence of passing New York State exams (to be determined).

## Teacher of Physics (Grades 7-12)

<b>First Year</b>	<b>Credits</b>
EDUC 201	3
LANG	6
MATH 185	3
MATH 186	3
PHYS 101 & PHYS 191	4
KIN 110	3
PHYS 102 & PHYS 192	4
RELS 110	3

ENGL 110	3
<hr/>	
<b>Second Year</b>	<b>Credits</b>
EDUC 202	3
EDUC 206	3
EDUC 311	3
MATH 285	3
MATH 286	3
PHYS 233	3
PHYS 234	3
PHYS 312	3
PHYS 350	3
SPCH 204	3
Social Science (ECON/GOVT/PSYC/SOC)**	3
<hr/>	
	33
<b>Third Year</b>	<b>Credits</b>
EDUC 301 or 408*	3
EDUC 360	3
Religion 200-level	3
EDUC 380	3
CHEM 101	4
& CHEM 103	
CHEM 102	4
& CHEM 104	
PHYS 309	3
PHYS 311	3
PHYS 351	4
& PHYS 352	
Fine Arts Elective	3
<hr/>	
	33
<b>Fourth Year</b>	<b>Credits</b>
EDUC 403	3
EDUC 406	3
EDUC 453	3
EDUC 454	3
PHYS 441	3
PHYS 450	1
PHYS Elective	3
ENGL Elective	3
RELS Catholic Studies & RELS Global/ Contemporary	3

KIN 209

1

26

Total Credits: 124

\* *For New York City License you will need to take both courses.*

\*\*Not PSYC 345 or 346

Show evidence of passing New York State exams (to be determined).

## Dual-Adolescent/Special Education (Grades 7-12)

Dual-Adolescent/Special Education (Grades 7-12) requires students to take EDUC 404 -Assessment and Remediation for secondary students with special needs, EDUC 358 - Curricular adaptation for secondary students with special needs, EDUC 408 - Management of Behavior and Learning, and one student teaching placement in a special education context, grades 7-9 (EDUC 455) or grades 10-12 (EDUC 454).

Students successfully completing all requirements will be recommended for New York State initial certification in adolescent education and special education.

Dual-Adolescent/Special Education majors show evidence of passing New York State exams (to be determined).

Note: This is the general plan for Dual-Adolescent/Special Education, each student receives a specific program plan based on his or her selected academic concentration.

Academic Concentrations available with Dual Certification are the same as listed with Adolescent Education.

## Downward extension (for grades 5 and 6) for English, Social Studies, Math, French or Spanish Concentrations

This extension requires completion of six hours in the following two courses: EDUC 354 (<https://catalog.manhattan.edu/undergraduate/education/>) Integrated Learning Grade 4-6 (30 field hours -in the candidate's content area - in grade 5 or 6 classroom) and EDUC 375 (<https://catalog.manhattan.edu/undergraduate/education/>) Theoretical Foundation of Teaching and Learning in the Middle School(30 field hours in a middle school is required).

Candidates must show evidence of passing New York State exams (to be determined).

## Five Year BS/MS Ed program

This program is designed for the undergraduate student seeking dual certification in Adolescence English or Math or Social Studies and Students with Disabilities Generalist Extensions in English or Math or Social Studies for Grades 7-12.

Students who complete the first semester of sophomore year with a cumulative index of 3.00 or better and grades of B or better in all education courses may apply for admission into the Five Year BS/MS Ed program which leads to dual certification in Adolescence/ Students with Disabilities Generalist 7-12 Ext. English or Math or Social Studies). Upon



satisfactory completion of specific program requirements, and successful completion of the required New York State Teacher Certification Exams: Educating All Students test (EAS), edTPA and required CST exams will be recommended for initial certification in each area.

## **Degree Program (155/158 credits)**

Students complete the required sequence of undergraduate courses during freshman, sophomore, junior and senior year. In the fourth year they are enrolled in four graduate courses. In the Fifth year, students complete 22 graduate credits. Five year participants complete an internship in a Special Education setting full days during the Fall or Spring semester of the fifth year.

### **FOURTH YEAR (12 Graduate Credits)**

EDUG 713 Methods of Educational and Psychological Research 3

EDUG 778 Nature and Needs of the Exceptional Individual 3

Six credits of the following:

EDUG 830 Curriculum Adaptation & Content Strategies for At Risk, (ELL)  
& the Disabled

EDUG 766 Literacy Instruction for At Risk, English Language Learner  
(ELL) and Disabled Student.

EDUG 826 Improvement of Instruction for Teachers of At Risk, English  
Language Learner (ELL) and Disabled

EDUG 815 Curriculum, Assessment and Methods of Teaching English as  
a Second Language in General and Special Education

Total Credits 12

Please see the Graduate Education pages for more information.

*Fourth-year students in the Five-Year Program will be charged full-time undergraduate tuition, which includes payment for graduate courses in the fourth year.*

*Fifth-year students in the Five-Year Program will be charged graduate tuition per credit hour. Fifth year students should be aware that the College does not provide housing for graduate students and that there is very limited financial aid for graduate students.*

# Childhood Ed Grades 1-6

Dr. Tracy Lahey  
Chair of the Department

Students successfully completing all requirements will be recommended for New York State initial certification.

First Year	Credits
MATH 221 (Fall) *	3
ENGL 110	3
HIST 207 or 206 *	3
LANG I and 2	6
KIN 110	3
RELS 110	3
MATH 222 (Spring)	3
SCI 240	3
EDUC 201 (Spring)	3
Social Science (econ/govt./psych/soc)	3
	<hr/> 33

Second Year	Credits
EDUC 301	3
EDUC 311	3
EDUC 318 (Fall)	3
EDUC 353, 401, 402, or 354 (Spring)	3
EDUC 303	3
Concentration	9
BIOL 103 & BIOL 104	3
SCI 242	3
Religion Elective 200 - level	3
	<hr/> 33

Third Year	Credits
EDUC 354	3
Fine Arts Elective	3
EDUC 401	3
EDUC 402	3
EDUC 408	3
Concentration	12
English Elective	3
SPCH 204	3
	<hr/> 33

<b>Fourth Year</b>	<b>Credits</b>
EDUC 357	3
EDUC 406	3
EDUC 418	3
EDUC 438	3
KIN 209	1
RELS Global/Contemporary	3
Concentration	9
	<b>25</b>

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Total Credits: 124

This progression is not applicable to all programs.

## INFORMATION ABOUT CONCENTRATIONS

### BIOLOGY\*

BIOL 111	General Biology I	4
BIOL 113	General Biology I Laboratory	0
BIOL 112	General Biology II	4
BIOL 114	General Biology II Laboratory	0
BIOL 217	Genetics	4
BIOL 225	Microbiology	4
BIOL 301	Comparative Chordate Anatomy	4
BIOL 302	Developmental Biology	4
BIOL 319	Cellular BioChemistry/Physiology	4
KIN 309	Anatomical Kinesiology	2
BIOL 320	Animal Physiology	4
One Biology Elective		3
Total Credits		<b>37</b>

### CHEMISTRY\*

CHEM 101	General Chemistry I	3
CHEM 102	General Chemistry II	3
CHEM 319	Organic Chemistry I	3
CHEM 323	Organic Chemistry Laboratory I	2
CHEM 320	Organic Chemistry II	3
CHEM 324	Organic Chemistry Laboratory II	2
CHEM 302	Analytical Chemistry	5
CHEM 309	Physical Chemistry I	3
CHEM 311	Physical Chemistry Laboratory I	2
CHEM 310	Physical Chemistry II	3
CHEM 335	Inorganic Chemistry	3

MATH 185	Calculus I	3
MATH 186	Calculus II	3
Total Credits		38

**ENGLISH\***

ENGL 306	Introduction to Literary Study (One course from 'Literary History and National Traditions (any period))	3
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**For full concentration (30 credits):**

English Concentration Electives:

Three courses (9 credits) at the 300- or 400-level from 'Literary History and National Traditions,' one from each of the three literary periods listed.

One course from three of the remaining four categories (9 credits): 'Theory, Media, and Praxis'; 'Writing'; 'Genre and Author Studies'; and 'Global and Cultural Perspectives'

3 additional 300- or 400-level courses (9 credits), including one labeled 'Sophomore/Junior research seminar.'

**Total: 30 credits**

**For general studies (15 credits):**

One course from 'Literary History and National Traditions (any period) - 3 credits

Three additional 300- or 400-level courses, from at least two of the remaining categories - 9 credits

**Total: 15 Credits**

Additional details about elective options for Education majors will be found in the English section of this catalog.

**FRENCH\***

Two 200-level courses	6
FREN 301            Advanced French Conversation and Phonetics	3
or FREN 307    Advanced Grammar and Composition	
Five Courses in French at the 300-400 level (Chair approval)	15
Choose two courses from the following: FREN 303, FREN 340, FREN 341, FREN 342, FREN 350, FREN 351	6
30 Credits of French	30

**GENERAL SCIENCE\*\***

BIOL 111	General Biology I	4
BIOL 113	General Biology I Laboratory	0
SCI 201	Introduction Astronomy	3
BIOL 112	General Biology II	4
BIOL 114	General Biology II Laboratory	0

CHEM 101	General Chemistry I	3
CHEM 103	General Chemistry Laboratory I	1
CHEM 102	General Chemistry II	3
CHEM 104	General Chemistry Laboratory II	1
Physics Electives		6
SCI 202	Introduction Geology	3
Science Elective (above 200-level)		6
Total Credits		34

\*\* Upward certification in General Science has additional requirements beyond the six credits required in other areas.

### **MATHEMATICS\***

MATH 321	Fundamental Concepts: Algebra & Number Theory	3
MATH 322	Fundamental Concepts: Geometry & Measurement	3
MATH 326	Fundamental Concepts: Discrete Math	3
MATH 155	Calculus for the Life Sciences I (Take in the fall semester of freshman year.)	3
or MATH 185	Calculus I	
MATH 156	Calculus for the Life Sciences II (Take in the spring semester of freshman year.)	3
or MATH 186	Calculus II	
MATH 243	Foundations for Higher Mathematics	3
MATH 230	Elementary Statistics	3
or MATH 336	Applied Statistics	
MATH 243	Foundations for Higher Mathematics	3
Choose from the following to total 30 hours		
MATH 272	Linear Algebra I	3
MATH 285	Calculus III	3
MATH 286	Differential Equations	3
MATH 331	Probability	3
MATH 361	Introduction to Higher Geometry	3

Students working on this math concentration would take Calculus I and II during their freshman year.

### **PSYCHOLOGY**

PSYC 203	Introduction to Psychology I	3
PSYC 321	Social Psychology	3
PSYC 214	Statistics and Research Methods I	3
PSYC 314	Statistics and Research Methods II	3
PSYC 340	Cognition and Learning (or PSYC 332, Artificial Psychology)	3
PSYC 333	Motivation and Emotion	3

PSYC 421	Abnormal Psychology	3
PSYC 310	Psychology of Developmental Disorders and Delays	3
PSYC Electives *		6

**\*For the PSYC Elective, choose from the**

**following:** PSYC 302, PSYC 343, PSYC 347, PSYC 348, PSYC 316

### **SOCIAL STUDIES\***

HIST 206	United States Through 1876	3
or HIST 207	United States Since 1876	
HIST 217	World History to 1600	3
HIST 218	World History Since 1600	3
One World History Elective		3
Three History Electives		9
Three courses from either ECON, POLITICAL SCIENCE, or SOC		9
Total Credits		30

### **SPANISH\***

Two 200 -level courses		6
SPAN 307	Advanced Grammar and Composition	3
SPAN 340	Spanish Civilization	3
SPAN 341	Spanish American Civilization	3
SPAN 350	Masterworks in Spanish I	3
SPAN 351	Masterworks in Spanish	3
Two courses at the 400-level		6
Spanish Elective (Chair approval)		3
30 Credits of Spanish		30

\* Upward certification (Grade 7-9) is available

## **GENERAL STUDIES**

The General Studies concentration has a total of 30 credits. Students must select TWO areas of concentration and complete 15 credits in EACH area. At least one of the areas (15 credits) must be from list one: English, French, General Science, Mathematics, or Spanish. The other area of concentration (15 credits) can also be from list one or from list two: Political Science, History, Psychology, or Sociology.

### **CONCENTRATION COURSES FOR GENERAL STUDIES**

#### **List One:**

**English includes the following 5 courses:** ENG 306, One course from 'Literary History and National Traditions (any period), one 300- or 400-level course from one of the following categories: 'Theory, Media, and Praxis'; 'Writing'; 'Genre and Author Studies'; and 'Global and Cultural Perspectives', another 300- or 400-level course, from a new

categories: 'Theory, Media, and Praxis'; 'Writing'; 'Genre and Author Studies'; and 'Global and Cultural Perspectives', One 300 or 400-level English course

**French includes the following 5 courses:** Two 200-level courses; Three 300-400 -level courses

**Spanish includes the following 5 courses:** Two 200-level courses; Three 300-400 -level courses

**General Science includes the following 5 courses:** SCI 201, SCI 202, SCI 221, BIO 221 (Nutrition), Science Elective ( Science 210, Science 323)

**Mathematics includes the following 5 courses:** MATH 321, MATH 322, MATH 230, MATH 326, MATH 100/151/155 or 185

### List Two:

**Political Science includes the following 5 courses:** POSC 201, POSC 203, POSC 205, POSC 209, POSC elective

**History includes the following 5 courses:** HIST 206 or HIST 207 (One of these will be applied as a core course.), HIST 217, HIST 218, HIST Elective (HIST 100 or a 200-level courses), HIST Elective (HIST 100 or a 200-level courses)

**Psychology includes the following 5 courses:** PSYC 203, PSYC 333 OR PSYC 340, two courses (6 credits) from the following: PSYC 214, PSYC 321, PSYC 421, PSYC 310, PSYC 333, PSYC 340, PSYC 347, and a free PSYC elective (3 credits), *not allowed: PSYC 345, 346, 334, 314, or 414.*

**Sociology includes the following options for the 5 courses:**

**Option 1:** Five (5) courses: SOC 201 and four (4) electives from the following options: SOC 204, SOC 209, SOC 210, SOC 302, SOC 304, SOC 308, SOC 313 and SOC 338

**Option 2:** Five (5) courses: SOC 201, two (2) courses chosen from SOC 204, SOC 209, SOC 210, and two (2) courses chosen from SOC 302, SOC 304, SOC 308, SOC 313, and SOC 338

## EXTENSIONS

### Early childhood extension (birth through grade two)

This extension requires an additional six hours earned in the following courses: EDUC 214 - Curriculum & Methods for Early Childhood Education (50 field hours required) and EDUC 215 - Internship (20 full days of field required). Please note that these hours must be evenly split between the different levels of early childhood education. In addition, one student teaching placement must be in a grade 1 or 2 classroom setting.

### Upward extension

This extension requires an additional six hours earned in the following courses: Education 376-380 – Curriculum and Methods of Teaching in Grades 7-9. (30 field hours -in the candidate's concentration area- in a middle school is required) and Education 375 – Theoretical Foundation of Teaching and Learning in the Middle School (30 field hours in a middle school is required).

*Please note that to obtain teaching certification for Grades 7-9, candidates must take an additional content specialty in an appropriate subject.*

## **Dual-Childhood/Special Education (Grades 1-6)**

Dual-Childhood/Special Education (Grades 1-6) requires students to take EDUC 355 - Assessment of Learning Behavior, EDUC 356 - Remediation of Learning Problems, EDUC 408 - Management of Behavior and Learning, and one student teaching placement in a special education context, grades 1-3 (EDUC 444) or grades 4-6 (EDUC 446).

Students successfully completing all requirements will be recommended for New York State initial certification in childhood education and special education.

*Dual-Childhood/Special Education majors show evidence of passing New York State exams (to be determined).*

*Note: This is the general plan for Dual-Childhood/Special Education, each student receives a specific program plan based on his or her selected academic concentration.*

*Academic Concentrations available with Dual Certification are the same as listed with Childhood Education.*

## **Five-Year: Childhood/Special Education (Grades 1-6) (BS/MSED)**

### **Dual Certification Childhood Education/Students with Disabilities - Grades 1-6**

This Five Year program is designed for the undergraduate student seeking dual certification for Childhood/Students with Disabilities Grades 1-6.

Students who complete the first semester of sophomore year with a cumulative index of 3.00 or better and grades of B or better in all Education courses may apply for admission into the five year BS/MS Ed program which leads to dual certification in Childhood Education/Students with Disabilities (Grades 1-6). Upon satisfactory completion of specific program requirements, and successful completion of the New York State Educating All Students test (EAS), edTPA and required CST exams, students will be recommended for initial certification.

### **Degree Program (151/152 credits)**

Students complete the required sequence of undergraduate courses during freshman, sophomore, junior and senior year. In the fourth year they are enrolled in four graduate courses. In the Fifth year, students complete 22 graduate credits. Five year participants complete an internship in a Special Education setting full days during the Fall or Spring semester of the fifth year. Twelve credits need to be completed in a content area that covers Math, Science, Social Studies and Language Arts. Six credits of these content required courses may be taken in the Fourth Year.

### **FOURTH Year - GRADUATE COURSES (12 Credits)**

EDUG 713 Methods of Educational and Psychological Research 3



**EDUG 778 Nature and Needs of the Exceptional Individual 3**

Two Content Courses from the list below. You must cover each of the four content areas: Social Studies, Language Arts, Math, Science (Choose one to take in your Fourth Year) 3

**EDUG 785 Life Science for At Risk, English Language Learner (ELL) and Disabled Student (Grades K-8)**

**EDUG 768 Integrated Curriculum: Math, Science & Technology I for the At Risk, ELL and Disabled Student K-8**

**EDUG 775 Mathematics Instruction for At Risk, English Language Learner (ELL) and Disabled (Grades K-8)**

**EDUG 812 Integrated Curriculum II: Math, Sci & Tech for At Risk ELL and Disabled (Grades K-8)**

**EDUG 899 Physical Science for the Teacher of the At Risk and Disabled (Grades K-8)**

**EDUG 776 Science Instruction for the At Risk, English Language Learner [ELL] and Disabled**

One of the following Social Studies or Language Arts Content courses: 3

**EDUG 753 Teaching Reading in Content Areas for At Risk, English Language Learner (ELL) & Disabled (Grades K-12) (Social Studies and Language Arts Courses (Choose one to take in the Fourth Year))**

**EDUG 815 Curriculum, Assessment and Methods of Teaching English as a Second Language in General and Special Education**

**EDUG 754 Literature for the At Risk, (ELL) and Disabled (Grades K-8)**

**EDUG 766 Literacy Instruction for At Risk, English Language Learner (ELL) and Disabled Student.**

**EDUG 805 Integrated Learning I: Social Studies & Language Arts Instruction for the At Risk, ELL & Disabled Student**

**EDUG 808 Integrated Learning II: Social Studies & Language Arts Instruction for the At Risk, ELL & Disabled Student**

**Total Credits 12**

Please see the Graduate Education pages for more information.

*Five-Year Childhood/Special Education majors show evidence of passing New York State exams (to be determined).*

*Note: This is the general plan for Five-Year: Childhood/Special Education, each student receives a specific program plan based on his/her selected academic concentration.*

*Academic Concentrations available with the Five-Year Program are the same as listed with Childhood Education.*

*Fourth-year students in the Five-Year Program will be charged full-time undergraduate tuition, which includes payment for graduate courses in the fourth year.*

*Fifth-year students in the Five-Year Program will be charged graduate tuition per credit hour. Fifth year students should be aware that the College does not provide housing for graduate students and that there is very limited financial aid for graduate students.*

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# Kinesiology

Dr. Jeff Cherubini  
Chair of the Department

Dr. Tekeyah Sears  
Program Director - Public Health

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## The Kinesiology Curriculum

### Physical Education, Exercise Science, and Public Health

Emphasizing the positive impact of physical activity on health, society, and quality of life, the mission of the Department of Kinesiology is to create and disseminate knowledge, engage in community service, and prepare caring and competent physical education, exercise science, and public health professionals. Putting theory into practice, all students in the department gain real-world understanding through a variety of service, research, practicum, internship and student-teaching experiences. With this, every effort is made in the professional courses to correlate the theory of general education as it applies to the Physical Education Teacher K-12, Exercise Science, and Public Health majors.

The curriculum provides a strong and relevant foundation for continued study in graduate schools in such areas as physical therapy, occupational therapy, athletic training, strength & conditioning, physical education, health education, public health, special education, adapted physical activity, curriculum and instruction, supervision and administration, sport and exercise psychology, exercise physiology, sports medicine, physician assistant, and other education/health-related professions.

**Kinesiology students may choose one of three majors: Physical Education Teacher K-12, Exercise Science, or Public Health.**

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## Physical Education Teacher K-12

The mission of the Physical Education program is to create and disseminate knowledge, engage in community service, and prepare caring and competent physical education teaching professionals. The Physical Education Teacher K-12 major is designed to specifically prepare teachers and leaders for elementary and secondary schools. Physical education majors will develop the knowledge and skills necessary for success on state certification exams, in professional practice teaching K-12 physical education, and during post-graduate work associated with the physical education discipline including physical education, health education, special education, adapted physical activity, curriculum and instruction, supervision and administration, and other education related fields. The program is approved by the New York State Education Department (NYSED). Program completion leads to NYSED teaching certification in Physical Education K-12. NYSED has certification reciprocity agreements with many other states. The program is also accredited by the Association for Advancing Quality in Educator Preparation (AAQEP).

### Physical Education – Program Learning Goals

1. *Content Knowledge.* Students will be able to demonstrate an understanding of the underlying scientific foundations of physical education and its applications to planning, teaching, and evaluation. This includes critically evaluating scholarly work related to exercise science and demonstrating the ability to make practical applications based on this research.
2. *Pedagogical Knowledge and Skills.* Students will be able to demonstrate pedagogical knowledge in the physical education discipline and the skills to apply this knowledge to positively impact all learners. With this, students will be able to plan, implement, and assess a variety of developmentally appropriate psychomotor, cognitive, and affective learning experiences aligned with professional standards to address the diverse needs of all learners.
3. *Cultural, Historical, and Philosophical Dimensions.* Students will be able to demonstrate an understanding of the cultural, historical, and philosophical dimensions of physical education and its applications to planning, professional practice, and evaluation. Within this, and consistent with our Lasallian mission, students will be able to demonstrate the appreciation of cultural diversity along with the ability to make ethical decisions based on this knowledge.
4. *Physical Activity in Health, Wellness, and Quality of Life.* Students will be able to demonstrate an understanding of the relationship between physical activity participation and health, wellness, and quality of life.
5. *Professional Responsibility.* Students will be able to demonstrate professional responsibility and the dispositions to grow professionally consistent with state and national organizations associated with the physical education teaching discipline. This goal includes demonstrating physical literacy with knowledge, skills, and competency in movement performance and health enhancing fitness as described in National Standards & Grade-Level Outcomes for K-12 Physical Education.

### Minor in Adapted Physical Education

All physical education and exercise science majors are eligible for a minor in Adapted Physical Education upon completion of these courses with a grade of C or higher in each course.

KIN 423	Adapted Physical Activity	3
KIN 424	Adapted Exercise & Sport	3
KIN 421	Therapeutic Recreation	2
EDUC 301	Nature and Needs of Students with Disabilities	3
EDUC 408	Management of Behavior and Learning for At-Risk and Disabled	3
Total Credits		14

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## Exercise Science

The mission of the Exercise Science program is to create and disseminate knowledge, engage in community service, and prepare caring and competent exercise science professionals. Exercise science majors will develop the knowledge and skills necessary for success in professional positions and post-graduate work associated with the exercise

science and kinesiology disciplines. The program provides a solid foundation for continued graduate school study in physical therapy, occupational therapy, exercise physiology, athletic training, adapted physical activity, sport and exercise psychology, public health, health promotion/community health, sports medicine, and other health-related/medical professions. Exercise Science courses also contribute to the requirements for certification as an Exercise Specialist from the American College of Sports Medicine and/or as a Certified Strength and Conditioning Specialist from the National Strength and Conditioning Association.

**Exercise Science – Program Learning Goals**

1. *Scientific Foundations of Exercise Science.* Students will be able to demonstrate an understanding of the underlying scientific foundations of exercise science and its applications to planning, professional practice, and evaluation. This includes critically evaluating scholarly work related to exercise science and demonstrating the ability to make practical applications based on this research.
2. *Observe, Analyze, and Evaluate Human Movement.* Students will be able to observe, analyze, and evaluate human movement and apply appropriate instructional intervention. With this, students will demonstrate the ability to plan, implement, and assess a variety of developmentally appropriate physical activity experiences.
3. *Cultural, Historical, and Philosophical Dimensions.* Students will be able to demonstrate an understanding of the cultural, historical, and philosophical dimensions of exercise science and its applications to planning, professional practice, and evaluation. Within this, and consistent with our Lasallian mission, students will be able to demonstrate the appreciation of cultural diversity along with the ability to make ethical decisions based on this knowledge.
4. *Physical Activity in Health, Wellness, and Quality of Life.* Students will be able to demonstrate an understanding of the relationship between physical activity participation and health, wellness, and quality of life.
5. *Professional Responsibility.* Student will be able to demonstrate professional behavior consistent with the exercise science discipline including an adherence to professional ethics and service to others; and an appreciation and commitment to physical activity practice.

**Preparation for Graduate Study in Physical Therapy, Occupational Therapy, and Other Health Professions**

Students preparing for professional school admission in physical therapy, occupational therapy, and other health professions should major in Exercise Science and plan courses in consultation with their Kinesiology faculty advisor and/or the Chair of Kinesiology. Prerequisites for graduate study may include, but may not be restricted to, the following elective courses:

MATH 155	Calculus for the Life Sciences I (First Year)	3
or MATH 100	Pre-Calculus Mathematics	
MATH 230	Elementary Statistics (First Year)	3
PHYS 105	Principles of Physics I (Second Year - Fall)	4
PHYS 195	Principles of Physics I Lab	0
PHYS 106	Principles of Physics II (Second Year - Spring)	4

PHYS 196	Principles of Physics II Lab	0
CHEM 101	General Chemistry I (Third Year - Fall)	3
CHEM 103	General Chemistry Laboratory I	1
CHEM 102	General Chemistry II (Third Year - Spring)	3
CHEM 104	General Chemistry Laboratory II	1
PSYC 421	Abnormal Psychology (Fourth Year - substitute for KIN 303)	3
Total Credits		25

Exercise Science majors interested in the premedical professions (e.g., Physician's Assistant, Sports Medicine) are advised to substitute Principles of Biology (BIOL 115-118) with General Biology (BIOL 111-114) and register in BIOL 111/BIOL 113 First Year - Fall and BIOL 112/BIOL 114 First Year - Spring.

### Minor in Psychology

Exercise Science majors may earn a minor in Psychology by completing 15 credits in Psychology courses planned in consultation with and approval of the Chair of the Psychology.

PSYC 203	Introduction to Psychology I	3
Additional credits in Psychology *		12
Total Credits		15

\* Approval of the Chair of the Psychology Department required.

### Minor in Business

Exercise Science majors may earn a minor in Business by completing 15 credits in Business courses with permission from the Assistant Dean of Education & Health. The minor in Business requires the completion of the following course sequence:

ACCT 201	Principles of Accounting I	3
ECON 203	Microeconomics	3
MGMT 201	Introduction to Management (Economics Elective)	3
MKTG 201	Essentials of Marketing	3
Business Elective (with proper prerequisites)		3
Total Credits		15

### Minor in Biology

Exercise Science majors may earn a minor in Biology by completing 15 credits in Biology courses planned in consultation with and approval of the Chair of the Biology Department. Eight of these credits must be the General Biology sequence (BIOL 111-114). The remaining credits must be chosen from courses that satisfy Biology B.S. major requirements. Exercise Science majors interested in the Biology minor are advised to substitute Principles of Biology (BIOL 115-118) with General Biology (BIOL 111-114) and register in BIOL 111/BIOL 113 First Year - Fall and BIOL 112/BIOL 114 First Year - Spring.

BIOL 111	General Biology I (First Year - Fall)	4
BIOL 113	General Biology I Laboratory	0
BIOL 112	General Biology II (First Year - Spring)	4
BIOL 114	General Biology II Laboratory	0
Additional credits in Biology that satisfy Biology B.S. major requirements *		7
Total Credits		15

\* Approval of the Chair of the Biology Department required.

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## Public Health

The mission of the Public Health program is to educate students on the core principles of public health knowledge to address health outcomes of the population through equity, policy and action. Public Health majors will develop the knowledge and skills necessary for success in professional positions and post-graduate work associated with the public health disciplines. The program provides a solid foundation for continued graduate school study in public health, community health, environmental health, health care administration, biostatistics, epidemiology, health policy and management, health promotion, and other health-related professions.

### Public Health – Program Learning Goals

1. *Historical and Theoretical Foundations.* Students will acquire knowledge of the history of public health, epidemiology, biostatistics, environmental health sciences, management, social and behavioral sciences, and academic & research ethics, and the ability to apply that knowledge for the assessment, promotion, and protection of human health.
2. *Quantitative Tools and Evidence-Based Methods.* Students will acquire knowledge of the appropriate quantitative tools and evidence-based methods to determine appropriate use of data to identify and address issues concerning population health and disease.
3. *Determinants of Health.* Students will acquire knowledge of determinants of health and their contribution to health disparities.

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## Physical Education Teacher K-12 Major Requirements

### Physical Education - Curriculum/Courses

#### First Year

##### First Year - Fall

KIN 100	Intro Teaching Physical Ed	2
BIOL 103	Introduction to Biology	3
BIOL 104	Introduction to Biology Laboratory	0
Modern Foreign Language		3
First Year - Spring		
KIN 229	Rhythmic Activities & Gymnastics	2

KIN 114	Small Crafts (May Camp)	1
KIN 116	Leisure Sports & Activities (May Camp)	1
KIN 120	Outdoor Adventures (May Camp)	2
Modern Foreign Language		3
First Year - Fall or Spring		
KIN 110	Personal Wellness	3
KIN 246	Aerobic Conditioning	2
ENGL 110	First Year Composition	3
MATH 151	Topics in Modern Mathematics	3
or MATH 230	Elementary Statistics	
RELS 110	The Nature and Experience of Religion	3
SPCH 204	Fundamentals of Speech	3
<b>Second Year</b>		
Second Year - Fall		
KIN 213	Quality Physical Education for Elementary Schools	3
KIN 337	Track & Field & Country	2
BIOL 207	Anatomy and Physiology I	4
BIOL 209	Anatomy And Physiology Lab I	0
EDUC 202	Psychology of Adolescent Education	15 hrs. of fieldwork required 3
or EDUC 303	Psychology of Childhood Education	
Second Year - Spring		
KIN 101	Team Sports I	2
KIN 217	Motor Learning	3
BIOL 208	Anatomy and Physiology II	4
BIOL 210	Anatomy & Physiology II Lab	0
Second Year - Fall or Spring		
ART Elective		3
EDUC 201	Principles and Practices of Education	15 hrs. of fieldwork required 3
PSYC 203	Introduction to Psychology I	3
RELS Elective (200 Level)		3
<b>Third Year</b>		
Third Year - Fall		
KIN 113	Team Sports II	2
KIN 306	Physiology of Exercise **	3
KIN 307	Physiology of Exercise Lab	0
KIN 331	Contemporary Activities	2
KIN 423	Adapted Physical Activity	15 hrs. fieldwork required 3
Third Year - Spring		
KIN 305	Quality Physical Education for Secondary Schools	3
KIN 309	Anatomical Kinesiology **	2
KIN 315	Anatomical Kinesiology Lab	0



KIN 412	Org & Admin Of Phys Educ	2
KIN 422	Curriculum & Assessment	3
EDUC 360	Language and Literacy <sup>15 hrs. fieldwork required</sup>	3
Third Year - Fall or Spring		
EDUC 301	Nature and Needs of Students with Disabilities <sup>15 hrs. fieldwork required</sup>	3
EDUC 311	Teaching and Learning w/ Tech	3
EDUC 408	Management of Behavior and Learning for At-Risk and Disabled <sup>10 hrs. fieldwork required</sup>	3
PHIL Elective		3
Educating All Students Test (EAS) upon completion of EDUC 301, EDUC 408, KIN 213, and KIN 305.		
<b>Fourth Year</b>		
Fourth Year - Fall		
KIN 418	Biomechanics of Human Movement <sup>**</sup>	2
Fourth Year - Spring		
KIN 411	Principles and Philosophy of Physical Education and Athletics	2
Fourth Year - Fall or Spring		
KIN 209	1st Aid/Emergencies/CPR <sup>*</sup>	1
KIN 415	Supervised Practice Teaching in Secondary Schools <sup>***</sup>	3
KIN 416	Supervised Practiced Teaching in Elementary Schools <sup>***</sup>	3
SOC 201	Introduction to Sociology	3
ENGL Elective (Lit)		3
KIN Elective		2
RELS Elective (300 Level)		3
Electives		6
Content Specialty Test upon completion of KIN 418		
edTPA during KIN 415 and KIN 416		
Total Credits		130

*Physical Education majors must achieve a grade of "C" or better in all KIN courses.*

- \* School of Education & Health students only; all others need permission from Kinesiology Department Chair.
- \*\* Permission from the Chair of the Department of Kinesiology is required to register for all majors other than Exercise Science and Physical Education Teacher Preparation.
- \*\*\* Prerequisite KIN 213 & KIN 305; Applicants for Supervised Practice Teaching must have senior status, at least a 2.75 index overall, a C or better in all KIN and 300 and 400 level BIOL courses, and meet standards established for the profession. Application deadlines for student Teaching, first Monday in March for Fall semester; first Monday in October for Spring semester.

## Criteria for Formal Admission to Teacher Education in Physical Education

1. Receive a grade of C+ or better in ENGL 110. Students who receive a grade of C or C- must take ENGL 210 as a follow-up to ENGL 110. Students who receive a grade of D or lower must retake ENGL 110 .
2. Successfully complete the Freshman and Sophomore Science Sequence, and MATH 230 or MATH 151 with a grade of 'C' or better.
3. Successfully complete KIN 110 with a grade of "C" or better. SAVE and Child Abuse requirements are contained within this course.
4. Successfully complete the Kinesiology Majors Skills Camp (KIN 114, KIN 116, KIN 120) with a grade of 'C' or better and a grade point average of 2.75 or better.
5. Successfully complete EDUC 201 and EDUC 202 with a grade of 'C' or better and a grade point average of 2.75 or better.
6. Successfully complete KIN 213, KIN 217, and the Sophomore Skills Sequence with a grade of 'C' or better and a grade point average of 2.75 or better.
7. Have both an overall Grade Point Average and academic concentration average of 2.75 or better with a 'C' or better in all academic concentration coursework.
8. Receive a majority vote from Kinesiology faculty and exhibit professional behavior as defined by program faculty and stated on course syllabi.

**Formal admission into the teacher education program.** Students applying for formal admission into teacher education can receive one of three responses:

- **Unconditional** admittance into the program. If the student successfully meets all criteria he/she is formally admitted into the program and may proceed with the program of studies.
  - **Conditional** admittance into the program. If the student has met most of the criteria and will be eligible for unconditional admittance by the end of the following semester (fifth semester) he/she may continue in the program and enroll in kinesiology or education courses for that semester. At the end of the conditional semester, the student automatically advances to unconditional admittance if all criteria are met. If the conditions are not met, the student will not be allowed to take additional upper division kinesiology or education courses until unconditional status is achieved. The student must reapply if unconditional status is not met by the end of the conditional semester.
  - **Denied** for admittance into the program. If a student has a number of deficiencies which will take longer than one semester to correct, his/her application will be denied. The student will not be allowed to continue with kinesiology or education classes until conditional admittance is achieved. When conditional admittance status is achieved, the student must meet the criteria listed under conditional admittance. The student in this category must reapply for admission to teacher education in physical education when he/she can document having met the criteria for admission.
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## Exercise Science Major Requirements

### Exercise Science - Curriculum/Courses

#### First Year

First Year - Fall		
BIOL 115	Principles of Biology I	2
BIOL 117	Principles of Biology Laboratory I	2
First Year - Spring		
BIOL 116	Principles of Biology II	2
BIOL 118	Principles of Biol Lab II	2
KIN 114	Small Crafts (May Camp)	1
KIN 116	Leisure Sports & Activities (May Camp)	1
KIN 120	Outdoor Adventures (May Camp)	2
Fall or Spring		
KIN 110	Personal Wellness	3
KIN 246	Aerobic Conditioning	2
CMPT 155	Computer Applications for Life Sciences	3
ENGL 110	First Year Composition	3
RELS 110	The Nature and Experience of Religion	3
MATH 230	Elementary Statistics	3
or MATH 151	Topics in Modern Mathematics	
SOC 201	Introduction to Sociology	3
Elective		3

#### Second Year

Second Year - Fall		
BIOL 207	Anatomy and Physiology I	4
KIN 102	Intro to Exercise Science	2
BIOL 209	Anatomy And Physiology Lab I	0
Second Year - Spring		
KIN 217	Motor Learning	3
BIOL 208	Anatomy and Physiology II	4
BIOL 210	Anatomy & Physiology II Lab	0
Second Year - Fall or Spring		
KIN 231	Anaerobic Conditioning	2
PSYC 203	Introduction to Psychology I	3
SPCH 204	Fundamentals of Speech	3
RELS Elective (200 Level)		3
ENGL Elective (Lit.)		3
KIN Elective		2
Electives		6

#### Third Year

Third Year - Fall		
KIN 306	Physiology of Exercise **	3
KIN 307	Physiology of Exercise Lab	0
BIOL 221	Introductory Nutrition	3
Third Year - Spring		
KIN 309	Anatomical Kinesiology **	2
KIN 315	Anatomical Kinesiology Lab	0
KIN 412	Org & Admin Of Phys Educ	2
KIN 419	Advanced Exercise Prescription	2
BIOL 441	Cardiovascular Biology	3
Third Year - Fall or Spring		
KIN 318	Care & Prevention **	2
KIN 430	Stress Management	3
KIN Elective		2
Electives		9
<b>Fourth Year</b>		
Fourth Year - Fall		
KIN 303	Sports Psychology	3
or PSYC 421	Abnormal Psychology	
KIN 418	Biomechanics of Human Movement **	2
KIN 421	Therapeutic Recreation <sup>15 hrs. fieldwork required</sup>	2
KIN 445	Therapeutic Prescriptions, Exercises and Modalities	2
Fourth Year - Spring		
KIN 411	Principles and Philosophy of Physical Education and Athletics	2
KIN 414	Statistics in Exercise Science	3
KIN 424	Adapted Exercise & Sport	3
KIN 443	Basic Electrocardiography **	2
Fourth Year - Fall or Spring		
KIN 209	1st Aid/Emergencies/CPR *	1
KIN 428	Professional Practicum I ***	3
KIN Elective		2
RELS Elective (300 Level)		3
Total Credits		129

*Exercise Science majors must achieve a grade of "C" or better in all KIN courses.*

\* School of Education & Health students only; all others need permission from Kinesiology Department Chair.

\*\* Permission from the Chair of the Department of Kinesiology is required to register for all majors other than Exercise Science and Physical Education Teacher Preparation.

\*\*\* Applicants for Professional Practicum must have senior status, an overall index of at least 2.75, and meet standards established for the profession. Applicants must consult with Department Chair a full semester before placement. Placement interviews may be required. Practicum assignment must be confirmed the semester before the practicum experience.

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## Public Health Major Requirements

### Health Care Services Administration Concentration - Curriculum/Courses

#### First Year

##### First Year - Fall

BIOL 115	Principles of Biology I	2
BIOL 117	Principles of Biology Laboratory I	2
ENGL 110	First Year Composition	3
MATH 151	Topics in Modern Mathematics	3
PSYC 203	Introduction to Psychology I	3
RELS 110	The Nature and Experience of Religion	3

##### First Year - Spring

BIOL 116	Principles of Biology II	2
BIOL 118	Principles of Biol Lab II	2
CMPT 155	Computer Applications for Life Sciences	3
KIN 110	Personal Wellness	3
SOC 201	Introduction to Sociology	3
ENGL Elective		3

#### Second Year

##### Second Year - Fall

PHP 206	Introduction to Public Health	3
BIOL 207	Anatomy and Physiology I	4
BIOL 209	Anatomy And Physiology Lab I	0
BIOL 221	Introductory Nutrition	3
ECON 203	Microeconomics	3
MATH 230	Elementary Statistics	3

##### Second Year - Spring

PHP 205	U.S. Health Care System	3
BIOL 208	Anatomy and Physiology II	4
BIOL 210	Anatomy & Physiology II Lab	0
MGMT 201	Introduction to Management	3
SPCH 204	Fundamentals of Speech	3
RELS Elective		3

#### Third Year

**Third Year - Fall**

PHP 201	Foundation of Health Education & Health Promotion	3
PHP 318	Essentials for Public Health Practice	3
PHP 410	Principles of Epidemiology	3
PHP 412	Health Research Methods	3
PHP 420	Ethics in Health Care	3

**Third Year - Spring**

PHP 392	Foundations of Public Health Policy	3
PHP 427	Disparities in Health	3
KIN 430	Stress Management	3
SOC 204	Urban Anthropology	3
RHS 471	Healthcare Organization and Management	3

**Fourth Year****Fourth Year - Fall**

PHP 418	Introduction to Environmental Health	3
KIN 209	1st Aid/Emergencies/CPR	1
PSYC 374	Organizational Psychology	3
RELS 373	Death as a Fact of Life	3
Elective		3

**Fourth Year - Spring**

PHP 425	Practicum in Public Health	4
MGMT 320	Talent Management & Acquisition	3
RHS 481	Legal Aspects in Health Care	3
Elective		3

Total Credits		120
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## Community Health Concentration - Curriculum/Courses

**First Year****First Year - Fall**

PHP 206	Introduction to Public Health	3
BIOL 115	Principles of Biology I	2
BIOL 117	Principles of Biology Laboratory I	2
ENGL 110	First Year Composition	3
MATH 151	Topics in Modern Mathematics	3
RELS 110	The Nature and Experience of Religion	3

**First Year - Spring**

BIOL 116	Principles of Biology II	2
BIOL 118	Principles of Biol Lab II	2
ENGL Elective		3
CMPT 155	Computer Applications for Life Sciences	3

KIN 110	Personal Wellness	3
SOC 201	Introduction to Sociology	3
<b>Second Year</b>		
Second Year - Fall		
PHP 318	Essentials for Public Health Practice	3
BIOL 207	Anatomy and Physiology I	4
BIOL 209	Anatomy And Physiology Lab I	0
BIOL 221	Introductory Nutrition	3
MATH 230	Elementary Statistics	3
PSYC 203	Introduction to Psychology I	3
Second Year - Spring		
PHP 205	U.S. Health Care System	3
BIOL 208	Anatomy and Physiology II	4
BIOL 210	Anatomy & Physiology II Lab	0
KIN 304	Kinesiology and Public Health	3
SPCH 204	Fundamentals of Speech	3
RELS Elective		3
<b>Third Year</b>		
Third Year - Fall		
PHP 201	Foundation of Health Education & Health Promotion	3
PHP 302	Health Communication Methods	3
PHP 420	Ethics in Health Care	3
KIN 209	1st Aid/Emergencies/CPR	1
RHS 481	Legal Aspects in Health Care	3
Elective		3
Third Year - Spring		
PHP 392	Foundations of Public Health Policy	3
PHP 410	Principles of Epidemiology	3
PHP 412	Health Research Methods	3
PHP 427	Disparities in Health	3
SOC 204	Urban Anthropology	3
<b>Fourth Year</b>		
Fourth Year - Fall		
PHP 418	Introduction to Environmental Health	3
PSYC 374	Organizational Psychology	3
RELS 373	Death as a Fact of Life	3
Elective		3
Fourth Year - Spring		
PHP 416	Introduction to Public Health Implementation and Evaluation	3
PHP 425	Practicum in Public Health	4
KIN 430	Stress Management	3

Elective	3
Total Credits	120

*Public Health majors must achieve a grade of "C" or better in all PHP courses.*



# Radiological & Health Professions

Kayla Valentino

Chair of the Department

## The Radiological and Health Professions Curriculum

### Nuclear Medicine and Radiation Therapy

The Bachelor of Science degree program in Radiological and Health Sciences is a four year program conducted in affiliation with hospitals and medical centers. Students will choose a major in Nuclear Medicine Technology (NMT) or a major in Radiation Therapy Technology (RTT). These programs are for students who have no previous experience in Nuclear Medicine or Radiation Therapy and wish to prepare themselves for a career in one of these fields. To satisfy the degree requirements in these programs, students must fulfill all the academic and clinical hours, which are specified by national and state agencies for professional certification, registration and licensing.

This program also includes a concentration in Health Care Administration, which gives the student an in depth understanding of the health care industry.

### Program Learning Goals

#### Nuclear Medicine Technology

*Goal #1:* Students will be academically competent as entry-level nuclear medicine technologists.

*Goal #2:* Students will be clinically competent as entry-level nuclear medicine technologists.

*Goal #3:* Students will demonstrate communication skills of a competent entry-level nuclear medicine technologist.

*Goal #4:* Students will develop the critical thinking skills necessary to perform independently within the nuclear medicine technologist's scope of practice.

*Goal #5:* Students will develop professionalism and ethical and moral practices congruent with the profession's code of ethics and pursue lifelong learning.

### Program Learning Goals

#### Radiation Therapy Technology

*Goal #1:* Students will be academically competent as entry-level radiation therapists.

*Goal #2:* Students will be clinically competent as entry-level radiation therapists.

*Goal #3:* Students will demonstrate communication skills of a competent entry-level radiation therapist.

*Goal #4:* Students will develop the critical thinking skills necessary to perform independently within the radiation therapists' scope of practice.

*Goal #5:* Students will develop professionalism and ethical and moral practices congruent with the profession's code of ethics and pursue lifelong learning.

## Program Requirements

### Bachelor of Science in Radiological and Health Sciences (Nuclear Medicine Technology)

This is a full-time program designed for students who have no previous experience in Nuclear Medicine Technology and wish to prepare themselves for a career in this field.

#### First Year

ENGL 110	First Year Composition	3
RELS 110	The Nature and Experience of Religion	3
BIOL 103	Introduction to Biology	3
MATH 100	Pre-Calculus Mathematics	3
PHYS 105	Principles of Physics I	4
English Elective		3
PSYC 203	Introduction to Psychology I	3
CMPT 155	Computer Applications for Life Sciences	3
MATH 230	Elementary Statistics	3
PHYS 106	Principles of Physics II	4
Total Credits		32

#### Second Year

BIOL 207	Anatomy and Physiology I	4
RHS 315	Radiation Physics	3
CHEM 100	Foundations of Chemistry	3
RHS 205	Concepts Allied Health	3
RHS 220	US Health Care Systems	3
BIOL 208	Anatomy and Physiology II	4
RHS 320	Radiation Detection and Protection	3
PHIL Elective		3
Humanity Elective		3
Religious Studies Elective		3
Total Credits		32

#### Third Year

RHS 317	Radiation Biology	3
RHS 275	Patient Care Procedures	3
RHS 331	Nuclear Medicine I	3
KIN 209	1st Aid/Emergencies/CPR	1
RHS 326	Cross-Sectional Anatomy	3

RHS 332	Nuclear Medicine II	3
RHS 301	Nuclear Medicine Instrumentation	3
RHS 340	Nuclear Medicine Internship I	2
RHS 471	Healthcare Organization and Management	3
RHS 404	CT Imaging	3
Total Credits		27

## Summer

RHS 341	Nuclear Medicine Internship II	4
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## Fourth Year

RHS 450	Nuclear Medicine Internship III	2
RHS 442	Nuclear Medicine III	3
RHS 420	Ethics in Healthcare	3
RHS 412	Health Research Methods	3
RHS 448	CT Procedures	3
RHS 451	Nuclear Medicine Internship IV	2
RHS 460	Nuclear Medicine Colloquium	1
RHS 472	Financial Management in Healthcare	3
RELS 373	Death as a Fact of Life	3
RHS 481	Legal Aspects in Health Care	3
General Elective		3
Total Credits		29

Total Credits for Graduation:

124

## Program Requirements

### Bachelor of Science in Radiological and Health Sciences (Radiation Therapy Technology)

This is a full-time program designed for students who have no previous experience in Radiation Therapy Technology and wish to prepare themselves for a career in this field.

## First Year

ENGL 110	First Year Composition	3
RELS 110	The Nature and Experience of Religion	3
BIOL 103	Introduction to Biology	3
MATH 100	Pre-Calculus Mathematics	3
PHYS 105	Principles of Physics I	4
ENGL Elective		3
PSYC 203	Introduction to Psychology I	3
CMPT 155	Computer Applications for Life Sciences	3

MATH 230	Elementary Statistics	3
PHYS 106	Principles of Physics II	4
Total Credits		32

## Second Year

BIOL 207	Anatomy and Physiology I	4
RHS 315	Radiation Physics	3
CHEM 100	Foundations of Chemistry	3
RHS 205	Concepts Allied Health	3
KIN 209	1st Aid/Emergencies/CPR	1
BIOL 208	Anatomy and Physiology II	4
RHS 320	Radiation Detection and Protection	3
PHIL Elective		3
RHS 275	Patient Care Procedures	3
RHS 276	Radiation Therapy I	3
Total Credits		30

## Summer

RHS 280	Radiation Therapy Internship I	4
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## Third Year

RHS 326	Cross-Sectional Anatomy	3
RHS 355	Radiation Therapy II	3
RHS 357	Radiation Therapy Instrumentation	3
RHS 360	Radiation Therapy Internship II	2
RHS 220	US Health Care Systems	3
RHS 356	Radiation Therapy III	3
RHS 358	Treatment Planning	3
RHS 361	Radiation Therapy Internship III	2
RHS 404	CT Imaging	3
RHS 471	Healthcare Organization and Management	3
Total Credits		28

## Summer

RHS 362	Radiation Therapy Internship IV	4
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## Fourth Year

RHS 435	Radiation Therapy Internship V	2
RELS Elective		3
RHS 317	Radiation Biology	3
RHS 420	Ethics in Healthcare	3
RHS 412	Health Research Methods	3

RHS 436	Radiation Therapy Internship VI	2
RHS 440	Radiation Therapy Colloquium	1
Humanities Elective		3
RELS 373	Death as a Fact of Life	3
RHS 481	Legal Aspects in Health Care	3
RHS 472	Financial Management in Healthcare	3
Total Credits		29

Total credits for Graduation: 127

## Concentration Health Care Administration

RHS 220	US Health Care Systems	3
RHS 471	Healthcare Organization and Management	3
RHS 420	Ethics in Healthcare	3
RHS 472	Financial Management in Healthcare	3
RHS 481	Legal Aspects in Health Care	3

NOTE: In the Bachelor's Degree in Nuclear Medicine Technology and Radiation Therapy Technology evening and daytime courses are required.

Admission to and continuation in the Clinical Internship courses in NMT and RTT require an overall Cumulative index of 2.75 and an overall Major Academic course index of 2.75 (see list of Major Academic courses below).

Admission to the Major Academic courses, that are pre-requisites or co-requisites to clinical internships, in the NMT and RTT programs requires an overall Cumulative index of 2.75 and a Major Academic course index of 2.75 (see list of Major Academic courses that are pre-requisites or co-requisites for clinical internship courses, they are marked with an \* below). If a student is unable to be admitted into the Major Academic courses because the indexes are lower than 2.75, they will be given 1 (one) academic year to meet this requirement. Failure to meet this requirement within 1 (one) academic year will result in dismissal from the program.

A grade of C or better is required in the Major Academic Courses (see list of Major Academic Courses below) for admission to sequential Major Academic Courses for which the course is a prerequisite. The student will be given one opportunity to repeat the course and must earn a grade of C or better before entering sequential Major Academic Courses for which the course is a prerequisite. If a student needs to repeat more than two major academic courses, they will be dismissed from the program.

A grade of C or better is required in the Major Academic courses (see list of Major Academic courses below) for admission or continuation in Clinical Internship courses. The student will be given one opportunity to repeat the course and must earn a grade of C or better before entering or continuing in Clinical Internship courses. (Please note that the Major Academic courses index must average to a 2.75 even though a few C grades are obtained in the Major Academic courses).

A grade of C or better is required in the Clinical Internship courses (see list of Clinical Internship courses below) to continue in Clinical Internship courses. The student must

earn a grade of C or better the next regular time that specific Clinical Internship course is offered before continuing in Clinical Internship courses.

If a grade of F is obtained in any Clinical Internship course, continuation in the Clinical Internship courses is not allowed.

Admission to the Clinical Internship courses in NMT and RTT is based upon the Faculty and Program Director's evaluation of the student's attendance, punctuality, maturity, attitude, motivation, responsibility, interpersonal skills, attentiveness to detail, pleasantness and ability to perform the duties of a nuclear medicine or radiation therapy technologist.

Continuation in the Clinical Internship courses in NMT and RTT is based upon the successful completion of the Overall & Clinical Evaluations given the student by the Clinical Supervisor at the Clinical Affiliate and the ongoing evaluation by the Faculty and Program Director of the student's attendance, punctuality, maturity, attitude, motivation, responsibility, interpersonal skills, attentiveness to detail, pleasantness and ability to perform the duties of a nuclear medicine or radiation therapy technologist.

Due to the serious nature of the duties performed by the student in the Clinical Internship courses, the student is granted one opportunity at completing the Clinical Internship. If the student is removed from the clinical affiliate site by the clinical supervisor for valid reasons, the student will receive an F grade for that Clinical Internship course, the student will not be re-assigned to another clinical affiliate site and will not be eligible to enroll in clinical internship courses. Students may appeal this decision to the Program Director.

**The NMT major academic courses include:**

RHS 205	Concepts Allied Health	3
RHS 275	Patient Care Procedures	3
RHS 301	Nuclear Medicine Instrumentation *	3
RHS 315	Radiation Physics	3
RHS 317	Radiation Biology	3
RHS 320	Radiation Detection and Protection	3
RHS 326	Cross-Sectional Anatomy	3
RHS 331	Nuclear Medicine I	3
RHS 332	Nuclear Medicine II *	3
RHS 404	CT Imaging *	3
RHS 412	Health Research Methods	3
RHS 442	Nuclear Medicine III *	3
RHS 448	CT Procedures	3
RHS 460	Nuclear Medicine Colloquium *	1
BIOL 207	Anatomy and Physiology I	4
BIOL 208	Anatomy and Physiology II	4

**The RTT major academic courses include:**

RHS 205	Concepts Allied Health	3
RHS 275	Patient Care Procedures	3

RHS 276	Radiation Therapy I	3
RHS 315	Radiation Physics	3
RHS 317	Radiation Biology	3
RHS 320	Radiation Detection and Protection	3
RHS 326	Cross-Sectional Anatomy	3
RHS 355	Radiation Therapy II *	3
RHS 356	Radiation Therapy III *	3
RHS 357	Radiation Therapy Instrumentation *	3
RHS 358	Treatment Planning *	3
RHS 404	CT Imaging *	3
RHS 412	Health Research Methods	3
RHS 440	Radiation Therapy Colloquium *	1
BIOL 207	Anatomy and Physiology I	4
BIOL 208	Anatomy and Physiology II	4

\* Major Academic courses which have Clinical Internship courses as pre-requisites and co-requisites.

**The NMT clinical internship courses include:**

RHS 340	Nuclear Medicine Internship I	2
RHS 341	Nuclear Medicine Internship II	4
RHS 450	Nuclear Medicine Internship III	2
RHS 451	Nuclear Medicine Internship IV	2

**The RTT clinical internship courses include:**

RHS 280	Radiation Therapy Internship I	4
RHS 360	Radiation Therapy Internship II	2
RHS 361	Radiation Therapy Internship III	2
RHS 362	Radiation Therapy Internship IV	4
RHS 435	Radiation Therapy Internship V	2
RHS 436	Radiation Therapy Internship VI	2

The written examination of the American Registry of Radiologic Technologists and/or the Nuclear Medicine Technology Certification Board for certification or registration as a Nuclear Medicine Technologist will be taken upon completion of all the requirements for the Bachelor of Science in Radiological and Health Sciences (Nuclear Medicine Technology).

The written examination of the American Registry of Radiologic Technologists for registration as a Radiation Therapy Technologist will be taken upon completion of all the requirements for the Bachelor of Science in Radiological and Health Sciences (Radiation Therapy Technology).

Approval for these examinations will be granted only after the student has met all responsibilities for successful completion of the program.

## Certificate Program in Nuclear Medicine Technology

The certificate program is for students who already have a bachelor's degree and are looking to transition into the field of nuclear medicine technology. Students must have completed the prerequisite courses as outlined below\*. The certificate program takes approximately 21 months to complete. A full-time internship is required during the summer session.

### First Year

RHS 315	Radiation Physics	3
RHS 205	Concepts Allied Health	3
KIN 209	1st Aid/Emergencies/CPR	1
RHS 331	Nuclear Medicine I	3
RHS 320	Radiation Detection and Protection	3
RHS 332	Nuclear Medicine II	3
RHS 301	Nuclear Medicine Instrumentation	3
RHS 340	Nuclear Medicine Internship I	2
RHS 326	Cross-Sectional Anatomy	3
Total Credits		24

### Summer Session

RHS 341	Nuclear Medicine Internship II	4
RHS 275	Patient Care Procedures	3
RHS 326	Cross-Sectional Anatomy	3
Total Credits		10

### Second Year

RHS 450	Nuclear Medicine Internship III	2
RHS 448	CT Procedures	3
RHS 317	Radiation Biology	3
RHS 442	Nuclear Medicine III	3
RHS 451	Nuclear Medicine Internship IV	2
RHS 460	Nuclear Medicine Colloquium	1
RHS 404	CT Imaging	3
RHS 412	Health Research Methods	3
Total Credits		20

Total Credits: 51

### **\*Entrance Requirements and Prerequisites for the Certificate Program**

Applicant should possess a Bachelor's degree and have the following college-level prerequisites:

English	6 Credits
Human Anatomy and Physiology	6 Credits



Chemistry	3 Credits
Physics	8 Credits
Computer Science	3 Credits
Pre-Calculus	3 Credits
Statistics	3 Credits

## Certificate Program in Radiation Therapy Technology

is for students who already have a bachelor's degree and are looking to transition into the field of radiation therapy technology. Students must have completed the prerequisite courses as outlined below\*. The certificate program takes approximately 29 months to complete. A full-time internship is required during both summer sessions.

### First Year

RHS 315	Radiation Physics	3
RHS 205	Concepts Allied Health	3
KIN 209	1st Aid/Emergencies/CPR	1
RHS 320	Radiation Detection and Protection	3
RHS 275	Patient Care Procedures	3
RHS 276	Radiation Therapy I	3
Total Credits		16

### Summer Session 1

RHS 280	Radiation Therapy Internship I	4
Total Credits		4

### Second Year

RHS 326	Cross-Sectional Anatomy	3
RHS 355	Radiation Therapy II	3
RHS 357	Radiation Therapy Instrumentation	3
RHS 360	Radiation Therapy Internship II	2
RHS 356	Radiation Therapy III	3
RHS 358	Treatment Planning	3
RHS 361	Radiation Therapy Internship III	2
RHS 404	CT Imaging	3
Total Credits		22

### Summer Session 2

RHS 362	Radiation Therapy Internship IV	4
Total Credits		4

### Third Year

RHS 435	Radiation Therapy Internship V	2
RHS 436	Radiation Therapy Internship VI *	2

RHS 317	Radiation Biology	3
RHS 440	Radiation Therapy Colloquium	1
RHS 412	Health Research Methods	3
Total Credits		11

Total Credits: 57

### **\*Entrance Requirements and Prerequisites for the Certificate Program**

Applicant should possess a Bachelor's degree and have the following college-level prerequisites:

English 6 Credits

Human Anatomy and Physiology 6 Credits

Chemistry 3 Credits

Physics 8 Credits

Computer Science 3 Credits

Pre-Calculus 3 Credits

Statistics 3 Credits

NOTE: In the Certificate programs in Nuclear Medicine Technology and Radiation Therapy Technology evening and daytime courses are required.

Admission to and continuation in the Clinical Internship courses in NMT and RTT require an overall Cumulative index of 2.75 and an overall Major Academic course index of 2.75 (see list of Major Academic courses below).

Admission to the Major Academic courses, that are pre-requisites or co-requisites to clinical internships, in the NMT and RTT programs requires an overall Cumulative index of 2.75 and a Major Academic course index of 2.75 (see list of Major Academic courses that are pre-requisites or co-requisites for clinical internship courses, they are marked with an \* below). If a student is unable to be admitted into the Major Academic courses because the indexes are lower than 2.75, they will be given 1 (one) academic year to meet this requirement. Failure to meet this requirement within 1 (one) academic year will result in dismissal from the program.

A grade of C or better is required in the Major Academic Courses (see list of Major Academic Courses below) for admission to sequential Major Academic Courses for which the course is a prerequisite. The student will be given one opportunity to repeat the course and must earn a grade of C or better before entering sequential Major Academic Courses for which the course is a prerequisite. If a student needs to repeat more than two major academic courses, they will be dismissed from the program.

A grade of C or better is required in the Major Academic courses (see list of Major Academic courses below) for admission or continuation in Clinical Internship courses. The student will be given one opportunity to repeat the course and must earn a grade of C or better before entering or continuing in Clinical Internship courses. (Please note that the Major Academic courses index must average to a 2.75 even though a few C grades are obtained in the Major Academic courses).

A grade of C or better is required in the Clinical Internship courses (see list of Clinical Internship courses below) to continue in Clinical Internship courses. The student must

earn a grade of C or better the next regular time that specific Clinical Internship course is offered before continuing in Clinical Internship courses.

If a grade of F is obtained in any Clinical Internship course, continuation in the Clinical Internship courses is not allowed.

Admission to the Clinical Internship courses in NMT and RTT is based upon the Faculty and Program Director's evaluation of the student's attendance, punctuality, maturity, attitude, motivation, responsibility, interpersonal skills, attentiveness to detail, pleasantness and ability to perform the duties of a nuclear medicine or radiation therapy technologist.

Continuation in the Clinical Internship courses in NMT and RTT is based upon the successful completion of the Overall & Clinical Evaluations given the student by the Clinical Supervisor at the Clinical Affiliate and the ongoing evaluation by the Faculty and Program Director of the student's attendance, punctuality, maturity, attitude, motivation, responsibility, interpersonal skills, attentiveness to detail, pleasantness and ability to perform the duties of a nuclear medicine or radiation therapy technologist.

Due to the serious nature of the duties performed by the student in the Clinical Internship courses, the student is granted one opportunity at completing the Clinical Internship. If the student is removed from the clinical affiliate site by the clinical supervisor for valid reasons, the student will receive an F grade for that Clinical Internship course, the student will not be re-assigned to another clinical affiliate site and will not be eligible to enroll in clinical internship courses. Students may appeal this decision to the Program Director.

**The NMT major academic courses include:**

RHS 205	Concepts Allied Health	3
RHS 275	Patient Care Procedures	3
RHS 301	Nuclear Medicine Instrumentation *	3
RHS 315	Radiation Physics	3
RHS 317	Radiation Biology	3
RHS 320	Radiation Detection and Protection	3
RHS 326	Cross-Sectional Anatomy	3
RHS 331	Nuclear Medicine I	3
RHS 332	Nuclear Medicine II *	3
RHS 404	CT Imaging *	3
RHS 412	Health Research Methods	3
RHS 442	Nuclear Medicine III *	3
RHS 448	CT Procedures	3
RHS 460	Nuclear Medicine Colloquium *	1

**The RTT major academic courses include:**

RHS 205	Concepts Allied Health	3
RHS 275	Patient Care Procedures	3
RHS 276	Radiation Therapy I	3
RHS 315	Radiation Physics	3

RHS 317	Radiation Biology	3
RHS 320	Radiation Detection and Protection	3
RHS 326	Cross-Sectional Anatomy	3
RHS 355	Radiation Therapy II *	3
RHS 356	Radiation Therapy III *	3
RHS 357	Radiation Therapy Instrumentation *	3
RHS 358	Treatment Planning *	3
RHS 404	CT Imaging *	3
RHS 412	Health Research Methods	3
RHS 440	Radiation Therapy Colloquium *	1

\* Major Academic courses which have Clinical Internship courses as pre-requisites and co-requisites.

**The NMT clinical internship courses include:**

RHS 340	Nuclear Medicine Internship I	2
RHS 341	Nuclear Medicine Internship II	4
RHS 450	Nuclear Medicine Internship III	2
RHS 451	Nuclear Medicine Internship IV	2

**The RTT clinical internship courses include:**

RHS 280	Radiation Therapy Internship I	4
RHS 360	Radiation Therapy Internship II	2
RHS 361	Radiation Therapy Internship III	2
RHS 362	Radiation Therapy Internship IV	4
RHS 435	Radiation Therapy Internship V	2
RHS 436	Radiation Therapy Internship VI	2

The written examination of the American Registry of Radiologic Technologists and/or the Nuclear Medicine Technology Certification Board for certification or registration as a Nuclear Medicine Technologist will be taken upon completion of all the requirements for the Bachelor of Science in Radiological and Health Sciences (Nuclear Medicine Technology).

The written examination of the American Registry of Radiologic Technologists for registration as a Radiation Therapy Technologist will be taken upon completion of all the requirements for the Bachelor of Science in Radiological and Health Sciences (Radiation Therapy Technology).

Approval for these examinations will be granted only after the student has met all responsibilities for successful completion of the program.

## Allied Health Courses

### **AHS 206. Introduction to Public Health. 3 Credits.**

This course will present the student with an introduction to the multifaceted discipline of public health for the purpose of enhancing an understanding of the topic and providing a knowledge base for further studies. The definition of public health will be presented in the context of its history, system structure, and responsibilities in protecting human health in society. The social-ecological model of the interactions between physical/social environments with the individual biological/behavioral factors as determinants of population health will be emphasized/ The public health focus on disease prevention, measuring the health of populations, creating population-wide interventions, assessing outcomes, and informing policy will be discussed. Basic concepts in the five core public health knowledge areas of epidemiology, biostatistics, environmental health, social and behavioral sciences, and health policy and management will be introduced. Historical and contemporaneous examples and case studies will be used to demonstrate principles and issues. Students are expected to exhibit knowledge of the role and responsibilities of public health and demonstrate some facility in using basic public health methods in addressing population health issues.

### **AHS 403. Introduction to Addiction, Alcohol & Other Substances of Abuse. 3 Credits.**

An overview of the etiology and treatment of various addictive disorders. Attention will be given to alcoholism, substance abuse, risky sexual behavior, etc., and how they affect the brain, individual cognitive functioning, attitude, behavior, perception, and the family nucleus. Physical illness commonly found among this population, such as AIDS, will be discussed. Specific emphasis will be placed on the pharmacological effects of alcohol and substances of abuse.

### **AHS 404. Relapse and Recovery. 3 Credits.**

This course examines the bio-physical-social variables of relapse and recovery, physical (compulsion), physiological (obsession), family codependency, denial and enabling. Self-sabotaging behavior (anger, fear, guilt, isolation, anger, depression, dearth of support, grandiosity, unresolved issues, erroneous cognition, low self-esteem, etc.) as to why individuals relapse. Emphasis will be placed on comprehensive relapse prevention theories, principles and models of integrated treatment and the basis of relapse (dry drunk) syndrome. Exploration of bio-psych-social rehabilitation, behavior modification and cognitive restructuring, pharmacotherapies and the spiritual philosophy of the 'Fellowship' of 12-step anonymous (self-help) concept used as components of effective treatment modalities for recovery. Case studies will be discussed in a group dynamic setting. Educational recovery movies, icebreaker group activity and guest speaker will be employed to enhance the learning experience.

### **AHS 425. Practicum in Allied Health. 3 Credits.**

One hundred hours of supervised field work in a professional setting and a written paper on the experience.

## Radiological and Health Sciences Courses

### **RHS 205. Concepts Allied Health. 3 Credits.**

In the course, the students will receive basic information that health care workers would need to work in any level of the health care environment. This will include an orientation to the health care system, hospital and department structure. Different occupations will be identified and discussed. Students will develop a comprehensive foundation of basic medical terminology, anatomy, radiation safety, medical ethics and law, and quality assurance for use in health care careers. The multi-disciplinary skills needed for success in the health care environment will be established.

### **RHS 220. US Health Care Systems. 3 Credits.**

This course will provide students with a comprehensive overview of the US Health Care System from its inception to modern day. The significance of each type of care and the methods of delivery will be reviewed. The current state of reimbursement, long term care, and public health will be discussed. Students will examine the Affordable Care Act and its impact on the US Health Care system. Career opportunities will also be explored.

### **RHS 275. Patient Care Procedures. 3 Credits.**

This course is intended to provide the students with foundational concepts in assessment and evaluation of patients; essential elements of providing quality patient care will be covered. The psychological and physical needs of patients will be considered and their possible effect on procedures will be identified. Routine and emergency care procedures will be described, as well as infection control procedures using standard precautions. The role of the health care provider in patient education will be discussed. Basic fundamentals of ethics and law will also be presented.

### **RHS 276. Radiation Therapy I. 3 Credits.**

This course introduces the foundations of radiation therapy with an overview of the profession and the practitioner's role in the healthcare delivery system. Ethical and legal professional responsibilities of the radiation therapist will be discussed and examined. Oncology and pathology will be introduced and the treatment options of a cancer patient will be identified. Basic policies and procedures of radiation therapy will be explored and assessment of radiation therapy patients will be acknowledged.

### **RHS 280. Radiation Therapy Internship I. 4 Credits.**

Clinical Education. Satisfactory achievement of required performance objectives under the direct supervision of qualified technologists in the department of radiation therapy at an affiliated hospital. Prerequisites: RHS 205, RHS 275, RHS 276, RHS 320. Only offered during summer session.

### **RHS 301. Nuclear Medicine Instrumentation. 3 Credits.**

Scintillation spectrometry. Scintillation camera. Rectilinear scanner. Tomographic systems. Well-type scintillation detector. Quality control. Counting statistics. Computer systems. Spring. Prerequisite: RHS 331. Corequisites: RHS 340, RHS 332.

**RHS 315. Radiation Physics. 3 Credits.**

This course will discuss and explain the necessary theoretical concepts of radiation physics that are the foundation for understanding the ideas and practices used in radiation therapy and nuclear medicine in the hospital setting. This course work together with the student's internships in the hospital setting provides both a theoretical and experimental practicum in the principles of radiation physics. These ideas will be explained through lectures, power point presentations and class discussions. Emphasis will always be on tying together all the concepts presented. Prerequisite: MATH 100 and PHYS 105 and PHYS 106.

**RHS 317. Radiation Biology. 3 Credits.**

This course will discuss and explain the necessary concepts of radiation biology that are the foundation for understanding the ideas and practices used in radiation therapy, nuclear medicine, diagnostic imaging, and radiation safety as they relate to radio-biological effects in patients receiving radiation therapies or undergoing diagnostic testing for suspected malignant disease. This course work together with the student's internship in the hospital setting provides both a theoretical and experimental practicum in radiation biology related to disease diagnosis and treatment. These ideas will be explained through lectures, power point presentations and class discussions. Emphasis will always be on tying together new ideas with ideas presented in previous classes. Prerequisite: RHS 315 and RHS 320.

**RHS 320. Radiation Detection and Protection. 3 Credits.**

This course will discuss and explain the necessary concepts of radiation biology that are the foundation for understanding the ideas and practices used in radiation therapy, nuclear medicine, diagnostic imaging, and radiation safety as they relate to radio-biological effects in patients receiving radiation therapies or undergoing diagnostic testing for suspected malignant disease. This course work together with the student's internship in the hospital setting provides both a theoretical and experimental practicum in radiation biology related to disease diagnosis and treatment. These ideas will be explained through lectures, power point presentations and class discussions. Emphasis will always be on tying together new ideas with ideas presented in previous classes. Prerequisite: RHS 315.

**RHS 326. Cross-Sectional Anatomy. 3 Credits.**

This course will explore cross anatomical and cross-sectional relationships of human tissues, organs and organ systems. Course content will focus on multi-modality imaging technology, providing learners with the technical and conceptual knowledge of each modality, including CT, MRI, Ultrasound and PET scans. Participants will demonstrate real-world application and anatomical understanding through a case study presentation.

**RHS 331. Nuclear Medicine I. 3 Credits.**

Basic introduction to Nuclear Medicine. The student will be learning about radionuclides and radiopharmaceuticals such as production of radionuclides, radiopharmaceutical characteristics, and preparation and administration. The student will also understand nuclear medicine scans such as lung, liver, and renal. Prerequisite BIOL 207, BIOL 208 and RHS 315. Corequisite: RHS 317 .

**RHS 332. Nuclear Medicine II. 3 Credits.**

This course will give the student an understanding of radiopharmaceuticals and theory of in-vivo imaging and in-vivo non-imaging procedures in clinical nuclear medicine. Prerequisite: RHS 331. Corequisites: RHS 301, RHS 340.

**RHS 340. Nuclear Medicine Internship I. 2 Credits.**

Clinical Education. Satisfactory achievement of required performance objectives under the direct supervision of qualified technologists in the department of nuclear medicine at an affiliated hospital. Prerequisites: RHS 315, RHS 320, RHS 331. Corequisites: RHS 275.

**RHS 341. Nuclear Medicine Internship II. 4 Credits.**

Clinical Education. Satisfactory achievement of required performance objectives under the direct supervision of qualified technologists in the department of nuclear medicine at an affiliated hospital. Prerequisites: RHS 340. Only offered during summer session. Internship courses must be successfully completed in order to continue in next sequential internship course.

**RHS 350. Independent Study. 1 Credit.****RHS 351. Independent Study. 2 Credits.****RHS 352. Independent Study. 3 Credits.****RHS 353. Independent Study. 3 Credits.****RHS 355. Radiation Therapy II. 3 Credits.**

In this course the student will examine and evaluate the management of neoplastic disease starting with how radiation kills cancer cells. The epidemiology, etiology, detection, diagnosis, patient condition, treatment and prognosis of neoplastic disease will be presented, discussed, and evaluated in relation to histology, anatomical site and patterns of spread. Different treatment techniques and modalities will be explored. Prerequisites: RHS 276. Corequisites: RHS 360, RHS 326, and RHS 357.

**RHS 356. Radiation Therapy III. 3 Credits.**

In this course the student will examine and evaluate the management of neoplastic disease. The epidemiology, etiology, detection, diagnosis, patient condition, treatment and prognosis of neoplastic disease will be presented, discussed, and evaluated in relation to histology, anatomical site and patterns of spread. Different treatment techniques and modalities will be explored. Prerequisites: RHS 355, and RHS 357.

**RHS 357. Radiation Therapy Instrumentation. 3 Credits.**

In this course, the student will discuss the principles of the design and operation of radiation therapy instrumentation and equipment. The student will also be analyzing the components of quality management programs which develop a culture of safety in radiation oncology. Prerequisites: RHS 276. Corequisites: RHS 355, RHS 326, and RHS 360.

**RHS 358. Treatment Planning. 3 Credits.**

Principles of treatment planning, dosimetry and calculations. Spring. Prerequisites: RHS 355, RHS 357, RHS 360. Corequisites: RHS 356, RHS 361.

**RHS 360. Radiation Therapy Internship II. 2 Credits.**

Clinical Education. Satisfactory achievement of required performance objectives under the direct supervision of qualified technologists in the department of radiation therapy at an affiliated hospital. Prerequisites: RHS 276, and RHS 280. Internship courses must be successfully completed in order to continue in next sequential internship course.



**RHS 361. Radiation Therapy Internship III. 2 Credits.**

Clinical Education. Satisfactory achievement of required performance objectives under the direct supervision of qualified technologists in the department of radiation therapy at an affiliated hospital. Prerequisites: RHS 360, RHS 355, RHS 357. Internship courses must be successfully completed in order to continue in next sequential internship course.

**RHS 362. Radiation Therapy Internship IV. 4 Credits.**

Clinical Education. Satisfactory achievement of required performance objectives under the direct supervision of qualified technologists in the department of radiation therapy at an affiliated hospital. Prerequisites: RHS 361, RHS 356. Only offered during summer session. Internship courses must be successfully completed in order to continue in next sequential internship course.

**RHS 404. CT Imaging. 3 Credits.**

This course provides an environment in learning general computerized axial tomography. Students will learn the basic principles and concepts of the CT Imaging modality and how is it used in the fields of Radiation therapy and nuclear medicine will be identified. The areas of radiation safety and protection will be explored. Contrast agents and their use will also be discussed.

**RHS 412. Health Research Methods. 3 Credits.**

This course is designed to focus on the principles of research relevant to the health fields and increase the awareness of the importance of disseminating information. Students will learn to apply research methodology to problems within their specific health fields as well as review literature related to a research project. An introduction to quantitative, qualitative, mixed method and participatory approaches to research, as well as ethical issues in conducting research will be discussed. Students will build the skills necessary for conducting research and will be able to design a research project.

**RHS 420. Ethics in Healthcare. 3 Credits.**

This course will explore the major ethical issues confronting the practices of medicine and biomedical science. The class will become familiar with legal and institutional positions, study ethical issues related to the access of healthcare, quality of care, ethical dilemmas of beginning of life issues including surrogacy and abortion, bioethical considerations of aging and dying, physician assisted suicide, assisted dying, current practices in organ transplantation, regenerative medicine, stem cell research, the Patient Protection Affordable Care Act (PPACA) and new and emerging bioethics issues in societal health including domestic violence and end of life care.

**RHS 435. Radiation Therapy Internship V. 2 Credits.**

Clinical Education. Satisfactory achievement of required performance objectives under the direct supervision of qualified technologists in the department of radiation therapy at an affiliated hospital. Prerequisites: RHS 362. Internship courses must be successfully completed in order to continue in next sequential internship course.

**RHS 436. Radiation Therapy Internship VI. 2 Credits.**

Clinical Education. Satisfactory achievement of required performance objectives under the direct supervision of qualified technologists in the department of radiation therapy at an affiliated hospital. Prerequisites: RHS 435. Corequisites: RHS 440 Internship courses must be successfully completed in order to continue in next sequential internship course.

**RHS 440. Radiation Therapy Colloquium. 1 Credit.**

Presentation of advanced topics, special procedures and changing developments in radiation therapy. This course can only be taken in the last semester of the curriculum. Prerequisites: RHS 356. Corequisites: RHS 436.

**RHS 442. Nuclear Medicine III. 3 Credits.**

Students will continue their study of the field of nuclear medicine by exploring more complex nuclear medicine procedures. Knowledge of medical terminology, anatomy & physiology, patient care and radiation safety will play a large role. Students will continue to learn appropriate use of radiopharmaceuticals as well pharmaceuticals, radiation safety and patient care. Students' area of studies will include complex radiopharmaceuticals used in PET imaging, radiation safety and regulations involved in Nuclide Therapy, as well as learning skills of working with young children. Prerequisites: RHS 332, RHS 301, RHS 341. Corequisite: RHS 450.

**RHS 448. CT Procedures. 3 Credits.**

This course will allow students to explore and critique the different procedures and specific diagnosis criteria that are pertinent to contemporary computed tomography. This will include a comprehensive clinical understanding of anatomy, contrast media, and special procedures related to head, spine, musculoskeletal, neck and chest, and abdomen and pelvis studies. Prerequisite: RHS 404.

**RHS 450. Nuclear Medicine Internship III. 2 Credits.**

Clinical Education. Satisfactory achievement of required performance objectives under the direct supervision of qualified technologists in the department of nuclear medicine at an affiliated hospital. Prerequisites: RHS 341. Internship courses must be successfully completed in order to continue in next sequential internship course.

**RHS 451. Nuclear Medicine Internship IV. 2 Credits.**

Clinical Education. Satisfactory achievement of required performance objectives under the direct supervision of qualified technologists in the department of nuclear medicine at an affiliated hospital. Prerequisites: RHS 450. Corequisites: RHS 460. Internship courses must be successfully completed in order to continue in next sequential internship course.

**RHS 460. Nuclear Medicine Colloquium. 1 Credit.**

Presentation of advanced topics, special procedures and changing developments in nuclear medicine. This course can only be taken in the last semester of the curriculum. Corequisites: RHS 451.

**RHS 471. Healthcare Organization and Management. 3 Credits.**

This course will present the student with an overview of how healthcare institutions are organized and governed. The design of management systems will be examined including the roles of management staff, physicians and nurses, and other clinical and support staff in operation.

**RHS 472. Financial Management in Healthcare. 3 Credits.**

This course is intended for students in health services administration, public health, and related fields. It is not for the accounting or financial specialist, but for managers and employees in the health care industry who may be involved in making financial decisions for their organizations and to give the non-financial employee an appreciation for accounting concepts and the financial concerns and problems facing the healthcare industry. The course examines the health industry broadly categorized into four major activities: planning, executing, reviewing and reporting.

**RHS 481. Legal Aspects in Health Care. 3 Credits.**

This course will consider how the US legal system influences and attempts to regulate the U.S. health care system. At the end of this course, the student will have an overview of the legal system including the legal and regulatory processes relevant to health care administration. The student will also become familiar with major federal, state and local legislation and procedures affecting the practice of health care administration. In addition to the mentioned outcomes, the course will cover the history of the legal system and government, ethics, tort law, criminal aspects of health care, antitrust and civil procedure, nursing and allied health professionals and the law, informed consent, medical records and patients' rights, end-of-life issues, labor rights, and managed care.

# Engineering - General Information

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## Historical Note

Engineering education at Manhattan College developed out of a science program in coordination with liberal arts. In 1892, civil engineering and electrical engineering were among four curricula leading to the Bachelor of Science degree. Although civil engineering has continued uninterrupted since, electrical engineering was suspended shortly after its introduction. It was re-established as a degree program in 1935. Programs in mechanical engineering, chemical engineering, environmental engineering and computer engineering were introduced in 1957, 1958, 1993, and 1998, respectively. The undergraduate program in environmental engineering was phased out in 2012. However, the master's degree programs in environmental engineering continue and undergraduate engineering students can minor in environmental engineering.

## Vision and Mission Statements

The vision of the School of Engineering gives broad direction to long-term goals, i.e.:

**The Manhattan College School of Engineering will be the school of choice for engineering education in the New York metropolitan region.**

This means that the College will be the destination of choice when students apply to engineering schools. In order to realize this vision, every program in the school will develop curricula which attract and excite students while supporting the mission of the school.

The School of Engineering has developed the following mission statement with input from its stakeholders:

**The mission of the Manhattan College School of Engineering is to prepare each student for a productive and rewarding career in engineering or a related profession.**

This mission is congruent with the mission of the College. The curriculum supporting the school's mission instills the techniques and skills of engineering design through the study of basic and advanced engineering science. This foundation of techniques and skills is integrated with practice-oriented engineering design experience covering technical and non-technical aspects of engineering practice. Students earning a Manhattan College engineering degree are prepared to enter the world of professional practice and to continue their studies through the pursuit of post-baccalaureate education.

The strong foundation coupled with thorough preparation in an engineering discipline ensures that the student will have life-long access to rapidly developing new technologies and prepares each student to be a citizen, an advocate, and a leader in the complex world of the 21st century.

The mission of the School of Engineering is consistent with the Lasallian and Catholic heritage of Manhattan College. Graduates of its engineering programs are expected to meet high academic standards, reflect on moral and ethical considerations in all aspects of their lives, and appreciate the need for life-long learning in the fulfillment of professional

goals. Part of the ethical considerations expected of all students is their observance of academic integrity. Students accept the Manhattan College Community Standards and Student Code of Conduct under which they will not engage in academic dishonesty – cheating, plagiarism, and/or fabrication – or in academic misconduct, nor tolerate it in others. As aspiring engineers, students are expected to be aware of engineering codes of professional conduct which also prohibit dishonesty and misuse of intellectual property.

## Program Educational Objectives

The undergraduate programs in the Manhattan College School of Engineering are individually accredited by the Engineering Accreditation Commission (EAC) of ABET, <http://www.abet.org> (<http://www.abet.org/>). (<http://www.abet.org>.) ABET states that Program Educational Objectives must be published and that these objectives are consistent with the institution's mission, needs of program stakeholders and other ABET criteria. Each program is required to develop, publish, and periodically review its objectives.

Although each program develops its own objectives, there are some general themes that are recognized across the programs. These themes can be grouped as:

- Leadership, achievement, and involvement in engineering and related professions
- Dedication to furthering the engineering profession through continuous self-improvement
- Ethical practices and moral character
- Commitment to engineering as a service-to-humanity profession

Graduates of the School of Engineering will be valued for their ethical practices and moral character, leadership and involvement in engineering and related professions, dedication to the profession through self-improvement, and recognition that engineering is a service to humanity.

## Student Outcomes for The Engineering Programs

ABET states that programs must have documented Student Outcomes that prepare graduates to attain the Program Educational Objectives. These outcomes relate to the knowledge, skills, and behaviors that students acquire as they progress through the program. ABET requires each program to adopt a standard set of outcomes plus any additional outcomes that may be articulated by the program. The standard set of seven (7) outcomes, referred to as ABET Student Outcomes (1) through (7), is:

1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. an ability to communicate effectively with a range of audiences
4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts

5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

These standard (1) through (7) student outcomes have been adopted by the undergraduate engineering programs in chemical, civil, computer, electrical and mechanical.

The educational objectives and outcomes of all the programs in the School of Engineering are consistent with the school's mission and the Lasallian and Catholic heritage of Manhattan College. In addition, the outcomes articulated by each program are consistent with the Manhattan College core competencies of:

- Effective Communication
- Critical Thinking
- Information Literacy
- Technology Literacy
- Quantitative Literacy
- Scientific Literacy
- Global Awareness
- Religious and Ethical Awareness
- Independent and Collaborative Work

## Engineering Education

The foundation of the engineering curriculum includes:

1. The study of science representing the current state of human knowledge of the physical world and its behavior
2. The study of mathematics, the language and tool that engineers use to describe the physical world
3. Breadth of study in the humanities and social sciences, the basis for making ethical and moral engineering decisions
4. Development of the ability for independent learning and critical thinking
5. Development of skills in written, verbal, and graphical communication

In an age of revolutionary advances in science and technology, continual re-examination of trends in engineering becomes imperative. Accordingly, engineering faculty, in consultation with the Manhattan College Engineering board of advisors, a distinguished group of engineers and industrial leaders assembled from engineering-related organizations, study and evaluate the concepts of engineering education and the school's programs. These studies re-emphasize the importance of humanities, mathematics and sciences as the foundation of engineering education. The engineering curriculum

is, therefore, planned to provide the sound and broad education required in important branches of engineering.

## Curricula

The engineering curricula have been designed with two premises in mind: one, that sound undergraduate engineering education must establish fundamental concepts at the expense of specialization; and two, that first-line engineering research, development or design requires post-collegiate specialization and advanced study through graduate work or industrial training, together with continuing self-development.

The engineering curricula are four-year programs and lead to the Bachelor of Science degree in one of the traditional branches of engineering: chemical engineering, civil engineering, computer engineering, electrical engineering, and mechanical engineering.

Each program provides opportunities for minor studies or focus areas within its discipline. Despite the apparent division of engineering study into these curricula, there is a core engineering curriculum designed to offer the fundamental education required for all engineering students.

All students must complete ENGL 110 First Year Composition . International students may be required to successfully complete ENGL 106 Introduction to Composition before enrolling in ENGL 110. Students graduating from a U.S. high school may be required to complete ENGL 106 before enrolling in ENGL 110. ENGL 106 will not count towards degree credit in any engineering program.

All students must complete RELS 110 The Nature and Experience of Religion and six additional credits in religious studies. The additional credits are selected from approved courses.

The curriculum for the first year is common to all branches of engineering. In order to enable a student to test his or her interest in one of the major engineering disciplines, he or she takes designated courses from a specific discipline in the sophomore year. The curricula of the various engineering majors are detailed in the following section.

Each curriculum offers four areas of study:

**1. General Education:** Courses in this area comprise about one fifth of the entire curriculum and are conducted throughout the four years. These courses are intended to develop foundations for the fuller life of the student as a person. Courses in history, literature, philosophy, social sciences, business, education and religious studies blend with the scientific and technological growth of the student so that he or she may progress as a more complete person toward a satisfying professional life.

**2. Mathematics and the Basic Sciences:** Approximately one quarter of the entire curriculum provides a thorough grounding in mathematics, at least through differential equations, and the basic sciences of chemistry and physics. These subjects are essential to all engineering students as the foundation of the engineering sciences. All first-year students are required to pass a mathematics readiness and aptitude examination prior to enrolling in MATH 185 Calculus I.

**3. The Engineering Sciences:** Fundamental concepts in engineering sciences provide a comprehensive foundation for all engineering disciplines. Topics such as statics,

dynamics, electrical circuits, materials science, and thermodynamics integrate and build on principles introduced in mathematics, chemistry, and physics. Engineering science courses enable students to develop the competence to apply essential principles to synthesize and design engineering systems.

**4. The Major:** The fourth area of study is the major field which is described in the following sections.

## The Major

Although significant specialization is postponed until after the bachelor's degree, basic programs in chemical, civil, computer, electrical, or mechanical engineering are offered as a major, comprising about one half of each curriculum. Each student is able to focus on one aspect of the engineering discipline in greater depth and to develop proficiency in engineering design.

The undergraduate programs in chemical engineering, civil engineering, computer engineering, electrical engineering, and mechanical engineering are accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org/>. The Master of Engineering in Environmental Engineering program is also accredited by ABET.

## Minor Studies

Engineering students have the opportunity to develop depth in an area other than the major by completing a minor.

Students may minor in many areas including biology, business, computer science, chemistry, economics, English, environmental studies, finance, government, history, management, marketing, mathematics, modern foreign languages, peace studies, philosophy, physics, psychology, religious studies, urban affairs, and women and gender studies. In general, a minor requires 15 credits. Courses must be completed at Manhattan College.

Engineering students may also choose to minor in another engineering discipline. The minors are:

### Chemical Engineering--

CHML 207 Process Calculations, CHML 208 Chemical Engineering Principles I, CHML 305 Chemical Engineering Principles II, CHML 306 Separation Process Design I, and CHML 321 Chemical Reaction Engineering.

### Civil Engineering--

CIVL 302 Structural Analysis I, CIVL 309 Steel Design, CIVL 409 Reinforced Concrete Design, CEEN 303 Fluid Mechanics, and CIVL 310 Introductory Geomechanics.

### Computer Engineering--

1. For all students except electrical engineering majors:

EECE 210 Software Engineering I, EECE 229 Introduction to Digital Systems and EECE 232 Computer System, Organization & Design, and two additional computer engineering courses approved by the ECE department chair.



## 2. For electrical engineering majors:

EECE 210 Software Engineering I and EECE 232 Computer System, Organization & Design, plus three elective computer engineering courses, of which at least two must be upper division or graduate, approved by the ECE department chair. These elective courses cannot be used to simultaneously satisfy the requirements for electrical engineering.

### **Electrical Engineering--**

#### 1. For all students except computer engineering majors:

EECE 201 Fundamentals of Electrical System Analysis I, EECE 203 Fundamentals of Electrical System Analysis II, and EECE 229 Introduction to Digital Systems Analysis II to Digital Systems, plus sequence a, b, or c as follows:

1. EECE 303 Signals and Systems I and EECE 304 Signals and Systems II , or
2. EECE 305 Electronic Systems I and EECE 306 Electronic Systems II, or
3. Two upper division courses in electrical engineering approved by the ECE department chair.

#### 2. For computer engineering majors:

EECE 232 Computer System, Organization & Design, and EECE 321 Embedded Systems Design, plus three elective electrical engineering courses, of which at least two must be upper division or graduate level, approved by the department chair. These elective courses cannot be used to simultaneously satisfy the requirements for computer engineering.

### **Environmental Engineering--**

The minor in environmental engineering is open to all engineering majors. Required course work includes ENGS 204 Environmental Engineering Principles I plus four courses from the following: CEEN 305 Energy & the Environment ENVL 406 Water and Wastewater Treatment Processes, ENVL 408 Environmental Engineering Design, ENVL 410 Hazardous Waste Design, ENVL 439 Environmental Engineering Projects, ENVL 505 Surface Water Quality Modeling and ENVL 507 Groundwater. Students interested in the environmental engineering minor should contact Dr. Robert Sharp.

### **Mechanical Engineering--**

ENGS 205 Introductory Thermodynamics, ENGS 206 Statics, MECH 230 Introductory Solid Mechanics, MECH 318 Fluid Mechanics I, and MECH 325 Heat Transfer. This set of courses may be modified by the mechanical engineering department chair based upon the background of the student.

Students are responsible for any required prerequisites. Completion of the minor may qualify students for entry to the graduate program of the minor department. Except for environmental engineering, students should contact the chair of the minor department for further information.

Engineering students may obtain an Application for Minor form at the office of the Dean of Engineering. After the form is completed by the program chair offering the minor, the form should be returned to the office of the Dean of Engineering by the student. When all

courses have been completed, the dean will notify the office of the Registrar. The courses leading to a minor in engineering are subject to change. Please verify the coursework required with the Assistant Dean of Engineering before starting a minor.

## Transferring from a Community College

Students who complete a pre-engineering program will generally be permitted to transfer up to 50% of the credits required for a Bachelor of Science degree in an engineering degree program. Transfer credit will only be permitted for courses in which a grade of C (2.0) or higher has been earned. All transfer credits are reviewed by the Assistant Dean of Engineering

Students who graduate with an associate degree in a technology program will generally only be permitted to transfer 9 credits towards a Bachelor of Science engineering degree.

Engineering has transfer arrangements with several of the community colleges in the Tri-State area. Additional information can be obtained from the office of the Dean of Engineering at (718) 862-7281.

## Graduate-Level Courses (5XX, 6XX, 7XX)

Students in all engineering disciplines who have a cumulative grade point average of at least 3.00 and the permission of the department chair can elect to take graduate-level courses. These courses will count for either undergraduate or graduate credit but not for both degree programs. Undergraduate students who enroll for undergraduate credit will be graded according to the standard undergraduate grading system, and the grade will be counted in the undergraduate grade point average. Tuition for the undergraduates in the graduate-level courses will be charged at the undergraduate rates provided the student does not exceed the total number of credits permitted for the academic year.

## Seamless Master's Degree Program

Academically qualified undergraduate students may be invited to participate in a Seamless Master's Degree program in chemical, civil, computer, electrical, environmental, or mechanical engineering. Qualified students who enter Manhattan College with Advanced Placement and/or undergraduate college credit will generally be in a position to take graduate courses during their senior year at Manhattan College while completing the requirements for the Bachelor's degree. It may then be possible to obtain a Master's degree with only an additional year of study.

Undergraduate students who have earned a minimum of 3.20 cumulative GPA by the end of the first semester of their junior year are eligible to apply for the Seamless Master's Degree program upon the recommendation of a member of the engineering faculty. Transfer students may be considered after completing courses at Manhattan College. All students participating in the Seamless Master's Degree program are required to submit an application for admission to that graduate program. The application must be submitted in the senior year through the Office of Admissions. The application is online. Students are required to complete the baccalaureate degree with a cumulative GPA of 3.00, or better, prior to continuing for the additional year of graduate study.

Students admitted into the seamless master's degree program may enroll in 500, 600, or 700 level courses while completing the requirements for the bachelor's degree. These

courses will count for either undergraduate or graduate credit but not for both degree programs. Because some required graduate courses are offered on a two-year rotation, admitted students must meet with the chair of the major department prior to their senior year in order to select appropriate 500, 600, and 700-level courses to satisfy the master's degree requirements. There is no tuition increase for enrolling in graduate courses during the senior year provided the student does not exceed the total number of credits permitted for the academic year.

After completing the undergraduate degree requirements, financial support may be available from individual departments for the additional year of graduate study. This support typically includes research assistantships, graduate assistantships, academic scholarships and grants, and industrial fellowships.

## Professional and Career Development

### Internships

Experiential learning is invaluable to an undergraduate engineering student. Engineering students are encouraged to seek full-time positions in the summer, and manageable, part-time positions during the school year. Such jobs can enhance learning and develop complementary skills and personal growth. The engineering programs at Manhattan College do not offer academic credit for such internships. However, a student may take ENGS 401 Internship for Engineering Students, a tuition-free, zero credit course, which will be shown on the student's transcript thus demonstrating participation in this type of experiential learning. The School of Engineering encourages its students to investigate the benefits of internships.

### Engineering Service

Service to the broader community is a Lasallian heritage that is exemplified in the engineering professions. Engineers are educated to serve the public via their work as professional employees of or as volunteers for public and private organizations – whether in design, manufacturing, project implementation, construction planning, public speaking, or teaching. They are also taught to consider the consequences of their work with respect to ethics and to sustainability. Students engaged in engineering service activities may take ENGS 402 Service for Engineering Students, a tuition-free, zero academic credits course, which will be shown on the student's transcript thus demonstrating participation in a contribution to the community. The School of Engineering strongly encourages its students to investigate the benefits of service.

### Professional Engineering Licensing

An important distinction for engineers is to become a licensed professional engineer. Receipt of the baccalaureate degree from an institution accredited by the EAC of ABET is one important step towards licensure. The requirements for licensure include a two part examination. Engineering students in good academic standing at Manhattan College may take the first part, the Fundamentals of Engineering (FE) examination, during their senior year. All engineering students are strongly encouraged to take and pass the FE examination. The examination is heavily based on mathematics, basic sciences, and the

engineering sciences. The engineering curricula at Manhattan College prepare the student for the examination.

## **Fellowships and Professional Schools**

Engineers have a variety of career options open to them within and beyond the engineering profession. Undergraduate engineers go on to complete advanced degrees in engineering and other disciplines and also pursue careers in teaching, business, law and medicine. Engineering students are encouraged to use the expertise and services of the Manhattan College Center for Graduate School and Fellowship Advisement (CGSFA). The CGSFA is focused on helping students understand undergraduate research experience in the context of graduate school, fellowships, and career pathways. CGSFA advisors will work with students to determine whether graduate school fits in with their own professional development plans.

## **Applying for Fellowships**

The Center for Graduate School and Fellowship Advisement is committed to helping students understand the process of applying to very competitive national and international fellowships. The CGSFA guides students seeking fellowship opportunities well-suited to their personal and professional goals, crafting applications, developing research proposals and preparing for interviews. A faculty committee reviews student applications for fellowships requiring an institutional nomination.

## **Preparation for Law School**

The Center for Graduate School and Fellowship Advisement works closely with the faculty Pre-law Advisor, the Center for Career Development, and Alumni Relations to provide advising, resources, and opportunities for students interested in pursuing law school. No single major at Manhattan College is a prerequisite for applying to law school, nor is there a pre-law major or minor. Students that do well in the application process have strong analytic and problem solving skills, critical reading skills, writing skills, communication skills, research skills, task management skills and a dedication to public service and promotion of justice, according to the American Bar Association. Students are also encouraged to join and actively participate in the St. Thomas More Law Society.

## **Pre-Health Advising and Preparation for Medicine and Dentistry**

CGSFA works closely with the Health Professions Advisory Committee (HPAC), a body of faculty members, to give guidance and support to students interested in careers in medicine, dentistry and allied health fields. We are available to help students investigate their career options in healthcare, and to discuss curricula, activities, internships, research, and application procedures in the health professions. We support candidates through all aspects of the application process, and we work to provide opportunities to prepare students to be competitive applicants to health professions schools.

## **Health Professions Advisory Committee**

The Health Professions Advisory Committee is a group of faculty members who give guidance to students interested in preparing for careers in medicine, dentistry and allied

fields. This committee helps students become aware of the course requirements and experiences essential for admission to professional schools. The committee advises students on the selection of programs of study that will give both background in the sciences and a broad liberal education to prepare them for effective participation in the human community. More detail and a list of minimum required courses for admissions to professional schools can be found in the undergraduate catalog section of Academic Resources.

## Pre-Health Concentration

The Pre-Health Concentration is recommended for students that wish to gain entrance to health professions schools, including medical school, dental school, veterinary school, optometry school, physician assistant programs and other health profession schools.

While students are not required to be a part of the concentration in order to get a committee letter of evaluation from HPAC, students are strongly encouraged to consider enrollment in this concentration to be part of the competitive cohort that applies to health professions schools each year.

## Academic Standing

Students are considered to be in good academic standing in the College when their Manhattan College cumulative (GPA) is at least 2.00. To be considered in good academic standing in the School of Engineering, a student must have a cumulative engineering GPA of at least 2.00 and the semester grade point average must be at least 2.00. Grade point averages are computed at the end of each semester or term.

Students are expected to make adequate progress towards fulfilling their degree requirements every term. Adequate progress is described in the annually published *School of Engineering Advising Manual*. Students who are not making adequate progress are subject to academic sanctions.

Each of the engineering undergraduate programs has selected two different courses defined as **gateway courses**. These are essential courses in the different programs and the ability to successfully complete the courses in a timely manner is mandatory. Examples of gateway courses are ENGS 206 Statics for the civil engineering and mechanical engineering programs and CHML 207 Process Calculations for the chemical engineering program. A list of the gateway courses is published in the annual *School of Engineering Advising Manual*. A student will be allowed a maximum of three (3) attempts to take and pass, with a grade of C (2.00) or better, each of the gateway courses in the student's program. After three unsuccessful attempts to pass a gateway course with a C (2.00) or higher, the student will be subject to dismissal from the engineering program (but not Manhattan College), as determined by the department chair and the dean.

A letter of **academic warning** is typically issued to each student earning a grade of D or F in any given term, even if the student is still in good academic standing in engineering. Letters of academic warning in two consecutive terms, while the student is still in good academic standing in engineering, will result in a meeting with the Assistant Dean or the Dean of Engineering. The letter of academic warning clearly spells out the danger to an academic program from receiving unacceptable grades.

A letter of **academic probation** is typically issued to each student failing to remain in good academic standing in engineering. Also, a letter of academic probation is typically issued to students receiving multiple unsatisfactory grades (especially grades of F) even though the student may be in good academic standing. Freshman failing to remain in good academic standing after their first term may be placed on academic probation. Students on probation are required to take a reduced course load of 12 credits for the following term and may be restricted from participating in Manhattan College activities. Students may remove themselves from academic probation by achieving a grade point average of 2.0 by the end of the following regular term. Failing to achieve good academic standing while on probation can lead to an academic contract or, in extreme cases, dismissal.

An **academic contract** is typically issued to students failing to achieve good academic standing in engineering while on academic probation. A letter of academic contract is also typically issued to a student if the most recent term grade point average falls below 1.0 even if the student was not on probation the previous term. A student may not be on academic contract for two consecutive terms without authorization of the Dean of Engineering. A student who does not successfully complete an academic contract is subject to suspension or dismissal.

Students are subject to **suspension** when they fail to satisfy the conditions of the academic contract or fail to achieve good academic standing while on probation. In these situations, a judgment is made by the dean that the student's studies should be interrupted for a designated time period, usually six months or one year, before reinstatement would be considered. Suspended students must present evidence of their ability to continue their studies successfully when applying for such reinstatement into the school of engineering. Upon return, suspended students are subject to an academic contract for their first term back.

**Dismissal** is a permanent separation from Manhattan College, not just the School of Engineering. A letter of dismissal from the college may be issued to each student failing to satisfy the conditions of the academic contract or failing to achieve good academic standing while on probation. A student may also be dismissed from the college when earning failing grades in all courses attempted in any one term.

Generally, a student not in good academic standing may not enroll in more than four courses or for more than 14 credits, whichever is less. Exceptions to this limitation require the written permission of the Assistant Dean or the Dean of Engineering.

Engineering students must earn a grade of C (2.0) or higher in:

CHEM 101	General Chemistry I	3
CHEM 103	General Chemistry Laboratory I	1
CHEM 102	General Chemistry II	3
CHEM 104	General Chemistry Laboratory II	1
MATH 185	Calculus I	3
MATH 186	Calculus II	3
MATH 285	Calculus III	3
PHYS 101	Physics I	3
PHYS 102	Physics II	3

as required by the program of study, before enrolling in any 300 level engineering courses. A grade of C (2.0) or higher is required in MATH 286 Differential Equations prior to taking any 400 level engineering courses.

In addition, the following program-specific courses are also included in those which are allowed no more than three grades less than a C (i.e., no grades of C-, D+, or D).

CHEM 309	Physical Chemistry I	3
CHEM 310	Physical Chemistry II	3
CHEM 319	Organic Chemistry I	3
CHEM 320	Organic Chemistry II	3
CHEM 323	Organic Chemistry Laboratory I	2
PHYS 201	Wave Theory of Light and Matter	3

A student is permitted no more than three grades below a C (2.0) in engineering courses. If a student earns less than a C (2.0) in more than three engineering courses, the student must repeat one or more of the courses with a grade of C (2.0) or higher. The course(s) to be repeated will be determined in consultation with and approval of the Assistant Dean of Engineering.

In addition, all CMPT and MATH courses required for any engineering program and any math and science elective courses are also included in this requirement. Additional courses may be added during the period of this catalog so students are advised to contact the chair of their department or the Assistant Dean of Engineering to determine if they will need to repeat a course in which they earn a grade of C- (1.67) or lower.

## General Education Requirements For Engineering Majors

A graduate of the School of Engineering is expected to be technically competent in the chosen program of study and also prepared as a citizen, an advocate, and a leader in the complex world of the 21st century. A broader education beyond science, technology, engineering, and mathematics (STEM) courses is expected of the modern engineering graduate. STEM courses must be augmented and balanced by courses from other disciplines such as English, foreign languages, history, religious studies, communication, sociology, education, government, business, and economics.

The EAC of ABET requires that engineering program curricula offer a professional component which must include "a general education component that complements the technical content of the curriculum and is consistent with the program and institution objectives." In order to meet ABET requirements and institutional objectives, students graduating from an engineering program at Manhattan College must successfully complete the following general education requirements:

- ENGL 110 First Year Composition 3 credits (required of all students)
- RELS 110 The Nature and Experience of Religion 3 credits (required of all students)
- Religious Studies - Additional 6 credits with students selecting one course from Elective Group A (Catholic Studies) and one course from Elective Group B (Global Studies and Contemporary Issues)



- Humanities, Social Sciences or other approved courses – 12 to 15 credits (depending on engineering program) from subject areas such as modern foreign languages (200 Level or higher), religious studies (beyond the 9 credits described above), fine arts, history, philosophy, English, government, economics, psychology, sociology, business and education.

A list of acceptable courses can be found in the annually updated *School of Engineering Advising Manual*. Additional restrictions may be applied and final acceptance of all courses meeting the general education requirements are subject to approval by the Office of the Dean of Engineering.

## Guidance Program

The guidance and advisory program for students in engineering follows the pattern established for the entire college. First-year students are advised by the Assistant Dean in the office of the Dean of Engineering. The chairs or designated faculty members of engineering departments act as advisors to upper division students. Those students may also receive guidance and advice through the office of the Dean of Engineering. The phone number for the office of the Dean of Engineering is (718) 862-7281.

Departmental faculty members are available to advise junior and senior students with respect to career opportunities in their major, as well as the program of study.

## Student Societies

Student chapters of several national engineering societies have been established at Manhattan College to assist the student in becoming familiar with the engineering profession: American Institute of Chemical Engineers, American Society of Civil Engineers, American Society of Mechanical Engineers, and Institute of Electrical and Electronics Engineers.

Other organizations of special interest to engineering students include: American Chemical Society; Society of Hispanic Professional Engineers; Society of Women Engineers; American Society of Heating, Refrigeration, Air Conditioning Engineers; The New York Water Environment Association; and the Society of Automotive Engineers. Chapters of Tau Beta Pi (Engineering), Omega Chi Epsilon (Chemical Engineering), Chi Epsilon (Civil Engineering), Eta Kappa Nu (Electrical Engineering), and Pi Tau Sigma (Mechanical Engineering) honor societies have been chartered at Manhattan College to recognize students who excel in scholarship and leadership. Membership in these national honor societies is open to juniors and seniors.

## Certification For Graduation

The Dean of the School of Engineering must certify that a student has satisfied all requirements for his or her program of study prior to graduation. The dean may approve program modifications, if necessary, to meet program requirements.



# Chemical Engineering

Dr. Sasidhar Varanasi

Chair, Department of Chemical Engineering

## Vision Statement

Our vision is to be recognized for producing highly-valued professionals who are leaders in developing innovative solutions to engineering problems.

## Mission Statement

Our mission is to graduate socially-responsible engineers with strong technical, communication, teamwork, and interpersonal skills, while incorporating the Lasallian Heritage of Manhattan College. This mission enables our graduates to pursue wide-ranging career paths in chemical and related industries, advanced graduate studies, and to engage in life-long learning.

## Chemical Engineering

Chemical engineers combine mathematics and advanced chemistry with engineering principles to design, develop and operate industrial processes for the manufacture of a host of products including fuels (such as gasoline and heating oil), plastics, synthetic fibers, paints, solvents, industrial chemicals and chemical intermediates, and a variety of consumer products such as foods, beverages, medicines, and cosmetics. A chemical engineer's education permits the student to work in design and construction, computer simulation, specialty chemicals, industrial gases, food processing, petroleum fractionation, power generation, polymers, pollution prevention and remediation, safety and accident management, pharmaceuticals, cosmetics, biotechnology, or pulp and paper industries.

The Chemical Engineering program includes course work in material and energy balances, thermodynamics, reaction engineering, heat and mass transfer, separation processes, chemical process control, process safety, and plant design. Lectures are complemented by comprehensive laboratory courses covering experiments in fluid mechanics, material sciences, and wide range of unit operations such as distillation, filtration, heat-transfer, mass transfer, and reaction engineering. Computer usage including software applications, programming, process simulation packages, and data acquisition are integrated throughout the curriculum. Important aspects of process safety, economics, environmental sustainability, and engineering ethics are also incorporated seamlessly into the curriculum. In addition to core-chemical engineering courses, all students are required to complete three advanced engineering electives and an advanced science/engineering elective to fulfill the degree requirements. The program offers New York State-approved areas of concentration in: (1) biopharmaceutical engineering, (2) cosmetic engineering, and (3) petroleum engineering. Students can choose their advanced science/engineering electives (total of four) to fulfill the course requirements for the selected concentration.

## Areas of Concentration in Chemical Engineering

In addition to the foundational program in chemical engineering, a student may focus on a concentration area, as described previously. The three New York State approved concentration areas are biopharmaceutical engineering, cosmetic engineering,

and petroleum engineering. The Biopharmaceutical Engineering concentration will prepare students for a variety of roles in the biopharmaceutical and biotechnology sectors, including discovery, development, formulation and production of pharmaceutical products and therapeutic agents. The Cosmetic Engineering concentration, the only one of its kind in the nation, will prepare students for a variety of roles in the cosmetic and consumer product industries, including product formulation and development, process engineering, and research and development. The Petroleum Engineering concentration covers topics of interest to engineers in the refining, fuels, natural gas mining and processing, and petrochemical industries. Students interested in one of the concentrations must meet with the department chair to plan for the necessary coursework.

### **Biopharmaceutical Engineering courses**

These courses will provide students with specialized training in microbial and cell growth, polymers and emulsions, bioseparation processing, bioprocess design, formulation of pharmaceutical products, and regulatory issues relevant to the biopharmaceutical field. Students are required to complete: CHML 461 Industrial Practice in Pharmaceutical Industry (3 credit hrs), and *at least three* of the following electives for a total of 12 credits: CHML 459 Formulations II (3 credit hrs); CHML 460 Emulsion & Polymer Tech (3 credit hrs); CHML 462 Manufacturing and Analysis of Pharmaceutical Products (3 credit hrs); CHML 463 Industrial Regulations & Quality (3 credit hrs); CHML 470 Bioseparations (3 credit hrs), or CHML 472 Bioreaction Engineering (3 credit hrs).

### **Cosmetic Engineering courses**

These courses will provide students specialized training in product formulation, polymers and emulsions, complex fluids, and regulatory issues relevant to cosmetic and consumer product industries. Students are required to complete: CHML 458 Formulations I (3 credit hrs); CHML 459 Formulations II (3 credit hrs); CHML 460 Emulsions & Polymer Technology (3 credit hrs), and *at least one* of the following electives for a total of 12 credits: CHML 452 Advanced Processing Theory (3 credit hrs); CHML 453 Advanced Processing Techniques (3 credit hrs); or CHML 463 Industrial Regulations & Quality (3 credit hrs).

### **Petroleum Engineering courses**

These courses focus on the production of gaseous and liquid hydrocarbons, the physical chemistry of these hydrocarbon resources and the downstream processing to provide valuable chemical intermediates and products. Students are required to complete: CHML 448 Petroleum Refinery Processing I (3 credit hrs); CHML 449 Natural Gas Processing I (3 credit hrs), and *select two* of the following three courses (6 credit hrs): CHMG 454 Petroleum Refinery Processing II (3 credit hrs); CHML 455 Natural Gas Processing II (3 credit hrs); and/or CHML 456 Oxidative Conversion of Shale Gas Components (3 credit hrs).

These areas of concentration prepare students for professional employment and for graduate study.

### **Pre-medical option**

Chemical engineering curriculum has a significant overlap with the curricular requirements of a B. S. degree recipient seeking admission to a MD program. Accordingly, Chemical engineering students who plan to enter the medical profession must complete BIOL 111

General Biology I; BIOL 112 General Biology II; BIOL 113 General Biology I Laboratory; BIOL 114 General Biology II Laboratory and CHEM 324 Organic Chemistry Laboratory II in addition to the courses required for graduation. Students interested in pursuing an MD degree must also consult with Drs. Bruce Liby (Pre-Health Professions Advisor) and Rani Roy (AVP, Student & Faculty Development) to plan for the necessary coursework.

## Environmental Engineering Minor within Chemical Engineering

An environmental engineering minor is available for students within the Chemical Engineering Department. Students pursuing in the environmental engineering minor are required to take ENGS 204 Environmental Engineering Principles I in their Sophomore year, followed by a minimum of four courses from the following: CEEN 305 Energy & the Environment, ENVL 406 Water and Wastewater Treatment Processes, ENVL 408 Environmental Engineering Design, ENVL 410 Hazardous Waste Design, ENVL 439 Environmental Engineering Projects, ENVL 505 Surface Water Quality Modeling and ENVL 507 Groundwater.

## Seamless Masters

Academically qualified undergraduate students may be invited to participate in a Seamless Master's Degree program. Additional information can be found on the School of Engineering webpage: <https://catalog.manhattan.edu/undergraduate/engineering/>.

## Program Educational Objectives

Graduates from the Chemical Engineering program at Manhattan College are expected to attain or achieve the following within a few years of graduation:

- Be recognized in the chemical and related industries, consulting firms, government agencies, and other venues as highly valued-professionals
- Progress towards or successfully complete graduate or other professional studies.

## Student Outcomes

The Chemical Engineering program uses the standard set of ABET, Inc. Student Outcomes (1) through (7) as described above under the School of Engineering (<https://catalog.manhattan.edu/undergraduate/engineering/>).

## Four-Year Program

The curriculum for the first year is common to all branches of engineering. Students begin to take designated courses from the chemical engineering curriculum in their sophomore year. The junior and senior years allow for concentrated studies in a variety of traditional and focus areas including material and energy balances, mass transfer, heat transfer, thermodynamics, reactor design and kinetics, separations, process safety, process control and computer-based process simulation and process design. Electives in the senior year allow students to study specialty areas such as cosmetic, biopharmaceutical, petroleum and environmental engineering. A representative four-year program is shown in the following table.

## Chemical Engineering

### Freshman

Fall	Credits	Spring	Credits
CHEM 101/CHEM 103 <sup>*</sup> or PHYS 101/PHYS 191 <sup>*</sup>		CHEM 101/CHEM 103 <sup>*</sup> 4 or PHYS 101/PHYS 191 <sup>*</sup>	4
ENGL 110 or RELS 110 <sup>b</sup>		3 ENGL 110 or RELS 110 <sup>b</sup>	3
ENGS 115		3 ENGS 116	3
MATH 185 <sup>*</sup>		3 MATH 186 <sup>*</sup>	3
General Education Elective <sup>**</sup>		3 General Education Elective <sup>**</sup>	3
	16		16

### Sophomore

Fall	Credits	Spring	Credits
CHEM 102*/CHEM104		4 ENGS 203	3
MATH 285 <sup>*</sup>		3 ENGS 204 or 206	3
CHML 201		3 MATH 286 <sup>*</sup>	3
CHML 202		1 CHML 208	3
CHML 205 <sup>a</sup>		3 CHML 209	3
CHML 207 <sup>a</sup>		3 CHML 211	1
		ENGS 302 <sup>+</sup>	0
ENGS 301 <sup>+</sup>	0		
	17		16

### Junior

Fall	Credits	Spring	Credits
CHEM 310		3 CHML 316	3
CHEM 319		3 CHEM 320	3
CHEM 323		2 CHML 321	3
CHML 305		3 CHML 339	3
CHML 306		3 CHML 342	3
Rel Studies Elective RELS 2xx/3xx <sup>b</sup>		3 ENGS 302 <sup>+</sup>	0
ENGS 301 <sup>+</sup>	0		
	17		15

### Senior

Fall	Credits	Spring	Credits
CHML 403		3 CHML 404	3
CHML 405		3 CHML 406	3
CHML 423		3 Adv Engineering Elective 400 level	3
Adv Sci/Eng Elective <sup>c</sup>		3 Adv Engineering Elective 400 level	3

Adv Engineering Elective 400 level	3 Rel Studies Elective RELS 2xx/3xx <sup>b</sup>	3
Gen. Edu. Elective **	3 Gen. Edu. Elective **	3
<hr/>		
18		18

Total Credits: 133

- \* A grade of C (2.0) or better in calculus I, II, III, differential equations, chemistry, and physics is required.
- \*\* A list of general education electives can be found in the Academic Advising Manual online (<https://inside.manhattan.edu/schools/engineering/advising.php>). Students must take two (2) social science courses, one (1) humanities and one (1) additional social science or humanities. For social sciences, these courses may be chosen from economics, government, psychology, political science, sociology or management (MGMT 201). For humanities, these courses may be chosen from history, philosophy, religious studies (in addition to the three (3) religious studies requirements), English (200 level), modern foreign language (200 level or higher), history-based art, history-based music, business law (LAW 203) and international studies (INTL 312).
- a A grade of 'C' or better is required in CHML 205 (Introduction to Thermodynamics) in order to take CHML 209 (Chemical Thermodynamics). A grade of 'C' or better is required in CHML 207 (Process Calculations), before a student will be allowed to CHML 208 (Chemical Engineering Principles I). These are the gateway courses for the chemical engineering program and students are permitted to take these courses only three times in order to achieve a C or better. Failing to do so will result in the student being dismissed from the program.
- b All engineering students are required to take ENGL 110, RELS 110, one RELS 2xx elective and one RELS 3xx elective.
- c Students must take an advanced science (chemistry, math or physics) or engineering elective in senior year from an approved list provided by the chemical engineering department chair. Certain advanced level mathematics courses will also count towards mathematics minor.
- + These are zero credit hour pass/fail courses that show up on the transcript with mandatory registration. You need to register for and pass ENGS 301 and ENGS 302 to fulfill graduation requirements.

## Courses

### CHML 201. Chemical Engineering Materials Science. 3 Credits.

Atomic structure; crystallographic concepts; relationship of structure to properties of metals, ceramics and organic materials. Equilibrium and non-equilibrium relationships of multiphase materials. Methods for changing properties of materials. Three lectures, three-hour laboratory every week. Fall. Prerequisite; CHEM 101.

### CHML 202. Chemical Engineering Materials Science Laboratory. 1 Credit.

This is the laboratory portion of CHML 201. Three hour laboratory every week, 1 credit, Fall.

**CHML 205. Introductory Thermodynamics. 3 Credits.**

A course that develops the concepts of energy, equilibrium, and reversibility for chemical engineering students. These principles, along with basic fluid mechanics, are incorporated into process applications commonly seen in the chemical industry. Three lectures. Fall. Prerequisites: CHEM 101, MATH 185, Corequisite: CHEM 102.

**CHML 207. Process Calculations. 3 Credits.**

Introduction to chemical engineering with principal emphasis on material and energy balance calculations. Application to chemical and environmental processes undergoing physical, chemical and thermal changes. Three lectures. Fall. Prerequisites: CHEM 101, MATH 185 (or MATH 103). Corequisite: CHEM 102.

**CHML 208. Chemical Engineering Principles I. 3 Credits.**

Introduction to fluid mechanics. Dynamics of fluids in motion; laminar and turbulent flow, Bernoulli's equation, friction in conduits; flow through fixed and fluidized beds. Study of pump and compressor performance and fluid metering devices. Three lectures. Spring. Prerequisites: CHML 207. MATH 186 (or MATH 104).

**CHML 209. Chemical Thermodynamics. 3 Credits.**

Application of the first and second laws to chemical systems. Thermodynamic properties of pure fluids and mixtures, phase equilibria and chemical equilibria. Thermodynamic analysis of industrial processes. Three lectures. Spring. Prerequisites: CHML 205, MATH 286 (MATH 201). Corequisite: MATH 286.

**CHML 210. Introduction to Biotechnology. 3 Credits.**

This is a survey course in biotechnology and biochemical engineering, which provides the foundation for those wishing to pursue a career in these fields. This course emphasizes how key concepts from biology, chemistry, and physics integrate to modern applications within the biological systems. Topics include fundamental biology principles, cell and tissue engineering, pharmaceutical processing and manufacturing, enzyme kinetics, and bioseparations. In addition, the bioethics portion of the course will cover the controversial topics including modified foods, cloning, bioterrorism, gene therapy, and stem cells. There will be guest lectures and a plant trip. Three hours a week. Spring.

**CHML 211. Chemical Engineering Principles I Fluids Lab. 1 Credit.**

A practical, hands-on understanding of fluid mechanics phenomena is critical to the successful practice of chemical engineering, and the design of chemical processes. The laboratory course provides basic exposure to equipment commonly used to move fluids and to measure the regimes, characteristic, flow rates, and energy losses during fluid flow. Experiments include measurement of hydrostatic forces and viscosity, friction losses during flow through circular pipes, Reynolds number estimation, orifice and venture meters for flow metering, and pump characteristics. Spring. Co-requisite: CHML 208.

**CHML 240. Chemical Eng. Comm. I. 2 Credits.**

Provides chemical engineering students with guidelines and models for effective writing of technical documents (laboratory reports, design reports, progress reports and theses) as well as correspondences that contain technical content (emails, memos, resumes and cover letters). Two hour lecture. Spring. Pre-requisites: ENGL 110.

**CHML 305. Chemical Engineering Principles II. 3 Credits.**

Theory and practice of heat transfer. Fundamentals of conduction and convection, with application to design of heat transfer equipment and systems. Three lectures. Fall. Prerequisite: CHML 207, CHML 208, MATH 286.

**CHML 306. Separation Process Design I. 3 Credits.**

A study of the principles of mass transfer operations. Application to the design of stagewise and continuous separation processes with emphasis on absorption and distillation, and equilibrium stage operations. Three lectures. Fall. Prerequisites: CHML 209, MATH 286.

**CHML 316. Computer Simulation and Design. 3 Credits.**

Use of modern simulation software to solve problems arising in chemical engineering processes and unit operations with an emphasis on material and energy balances and equipment specification. Pre-requisites: CHML 209, CHML 305, CHML 306, ENGS 116. Corequisite: CHML 321.

**CHML 321. Chemical Reaction Engineering. 3 Credits.**

A review of reaction rate theories, rate equations, reaction order, and reaction velocity constraints. Development of equations for batch, tank flow, and tubular flow reactors. Application of equations to engineering processes. Design of fixed and fluid bed reactors. Three lectures. Spring. Prerequisites: CHEM 310, CHML 209, MATH 286.

**CHML 339. Separation Process Design II. 3 Credits.**

Design of equipment and systems for separation processes based on rate-controlled-mass transfer. Applications in liquid extraction, absorption, drying, crystallization, and membrane separation. Three lectures. Spring. Prerequisite: CHML 306. Corequisite: CHML 316.

**CHML 340. Chemical Engineering Communications II. 2 Credits.**

This course prepares chemical engineering students how to (i) prepare effective presentations that represent technical work and (ii) successfully communicate that effort. Two hour lecture. Fall. Pre-requisites: ENGL 110.

**CHML 342. Process Safety and Quality Assurance. 3 Credits.**

The management of process hazards in the chemical, petrochemical, pharmaceutical, and process industries has become an increasing concern of legislators, employees, contractors and the public. In response to serious incidents, regulations have been enacted in many countries to establish management systems that identify and control process hazards while maintaining product quality. The major content areas are toxicology; industrial hygiene; toxic, flammable and reactive hazards; source, consequence and dispersion models; overpressure protection; hazards identification; risk assessment and probability. Spring. Co-requisite: CHML 339.

**CHML 400. Creativity & Innovation. 3 Credits.**

This course invites each student to learn some of the early work in innovation and creativity while exploring their own creativity skills. Being mindful of a diversity of possible majors within the student body, each is asked to consider innovation and creativity within their own major as well as in general. Through this course, students will enhance their skills in creativity and innovative problem solving and thinking with an aim to increasing the originality of their ideas and thereby help generate and sustain high levels of innovation both in a start-up and corporate environments. In addition, the course will lay the foundation of the basic principles of innovation management, open innovation and design thinking, a key cornerstone of evolving corporate innovation strategies. Students in this course will be expected to submit a special topic assignment. Pre-requisite: Permission from Instructor.

**CHML 403. Chemical Engineering Laboratory I. 3 Credits.**

Quantitative laboratory studies of operations such as fluid flow, filtration, heat transfer, mass transfer and fluidization which illustrate the fundamentals of momentum, heat and mass transfer. Laboratory safety, technical writing, and oral presentation skills are emphasized. Four hours of laboratory, field trips. Fall. Prerequisites: CHML 208, CHML 305, CHML 306.

**CHML 404. Chemical Engineering Laboratory II. 3 Credits.**

A continuation of the topics in CHML 403. Experimental topics include distillation, drying, fluidization, reaction kinetics, membrane processes, and computer-controlled processes. Laboratory safety, technical writing, and oral presentation skills are emphasized. Five hours of laboratory, field trips. Pre-requisites: CHML 321, CHML 339, CHML 403.

**CHML 405. Process and Plant Design I. 3 Credits.**

Application of the principles of chemical engineering to the design of chemical processes. The sequence of design methods and economic evaluations utilized in the evolution of a chemical process design, from initial process research to preliminary equipment design, is developed. Students work in three-person groups on a comprehensive plant design. Technical writing required. Two lectures and one two-hour problem period. Fall. Prerequisites: CHML 208, CHML 209, CHML 305, CHML 339, CHML 316, CHML 321. Corequisites: CHML 423.

**CHML 406. Process and Plant Design II. 3 Credits.**

Continuation of process development and design from CHML 405. Application of safety constraints, loss prevention, hazards evaluation, and engineering ethics to design of chemical processes and plants. Computer simulation software used for process design. Industrial review of design projects. Written and oral reports required only randomly assigned process plants. Two lectures and one two-hour problem period. Spring. Prerequisites: CHML 405.

**CHML 411. Transport Phenomena. 3 Credits.**

Development of the mass, energy and momentum transport equations. Use of these equations in solving chemical engineering problems. Three lectures. Spring. Prerequisites: CHML 208, CHML 305, CHML 306, MATH 286 (or MATH 203).

**CHML 412. Introduction to Biomedical Engineering. 3 Credits.**

Development of the mass, energy and momentum transport equations as they relate to biomedical systems such as natural and artificial organs. Flow characteristics of blood are studied and compared to conventional Non-Newtonian fluids. The use of traditional transport equations, modified for biomedical systems are covered and applied to the body and associated biomedical machinery. Three lectures. Senior year offered. Prerequisites: CHML 208, CHML 305, CHML 306, MATH 286.

**CHML 423. Process Control. 3 Credits.**

A study of dynamic behavior of first and second order processes under proportional, integral, and/or derivative control. Includes three liquid level experiments to supplement course material. Three lectures. Fall. Prerequisites: CHML 321.



**CHML 428. Petroleum Refinery Processing I. 3 Credits.**

Overview of a modern, integrated petroleum refinery: feedstock properties, product slate, and processes used to convert crude and intermediate streams into desirable products. Topics include hydrocarbon chemistry, crude oil properties, fuel product quality, impacts of worldwide environmental legislation, and overall operability and economic performance of refineries. Three lectures. Fall. Pre-requisite: CHEM320. Corequisite: CHML 405.

**CHML 429. Natural Gas Processing I. 3 Credits.**

Overview of natural gas industry with emphasis on gas plant operations. Students will develop a working knowledge of the major processes for gas compression, dehydration, acid gas removal and tail gas cleanup, sulfur recovery, cryogenic extraction of natural gas liquids (NGL), as well as LNG production, storage, and transportation. Three lectures. Pre-requisite: CHEM320. Pre-requisite or Co-requisite: CHML 405.

**CHML 430. Chemical Engineering Project. 2-3 Credit.**

An independent investigation, including literature, theoretical and/or experimental studies of a chemical engineering project under the supervision of a faculty advisor. (For students of superior ability.) Written and oral reports required. Fall and Spring. Prerequisite: Permission of Department Chair.

**CHML 431. Chemical Engineering Project. 3 Credits.**

An independent investigation, including literature, theoretical and/or experimental studies of a chemical engineering project under the supervision of a faculty advisor. (For students of superior ability.) Written and oral reports required. Fall and Spring. Prerequisite: Permission of Department Chair.

**CHML 432. Special Topics. 3 Credits.****CHML 434. Chemical Engineering Economics. 3 Credits.**

Interest, cash flow diagrams, investment balance equation, analysis of economic alternatives (cost only and investment projects) using annual worth, present worth, and discounted cash flow. Effects of depreciation and income taxes. Economic optimization of engineering systems. Three lectures. Prerequisite: Senior Status\*.

**CHML 437. Petroleum Refinery Processing II. 3 Credits.**

Continued discussion of a modern, integrated petroleum refinery: topics include energy audits, environmental aspects, societal impacts. Topics also include linear programming, dynamic modeling and control of refinery processes using general process simulators. Three lectures. Spring. Prerequisite: CHML 428.

**CHML 438. Natural Gas Processing II. 3 Credits.**

Continued discussion of the natural gas industry with emphasis on mining and pretreatment of natural gas and its components, environmental and societal impacts, novel conversion chemistry, including gas-to-liquids processes and dynamic modeling. Three lectures. Spring. Prerequisite: CHML 429.

**CHML 446. Communication Skills for Chemical Engineers. 2 Credits.**

Culminating course for senior chemical engineering majors who have completed courses in the CHML 440-CHML 444 sequence. A grade will be awarded based on improvement and effectiveness of oral and written communication skills. Corequisite: CHML 447. Fall 2016.

**CHML 447. Communication Skills Capstone. 1 Credit.**

Culminating course for senior engineering majors. Technical and non-technical skills for preparing and presenting effective engineering communications in the workplace.

**CHML 452. Advanced Processing Theory. 3 Credits.**

The theory of multi phase and reactive flow processes, including: non-newtonian and time-dependent flow, heat transfer at boundaries, powder and solids processing, surface forces, phase transitions, ripening and sintering, flow with chemical transformations. Applications include cosmetics, personal care products, adhesives, food technology, pharmaceutical and advanced coating formulations. Prerequisite: CHML 411 or CHMG 710 or equivalent.

**CHML 453. Advanced Processing Techniques. 3 Credits.**

Applications of advanced processing techniques for multiphase processes including: multiphase flow, pumping, mixing, homogenization, atomization, drying. Applications include cosmetics, personal care products, adhesives, food technology, pharmaceutical and advanced coating formulations. Pre-requisites: CHML 403, CHML 404 or equivalent.

**CHML 456. Fundamentals of Engineering for Chemical Engineers. 3 Credits.**

The course prepares chemical engineering students for the Fundamentals of Engineering Exam. Covers topics from the morning section of the exam which are part of the general engineering curriculum and topics from the afternoon section specific to chemical engineering. The course consists of a lecture period followed by problem sets with question and answer sessions. Final grade assigned after proof of registration for the F.E. exam is submitted.

**CHML 457. Oxidative Con. of Shale Gas. 3 Credits.**

Methane and ethane from shale gas reserves may prove to be an attractive alternative feedstocks for the production of hydrocarbon intermediates and liquid fuels. In this course all of the oxidative conversion technologies will be developed, modeled and evaluated. Special focus will be on the calculation and study of the production economics and sustainability indices as compared to conventional technology. Fall. Prerequisite: Senior Status and approval by department chair.

**CHML 458. Formulations I. 3 Credits.**

This is the first of two formulations courses which are focused on developing the knowledge and skills set necessary to carry out effective formulation design and engineering of complex fluids to develop products for the cosmetic and consumer industry. This course will focus on skin care formulations with the aim to develop formulation design rules to enhance performance attributes such as hydration, photoprotection, tactile and visual sensory. This will be done through effective engineering of the microstructure-processing-performance linkages for emulsions, complex fluid gels and creams utilized in skin care. Co-requisite: CHMG 760 or CHML 460.

**CHML 459. Formulations II. 3 Credits.**

This is the second of two formulations courses which are focused on developing the knowledge and skills set necessary to carry out effective formulation design and engineering of complex fluids to develop products for the cosmetic and consumer industry. This course will focus on hair care and make-up formulations with the aim to develop formulation design rules to enhance performance attributes such as hair conditioning, tactile and visual sensory. This will be done through effective engineering the microstructure-processing-performance linkages for structured fluids and semi-solids utilized in producing hair-care and make-up products. Pre-requisite: CHMG 758 or CHML458.

**CHML 460. Emulsion & Polymer Tech. 3 Credits.**

This is an introductory complex fluids course with a particular emphasis on emulsions and polymer technologies. The following topics as applied in an engineering context will be covered: advanced characterization including rheology and scattering, physico-chemical aspects and stability of suspensions, emulsions, surfactants and micelles. Polymer science fundamentals required for applications will additionally be covered. Applications include cosmetics, personal care products, adhesives, food technology, pharmaceutical and advanced coating formulations. Pre-requisites: CHEM 310, 320; CHML 308.

**CHML 461. Industrial Practice in Pharmaceutical Industry. 3 Credits.**

Advanced study of the principles used for pharmaceuticals production with an emphasis on physiochemical processes governing development and manufacturing of pharmaceutical agents and drugs. Technologies covered include aseptic, vaccines, injectables, ophthalmics, ingestible and Oncology. Analysis of quality control processes in conformance with government oversight and regulations, especially the FDA. Pre-requisite: Senior Status or Approval of Graduate Director.

**CHML 462. Manufacturing and Analysis of Pharmaceutical Products. 3 Credits.**

Systematic study of the unit operations, practices and analysis techniques that are important to the pharmaceutical products industry. Topics covered include agitation, aeration, crystallization, mixing of solids, mixing of complex fluids, analysis of particle size distributions, granulation and blending, pelletizing, encapsulation, principles and practice of freeze drying, and quality assurance and testing. Pre-requisite: CHMG 761 or CHML 461.

**CHML 463. Industrial Regulations&Quality. 3 Credits.**

Discussion of a variety of aspects of regulated and quality-driven industries: Regulations - CFR, regulating authorities, regulatory inventories, applications, compliance, and recalls; Quality Systems - Six Sigma®, GXP, and TQM, documentation, measurement, safety, training, and cleanliness; Quality Control Techniques - Validation, ASTM testing, run rules, control charts. Pre-requisites: Approval of Graduate Director or senior status.

**CHML 464. Fundamentals of Engineering for Chemical Engineers. 0 Credits.**

This course prepares students for the Fundamentals of Engineering (FE) Chemical Exam. Topics are covered from the areas of mathematics, probability and statistics, engineering sciences, computational tools, material science, chemistry, fluids, thermodynamics, material and energy balances, heat transfer, mass transfer/separations, reaction engineering, process design, process control, safety, and ethics. The course consists of a lecture period followed by problem sets with question and answer sessions. Offered in Spring semester. Pass/Fail. Must have Senior status.

**CHML 465. Biopharmaceutical Formulations. 3 Credits.**

This course is focused on effective product and formulation design for the biopharmaceutical industry. The course will cover key aspects of biotherapeutic product development including: Formulation design for liquid dosage forms; Development of analytical control strategy such as stability indicating (QC) assays; and Characterization assays through various biophysical techniques. Co-listed with CHMG 765. Senior Status and approval by department chair.

**CHML 470. Bioseparations. 3 Credits.**

Bioseparations consists of a sequence of recovery and separations steps that maximize the purity of the bioproducts while minimizing the processing time, yield losses, and costs. Topics include: centrifugation and filtration, extraction, membrane separations, electrokinetic separations, precipitation, crystallization, and chromatography. Students in this course will be expected to submit a special topic assignment. Pre-requisites: CHML306 and CHML339.

**CHML 471. Chemical Engineering Project Management. 3 Credits.**

Study of planning, construction, operation and control of an industrial chemical engineering project; comparison of senior management, functional management and project management, the role of Engineering Manager, project organization structures, project planning using tools such as the Program Evaluation and Review Technique (PERT), use of critical path methods (CPM) and project control; emphasis on the project management concept and its applicability to a wide range of industrial projects; case studies are used to examine specific management issues including staffing, project direction, scheduling, resolving critical issues, and solving team personnel problems.

**CHML 472. Bioreaction Engineering. 3 Credits.**

Application of engineering principles to biological processes. Topics include enzyme-catalyzed reactions, kinetics of cell growth and product formation; aeration, agitation and oxygen transfer; bioreactor design and scale-up; biological waste treatment, and fermentation laboratory experiments. Three lectures. Prerequisites: CHML 306, CHML 321.

**CHML 511. Transport Phenomena. 3 Credits.**

Development of the mass, energy and momentum transport equations. Use of these equations in solving chemical engineering problems. Three lectures. Spring. Prerequisites: CHML 208, 305, 306, MATH 203.

**CHML 535. Air Pollution Control. 3 Credits.**

Emphasis on particulate control. Industrial sources and regulatory codes for particulate emissions; review of fine particle technology; development of performance equations and design procedures for gravity settlers, cyclone-electrostatic precipitators, baghouse and venturi scrubbers; atmospheric dispersion and stack design; overview of gaseous control equipment.

**CHML 539. Industrial Catalysis. 3 Credits.**

An industrially-oriented course designed to teach students the fundamentals and application of catalysts used in chemical, petroleum and environmental industries. Application of chemistry, materials, surface science, kinetics, reactor design and general engineering as applied to making everyday products. Role of catalysts in the effective production of transportation fuels, modern catalytic converters for automobiles, bulk chemicals, polymers, foods, fertilizers, etc. Three lectures. Prerequisite: Senior Status\*.

**CHML 549. Advances in Combustion and Fuel Process Technologies. 3 Credits.**

The course will cover fundamentals and advances in flame theory, combustion, fuels, and oxidizers; experimentation, simulation and modeling; emission controls, toxicology, clean fuel conversions and alternative fuels. Prerequisites: CHML 207, CHML 305, CHML 306, CHML 308, CHML 321, MATH 286 (MATH 203).

**CHML 550. Engineering Economics. 3 Credits.**

Interest, cash flow diagrams, investment balance equation, analysis of economic alternatives (cost only and investment projects) using annual worth, present worth, and discounted cash flow. Effects of depreciation and income taxes. Economic optimization of engineering systems. Three lectures. Fall. Prerequisite: Senior Status\*.

**CHML 572. Accident and Emergency Management. 3 Credits.**

Chemical process safety, including emergency planning and response; fires, explosions and other accidents; dispersion fundamentals, applications and calculations, hazard and risk assessment; legal considerations. Three lectures. Prerequisite: Senior Status\*.

**CHML 574. Green Engineering Design. 3 Credits.**

Multi-disciplinary considerations and techniques for greener engineering design; Historical perspective of the Industrial Revolution and the impacts of industrialization; Industrial activity and the environment, including energy usage and resource depletion; Improved industrial and municipal (POTW) operations, including process design and development; Green engineering economics, including life cycle cost assessment; Design for the environment, including waste prevention, water and energy conservation, and packaging; Wastewater treatment, air pollution and fugitive emissions control, and solid waste disposal methods; Sustainable development and the role of engineers. Three lectures. Prerequisite: Senior Status.

**CHML 575. Contemporary Food Engineering. 3 Credits.**

This course examines the application of chemical engineering unit operations to food manufacturing. Topics include heating, cooling and freezing of foods; mass transfer in foods; reaction kinetics; chemical, microbiological and biochemical aspects of food engineering; dehydration, thermal and non-thermal processing; food handling, public health and sanitation; green and sustainable technologies in food processing; food packaging, transport, storage and shelf-life. Prerequisites: CHML 208, CHML 305, CHML 306, CHML 321.

**CHML 741. Special Topics in Chemical Engineering. 3 Credits.**

# Civil & Environmental Engineering

Dr. Anirban De

Chair, Department of Civil and Environmental Engineering

## Vision Statement

The Civil and Environmental Engineering Department will be nationally recognized for producing leaders in the fields of civil and environmental engineering.

The Civil and Environmental Engineering Department will continue to develop and enrich the educational experience of its students. This is accomplished by providing specialized courses in a variety of sub-disciplines such as structural, environmental, geotechnical, transportation, and water resources engineering. This objective is also accomplished through the Master's degree programs in civil engineering, construction management, and environmental engineering and the strong research programs at both the undergraduate and graduate levels which provide unique opportunity for enrichment of student experience. Students pursuing a master's degree in environmental may choose between an M.E. and an M.S. degree

## Program Educational Objectives

Graduates of the undergraduate Civil Engineering program will be recognized for their:

- Technical skills in civil & environmental engineering
- Ethical practices and moral character
- Leadership, achievement, and involvement in engineering and engineering-related professions
- Dedication to furthering the engineering profession through continuous self-improvement
- Commitment to engineering as a service-to-humanity profession through practicing sustainable engineering for New York and the world.

## Student Outcomes

The Civil Engineering program uses the standard set of ABET, Inc., Student Outcomes (1) through (7) as described above under Engineering.

## Civil Engineering Program

### Mission Statement

The mission of the undergraduate Civil Engineering program is to develop an educational plan for each of our students so upon graduation they are prepared to continue their graduate studies or enter into the civil engineering profession.

The goal is to prepare students to function professionally as responsible members of the global engineering community dedicated to life-long learning and collaborative practice, discovery and sharing a breadth of knowledge. The program puts particular emphasis on introducing the students to the broad range of civil engineering disciplines.

Civil engineers use mathematics , along with the basic sciences and engineering sciences, in the study of the structural, geotechnical, transportation, environmental, and water resources engineering disciplines. These disciplines allow a civil engineer, working to improve the environment, to plan, design and construct the industrial plants of the world, the great public works, the housing, the bases for space exploration and the transportation networks.

Structural engineering deals with the analysis, design and construction of buildings, bridges, ships, aircraft, and other structures. Environmental engineering allows a civil engineer to analyze and model the environment, assess the effects of human activities on it, and design control facilities to ensure improvement and protection of environmental resources. Geotechnical engineering focuses on soil behavior and the subsequent design of adequate supports for all structures resting on the earth. Transportation engineering emphasizes the planning, design, and construction of efficient transportation infrastructure such as highways, airports, railways, seaports, and public transport. Water resources engineering focuses on water usage and distribution across networks as well as the design and construction of infrastructure that control bodies of water, such as rivers, lakes, reservoirs, and oceans.

Students obtain strong technical knowledge by taking at least two required courses in each of the above disciplines. Students also choose from a wide range of elective courses, where they can concentrate on specific topics in their areas of interest.

All undergraduate students in the department pursue a four-year degree in civil engineering. The program also accommodates students who wish to pursue a minor in environmental engineering, in addition to their civil engineering major.

## Four-Year Program in Civil Engineering

The curriculum for the first year is common for all the majors in engineering. Students take the foundational courses in the sophomore year. The junior and senior years allow for concentrated studies in the areas of structural, environmental, geotechnical, transportation, and water resources engineering. A representative program is shown below.

### First Year

Fall	Credits	Spring	Credits
MATH 185 <sup>1</sup>		3 MATH 186 <sup>1</sup>	3
CHEM 101/103 or PHYS 101/191 <sup>1</sup>		4 CHEM 101/103 or PHYS 101/191	4
ENGS 115		3 ENGS 116	3
ENGL 110 or RELS 110		3 General Education Elective	3
General Education Elective		3 ENGL 110 or RELS 110	3
	16		16

### Second Year

Fall	Credits	Spring	Credits
MATH 285 <sup>1</sup>		3 MATH 286 <sup>1</sup>	3
CHEM 102/CHEM104 <sup>1</sup>		4 PHYS 102/PHYS 192 <sup>1</sup>	4

ENGS 204 <sup>1</sup>	ENGS 230 <sup>1-5</sup>	3
ENGS 206 <sup>1-5</sup>	3 CIVL 201 <sup>1</sup>	
CIVL 201 <sup>1</sup>	3 or CIVL 202 <sup>1</sup>	3
or CIVL 202 <sup>1</sup>	Approved Science Elective <sup>2</sup>	3
Approved Science Elective <sup>2</sup>	3	
	-	
	16	16

**Third Year**

Fall	Credits	Spring	Credits
CEEN 303 <sup>1-4</sup>		3 CEEN 307 <sup>1</sup>	3
CEEN 304		1 CEEN 308	3
CEEN 305		3 CIVL 309 <sup>1</sup>	3
CIVL 302 <sup>1-4</sup>		3 CIVL 310 <sup>1-4</sup>	3
CIVL 305 <sup>1</sup>		3 CIVL 311	1
CIVL 306		3 CIVL 312 <sup>1</sup>	3
	16		16

**Fourth Year**

Fall	Credits	Spring	Credits
CIVL 406 or ENVL 406 <sup>6</sup>		3 CIVL 411 or ENVL 408	3
CIVL 410 or ENVG 507 <sup>6</sup>		3 CIVL 412	3
CIVL 409 <sup>6,7</sup>		3 CIVL/ENVL Elective	3
CIVL/ENVL Elective		3 CIVL/ENVL Elective	3
General Education Elective <sup>4</sup>		3 General Education Elective <sup>4</sup>	3
RELS Catholic Studies or RELS Contemporary/Global Studies		3 RELS Catholic Studies or RELS Contemporary/Global Studies	3
	18		18

Total Credits: 132

- <sup>1</sup> These **courses must be passed with a grade of C (2.0) or better.**
- <sup>2</sup> Students are required to take **one** approved science elective in their sophomore or second year of the program. They may take this class either in the fall or in the spring semester. Approved science electives are: BIOL 222 Biology for Engineers, together with BIOL 224 BiologyForEngineers Laboratory; and SCI 301 Earth Science for Engineers.
- <sup>3</sup> Students are not allowed to enroll in any junior level or third year courses before completing all **prerequisite** mathematics, science and engineering science courses.
- <sup>4</sup> Every civil engineering student is required to take an approved course in the Manhattan College School of Business. This course will substitute for one general education course.
- <sup>5</sup> Students are not allowed to repeat the course more than three times. Failure to successfully complete the course in three attempts will lead to dismissal from the program.



- <sup>6</sup> *The student must pass these courses with a grade of C (2.0) or better to enroll in CIVL 411 and/or ENVL 408.*
- <sup>7</sup> **The C requirement is waived for students in the environmental concentration.**

## Environmental Engineering Minor within Civil Engineering

An environmental engineering minor is available for students within the Civil & Environmental Engineering Department. All Civil Engineering students follow the same curriculum for the first three years. For those pursuing a minor in Environmental Engineering, the following sequence is recommended for the fourth year. The required classes are the capstone design sequence (ENVL 406/ENVL 408) in Water Treatment / Environmental Engineering Design and either Geoenvironmental Engineering (CIVG 501) or Groundwater (ENVG 507). In addition, there are three environmental engineering electives.

Senior			
Fall	Credits	Spring	Credits
ENVL 406		3 ENVL 408 (Environmental Engineering Design)	3
CIVG 501 or ENVG 507		3 CIVL 412 (Highway Design)	3
CIVL 409 (Reinforced Concrete) <sup>7</sup>		3 Environmental Elective*	3
Environmental Elective*		3 Environmental Elective*	3
RELS Elective		3 RELS Elective	3
General Education Elective		3 General Education Elective	3
	18		18

Total Credits: 36

\*Environmental electives are selected in consultation with the Environmental Engineering Graduate Program Director in the Civil & Environmental Engineering Department. Students who wish to enroll in the EAC of ABET accredited M.E. program (see below) must take one science course (currently, either Biology or Earth Science) as one of their Environmental Electives.

**Completion of the Environmental Engineering Minor allows students entry into the EAC of ABET Accredited Masters of Engineering (M.E.) Graduate Program provided they have a cumulative G.P.A. of 3.0.**

In addition, there are numerous opportunities for partial or full financial support for graduate studies including:

- Graduate Internships
- Graduate Fellowships
- Graduate Research Assistantships (GRAs)
- Graduate Laboratory Assistants (GLAs)

## Fundamentals of Engineering Examination-- Civil & Environmental Engineering Department

All students must take the Fundamentals of Engineering (FE) examination in their fourth year as a requirement to graduate from the program. While students are not required to pass the FE exam, they are required to take the FE exam and document that they have completed the requirement.

### Civil Engineering Courses

#### **CIVL 201. Introduction to Civil Engineering. 3 Credits.**

Basic components of buildings, and how they are constructed; Topics of soils, excavation, foundations and building loads and materials (steel and concrete); Building design and construction process; How to conduct surveys, read and create maps and drawings in plan and cross-sectional views to scale; Introduction to basic concepts of sustainability and energy efficient green building design; Basic elements of engineering economics. Three hours. Must earn no grade lower than a C. Prerequisite: MATH 185.

#### **CIVL 202. Transportation. 3 Credits.**

Principles of transportation and traffic engineering; an introduction to highway design including roadway alignment, stopping sight distance, and horizontal and vertical curves; traffic flow theory and quantification of highway level of service; an examination of multi-modal transportation systems in the context of social, economic, and political considerations; and practical issues regarding data collection, analysis, and evaluation. Fall. Three credits. Must earn no grade lower than a C. Prerequisite: MATH 185.

#### **CIVL 302. Structural Analysis I. 3 Credits.**

Analysis of determinate structures (beams, frames, and planar trusses): Loads and reactions, internal resisting forces (axial force, shear force, and bending moment), static equilibrium and superposition, free-body diagrams, shear force and bending moment diagrams, deflections. Three hours. Fall. Must earn no grade lower than a C. Prerequisite: ENGS 230, CIVL 201, PHYS 102.

#### **CIVL 305. Computer Solutions of Civil Engineering Problems. 3 Credits.**

Matrix algebra, eigenvalue problems, nonlinear equations, simultaneous linear algebraic equations, numerical integration, initial value and boundary value problems in ordinary differential equations. Three lectures. Fall. Must earn no grade lower than a C. Prerequisites: MATH 286, ENGS 230 with a grade of C or better.

#### **CIVL 306. Civil Engineering Materials. 3 Credits.**

Study of ferrous and nonferrous metals; physical properties in relation to the phase diagram. Consideration is given to plastics and other materials. The relationship of aggregates and other constituents of concrete and related conditions to the strength and related properties of concrete. Study of physical properties of wood. Study of asphalt properties and application to pavements. One-hour lecture and one two-hour laboratory. Prerequisite: ENGS 230.

**CIVL 309. Steel Design. 3 Credits.**

Design of steel structures subjected to various loads, such as dead, live, snow, wind, and earthquake forces. Design of tension members, beams, columns, and connections according to the AISC Specifications. Design project. Use of AISC Steel Construction Manuals. Spring. Three lectures. Must earn no grade lower than a C. Prerequisite: CIVL 302.

**CIVL 310. Introductory Geomechanics. 3 Credits.**

Origins of soil and rock; physical properties of soils and phase relationships; geostatic stresses and effective stress principles; seepage and flownet; one-dimensional compression and consolidation; shear strength of cohesive and cohesionless soils. Three lectures. Spring. Must earn no grade lower than a C. Prerequisites: ENGS 230, CEEN 303. Corequisite: CIVL 311.

**CIVL 311. Soil Mechanics Laboratory. 1 Credit.**

Soil description and classification systems; site characterization; index property tests for water content, particle-size distribution, and plasticity characteristics; engineering parameter tests for compaction characteristics, permeability, one-dimensional consolidation, and shear strength. One credit. Three-hour laboratory. Spring. Corequisite: CIVL 310.

**CIVL 312. Structural Analysis II. 3 Credits.**

Analysis of statically indeterminate structures considering loadings, support movements and thermal effects. Mathematical modeling, virtual work, flexibility method, stiffness method, slope deflection, and moment distribution. Analysis and modeling of structures using general purpose finite element, and structural computer programs. Three lectures. Spring. Must earn no grade lower than a C. Prerequisites: CIVL 302, CIVL 305.

**CIVL 398. Introduction to Professional Development: Seminar 1. 1 Credit.**

A series of lectures and field trips designed to expose students to different facets of the Civil and Environmental Engineering profession. Material will cover current trends in the professional and research fields within the discipline, as well as closely associated disciplines. Students will write papers based on material covered. All three courses will be offered each semester. Students will be required to take all three courses in order to graduate. These courses are only open to Junior and Senior students in the Civil & Environmental Engineering undergraduate program. The cumulative credits in the three courses will count as a technical elective.

**CIVL 399. Introduction to Professional Development: Seminar 2. 1 Credit.**

A series of lectures and field trips designed to expose students to different facets of the Civil and Environmental Engineering profession. Material will cover current trends in the professional and research fields within the discipline, as well as closely associated disciplines. Students will write papers based on material covered. All three courses will be offered each semester. Students will be required to take all three courses in order to graduate. These courses are only open to Junior and Senior students in the Civil & Environmental Engineering undergraduate program. The cumulative credits in the three courses will count as a technical elective.

**CIVL 403. Civil Engineering Economy and Law. 3 Credits.**

Economical conditions and law requirements impact on Civil Engineering projects. Time value of money, equivalency, present worth, future worth, depreciation, economic comparisons; Law: contracts, torts and malpractice, patents and copyrights, business associations, commercial law, real estate law, environmental law. Three lectures.

**CIVL 404. Geology. 3 Credits.**

The origin, nature, and distribution of materials that comprise the Earth; dynamic internal and surface natural processes, with particular attention to their effect on engineered construction. One or more field trips outside the regular class schedule. Three lectures. Prerequisite: Senior Status\*.

**CIVL 405. Rock Mechanics. 3 Credits.**

This course provides the students and civil engineers with a working knowledge of rock mass and processes relevant to exploration, design, construction and performance of large civil and tunnel structures. The course will cover origin and types of rock, rock mass classifications, rock properties, civil engineering projects, fluid flow through jointed rock mass and slope stability.

**CIVL 406. Structural Analysis III. 3 Credits.**

General introduction to vibration and dynamics of structures. Analysis of multistory and complex frames, bridges and other structures due to wind and seismic loading. Influence lines for statically indeterminate structures. Cables and space frames. Analysis of structures using state-of-the-art structural computer programs. Two lectures, one two-period program session and two hours professional development outside the classroom. Fall. Must earn no grade lower than a C. Prerequisites: CIVL 309, CIVL 312.

**CIVL 407. Groundwater Resources. 3 Credits.**

Legislation and legal considerations. Evaluation of groundwater resources and associated geology and hydrology. Derivation of governing transport equations. Groundwater quality. Analysis of well problems. Systems approach to problems. Study of pollution problems and geothermal energy. Three lectures. Prerequisite: CEEN 303.

**CIVL 409. Reinforced Concrete Design. 3 Credits.**

Design of reinforced concrete structures. Design of structural members, such as beams, columns, slabs and foundations. Ultimate strength and serviceability requirements, latest ACI Code. Theoretical, practical, and economic considerations. Design projects. Three credits. Two two-period lectures. Fall. Must earn no grade lower than a C. Prerequisite: CIVL 309, CIVL 312.

**CIVL 410. Introduction to Geotechnical Applications. 3 Credits.**

Application of geomechanics principles to analyzing and designing foundations and slopes. Topics covered in detail include: shallow and deep foundations; unsupported-slope stability; lateral earth pressure theory and its application to basement, rigid, and flexible retaining walls; overview of ground improvement methods and technologies; overviews of construction and constructability. Three credits. Two two-period lectures. Must earn no grade lower than a C. Prerequisites: CIVL 309, CIVL 310.

**CIVL 411. Capstone Structural Design. 3 Credits.**

This course provides the students with a culminating design experience in which they will use the skills and knowledge gained throughout the curriculum to work as a team on a real design project. Three credits. Two two-period lectures and design; two hours professional development outside the classroom. Must earn no grade lower than a C. Prerequisites: CIVL 309, CIVL 406 CIVL 409. Corequisite: CIVL 410.

**CIVL 412. Highway Design. 3 Credits.**

Design standards and geometrics of highways; traffic volume and flow related to geometrics; earthwork estimations and economic analysis of highway alternates; basic pavement and roadside drainage design; planning, locating, and designing a highway segment. Three lectures. Spring. Prerequisite: CIVL 202 and Senior Status or Permission of Chair.

**CIVL 413. Hydraulics. 3 Credits.**

Looping pipe systems, three-reservoir problem; open channel flow, non-rectangular channels, critical flow at bridge piers and humps, backwater calculations, surface curves; unsteady flow, discharge under varying head, unsteady flow equation, water hammer, surge tanks; introduction to coastal hydraulics; hydrology, stream flow system analysis. Three lectures. Spring Prerequisite: CEEN 303, CEEN 307 with a minimum of C grade.

**CIVL 415. Civil Engineering Projects. 3 Credits.**

Individual student research or design projects, utilizing computer methods, experimentation and literature surveys. Proposal and report required. Under the sponsorship of a civil engineering faculty member; must be approved in writing by the Chairperson; for students of superior ability. Prerequisite: Senior Status\*.

**CIVL 416. Fe Prep. 0 Credits.****CIVL 417. Civil Engineering Practice. 3 Credits.**

This course presents non-engineering skills needed to prepare students for professional careers in engineering. Through classroom lectures, workshops, collaborative projects and professional presentations from guest speakers, students will learn how the following are essential to an engineers full professional life: Public vs. Private Sector employment opportunities; Diversity; Ethics; Legal and Financial Matters; Public Involvement; Social Media; Client Relations; The Competitive Process; Program Management; Project Management; and Leadership.

**CIVL 418. Trans Eng Capstone Design. 3 Credits.**

This course is the capstone design course in transportation engineering. It is a project based course focusing on the design of roadways, highways and bridges according to the AASHTO, ITE Best Practices, and other state guidelines and codes. The students will work in groups and are responsible of submitting several written reports and participate in a technical oral presentation. In addition, the course will focus on Highway Funding; Travel Forecasting; Ethical Practice; Design Standards and Geometrics; Interchanges and Intersections; Parking; Traffic Control Devices; Highway Maintenance; Roadside Design; Earthwork; Traffic Flow and Capacity Analysis. Spring.

**CIVL 419. Civil Engineering Projects. 3 Credits.**

Individual student research or design projects, utilizing computer methods, experimentation and literature surveys. Proposal and report required. Under the sponsorship of a civil engineering faculty member; must be approved in writing by the Chairperson; for students of superior ability. Pre-requisite: CIVL 415, Senior Status.

**CIVL 420. Bridge Engineering. 3 Credits.**

Planning and design of highway bridge projects. Bridge Engineering will include analysis and design of both superstructure and substructure. Design will be based on LRFD and the specifics of bridge loading according to AASHTO specifications. Design project. One three-hour period. 3 credits. Pre-Reqs: CIVL309, 409, 410, 412 all with a grade of B or better.

**CIVL 424. Essential Traffic Control. 3 Credits.**

Traffic Control design for roadways and intersections. The history, design, and implementation of traffic control devices including markings, signs, signals, and Intelligent Transportation Systems (ITS). Layout of text and pictograms for signs. Timing of static and actuated traffic signals, sensor placement, and intersection geometry. ITS components including fiber and wireless communication, cameras and monitors, and operational protocols. Efficient and automated toll collection methods. Two lectures (One on campus, one remote). Prerequisite: CIVL 202. Corequisite: CIVL 412.

**CIVL 425. Airport Design. 3 Credits.**

Airport design standards for airside operations based on aircraft characteristics. Topics include aircraft performance, airport layout, site location, wind analysis, runway geometric design, obstruction analysis, taxiway design, lighting/markings/signage, air traffic control and airfield pavement. Prerequisite: CIVL 202; Corequisite: CIVL 412.

**CIVL 426. Advanced Pavement Engineering. 3 Credits.**

Advanced pavement design methods including mechanistic, empirical and mechanistic-empirical methods; pavement distresses and distress survey methods; advanced destructive and non-destructive tests on asphalt mixtures to determine mechanistic properties and structural condition of pavement layers; pavement maintenance techniques and rehabilitation methods; Life-Cycle Cost Analysis for pavement structures.

**CIVL 440. Special Topics. 1 Credit.****CIVL 498. Introduction to Professional Development: Seminar 3. 1 Credit.**

A series of lectures and field trips designed to expose students to different facets of the Civil and Environmental Engineering profession. Material will cover current trends in the professional and research fields within the discipline, as well as closely associated disciplines. Students will write papers based on material covered. All three courses will be offered each semester. Students will be required to take all three courses in order to graduate. These courses are only open to Junior and Senior students in the Civil & Environmental Engineering undergraduate program. The cumulative credits in the three courses will count as a technical elective.

## Civil and Environmental Engineering Courses

**CEEN 303. Fluid Mechanics. 3 Credits.**

Fluid properties; fluid statics; calculation of static forces on submerged objects; fluid flow; flow balances; derivation and application of the Bernoulli equation; analysis of pressure pipe systems; force of fluid; head loss; pipe friction losses; minor friction losses; open channel flow; rivers; road drainage; partially full pipes; fluid measurement. Three lectures. Fall. Must earn no grade lower than a C. Prerequisite: ENGS 206. Corequisite: CEEN 304.

**CEEN 304. Fluid Mechanics Laboratory. 1 Credit.**

Application and verification of principles of fluid mechanics. Three hours. Fall. Corequisite: CEEN 303.

**CEEN 305. Energy & the Environment. 3 Credits.**

Course involving the application of thermodynamics, mass balances and engineering principles to energy production, thermal pollution, air quality, climate change, resource recovery and sustainability. Specific topics include the thermodynamics of energy production, pollutant emissions, the Clean Air Act, meteorology, atmospheric transport of pollutants, the global energy balance, the energy water nexus, CO<sub>2</sub> emissions and climate change, alternative energy supplies, energy conservation and resource recovery. Three lectures. Fall. Prerequisite: CHEM 102, ENGS 204.

**CEEN 307. Hydraulic Design. 3 Credits.**

Hydrology; river hydraulics; peak discharge estimation; detention basin design; water distribution systems; storm sewer design; sanitary sewer design. Four design projects: river flood and bridge analysis using HECRAS; storm sewer design for a subdivision using SWMM; water system design for a town using EPANET; sanitary sewer design for a subdivision using SWMM. Three credits. Two lectures, one two-hour project period. Spring. Must earn no grade lower than a C. Prerequisite: CEEN 303.

**CEEN 308. Reliability Analysis in Civil and Environmental Engineering. 3 Credits.**

Statistics, data analysis and inferential statistics, distributions, confidence intervals. Application of statistics and probability theory in civil engineering disciplines; structures, water resources, transportation, environmental, and geotechnical. Three lectures. Fall. Prerequisite: MATH 286 (or MATH 203), ENGS 230 with a minimum of C grade. Prerequisites: ENGS 230, MATH 286.

**CEEN 309. Environmental Law. 3 Credits.**

A course exploring a particular topic within United States Government. Specific topics vary and are announced by the Dept. This course is cross-referenced with GOVT325, Special Topics: U.S. Govt.

**CEEN 401. Sustainable Water Resource Engineering. 3 Credits.**

An examination of water resource issues at local, regional and global scales. Special emphasis will be placed on the effects of climate change on water resources, restoration of aquatic ecosystems, and methods of low-impact development and green infrastructure. The course will include an examination of water resources policy and regulation, sustainability principles and concepts, water issues in the developing world, water supply protection, approaches to flood damage control, watershed management and water quality. Control and emerging water resource issues in the New York City and the Tri-state areas will be used as case studies.

## **Environmental Engineering Courses**

**ENVL 316. Environmental Engineering Field Applications. 3 Credits.**

Undergraduate combined lecture and laboratory course will introduce students to environmental analyses used in water and wastewater treatment processes, as well as field sampling techniques and sample analyses. Students will be introduced to the statistical analysis and interpretation of environmental data. Field trips to water and wastewater treatment plant sites included.



**ENVL 406. Water and Wastewater Treatment Processes. 3 Credits.**

Basic principles of groundwater hydrology and subsurface contaminant transport. Construction and use of flow nets; pumping well and aquifer response under confined and unconfined conditions. Contaminant sources, transport, adsorption and degradation; the behavior of contaminant (non-aqueous phase liquids (NAPLs)) in the subsurface. Design of groundwater extraction systems, subsurface cutoff walls, caps, and emerging technologies for soil treatment. Three lectures. Fall. Must earn a grade no less than a C. Prerequisites: ENGS 204, CEEN 303, CEEN 305.

**ENVL 408. Environmental Engineering Design. 3 Credits.**

Engineering design concepts applied to environmental facilities and infrastructure. The course may include the design of new or upgraded facilities such as water treatment plants, wastewater treatment plants, industrial treatment plants and hazardous waste treatment systems. All designs will include: data analysis to establish basis of design: process selection and sizing; plant layout and siting; major equipment and instrumentation selection and sizing; energy and chemical requirements; overall plant mass balances and cost analysis; hydraulic profile. Two lectures and one two-period design sessions. Spring. Prerequisites: ENGS 204, CEEN 305, CEEN 307, ENVL 406/ENVG 506 with a minimum C grade, Senior Status or permission of the Chair.

**ENVL 410. Hazardous Waste Design. 3 Credits.**

Fundamentals of hazardous waste management and treatment design. Includes review of current hazardous waste regulations, groundwater and air contaminant fate and transport concepts, and risk assessment. Primary focus on the treatment processes including air stripping of volatile compounds, bioremediation of contained aquifers and soils, and incineration. Emerging treatment technologies will also be presented. Spring.

**ENVL 417. Environmental Law. 3 Credits.****ENVL 439. Environmental Engineering Projects. 1-3 Credit.**

Environmental Engineering Projects Individual student research or design projects, utilizing computer methods, laboratory experimentation, field studies and literature surveys. Proposal and report required. Under the sponsorship of an environmental engineering faculty member. Must be approved in writing by the chair. For students of superior ability. Fall, Spring.

**ENVL 505. Surface Water Quality Modeling. 3 Credits.**

Principles governing the transport and fate of contaminants in rivers, streams, lakes and reservoirs. Water quality standards, transport processes, water quality modeling for water-borne disease, dissolved oxygen, and nutrient enrichment. Engineering controls to meet water quality objectives and case studies are presented. Computer solutions to some problems are required. Three lectures. Fall.

**ENVL 507. Groundwater. 3 Credits.**

Basic principles of groundwater hydrology and subsurface contaminant transport. Construction and use of flow nets; pumping well and aquifer response under confined and unconfined conditions. Contaminant sources, transport, adsorption and degradation; the behavior of contaminant (non-aqueous phase liquids (NAPLs)) in the subsurface. Design of groundwater extraction systems, subsurface cutoff walls, caps, and emerging technologies for soil treatment. Three lectures. Fall.



**ENVL 517. Environmental Law. 3 Credits.**

Introduction to legal aspects of environmental regulations. Historical perspectives and current regulation for air, land and water quality. Application of 'cradle to grave' tracking. Three lectures. Fall.

# Electrical & Computer Engineering

Dr. George Giakos

Chair, Department of Electrical and Computer Engineering

## Vision Statement

The Electrical and Computer Engineering programs will be recognized for educating highly-valued engineers grounded in fundamental principles who are leaders in developing innovative solutions to engineering challenges.

## Mission Statement

The mission of the Electrical and Computer Engineering programs is to bring together students from diverse backgrounds, provide them with a superior technical education based on the fundamental principles of discovery and collaboration, foster an appreciation of ethical, environmental, and economic concerns, and develop within them an understanding of the importance of life-long learning. Graduates of the program will be prepared to become successful and socially-responsible professional and community leaders.

Central to the programs are certain principles, including the importance of collaboration, the discovery and sharing of knowledge, the appreciation of ethical, safety, and economic concerns, and the need for life-long learning and advanced study.

## Program Educational Objectives

Graduates of either the Electrical Engineering or Computer Engineering programs will be valued by the engineering community. Graduates will be recognized for their:

- Practicing electrical and computer engineering in a broad range of industries and technical skills in professional or advanced academic settings.
- Committing to the engineering profession and to expanding their knowledge and skill set with increasing independence and responsibility,
- Conducting themselves in a responsible, professional, and ethical manner.
- Participating in activities that support humanity and economic development nationally and globally, developing as leaders in their fields of expertise.

## Student Outcomes

SO 1:an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

SO 2:an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors

SO 3:an ability to communicate effectively with a range of audiences

SO 4:an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts

SO 5:an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

SO 6:an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

SO 7:an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

The Electrical and Computer Engineering programs use the standard set of ABET, Inc. outcomes (1) through (7) as described above under Engineering.

## Electrical and Computer Engineering

Electrical engineers and computer engineers work at the frontier of high technology and are involved in research, the creation of new ideas, the design and development of new products and technologies, manufacturing and marketing activities. In the Electrical and Computer Engineering (ECE) Department, students acquire significant hands-on-lab experience through undergraduate and graduate concentrations and research projects. These areas include bioelectrical engineering, cybersecurity, power grids and green energy engineering, internet-of-Things (IoT), wireless communications, mobile programming, artificial intelligence, and machine learning.

## Computer Engineering

The application of computer-based technology is growing at a phenomenal rate. In fact, it pervades our lives. As a result, there is ongoing demand for engineers who can build complex systems which integrate computer hardware and software. This has given rise to the field of computer engineering. By combining the core courses in electrical engineering and relevant knowledge from computer science, the computer engineering curriculum prepares students to enter this challenging field.

A liberal choice of technical electives accommodates a broad spectrum of educational objectives. Those wishing to prepare for an advanced degree may do so by selecting advanced theoretical courses in computer engineering, electrical engineering or computer science. Those wishing to obtain breadth in general engineering practice may do so by choosing electives in engineering science or other engineering disciplines.

## Four-Year Program in Computer Engineering

The curriculum for the first year is common to all engineering disciplines within the college.

Additionally, students intending to major in computer engineering as well as those in electrical engineering complete a common sophomore year in which basic concepts of contemporary digital environments, modern computer hardware organizations, and analysis of systems underscore coursework. This maximizes the flexibility that a student enjoys in ultimate selections of a major. Discipline-specific courses are undertaken in both the junior and senior years where software and elements of computer science are

integrated into the design of complex computer-based systems. Computer engineering majors can choose from a variety of technical electives to enhance individual educational objectives. The four-year program is summarized below.

## **Electrical Engineering**

Wide in scope and variety, electrical engineering ranges from design of solid state devices and increasingly complex microcircuits to design of communication systems or large scale power generating equipment and plants to meet society's accelerating demand for clean energy. The fundamental principles of information processing and control inherent in an electrical engineer's background find applications in such diverse areas as industry and medicine.

Coursework in both the Electrical Engineering and Computer Engineering programs emphasize understanding of electrical circuits and electromagnetic theory as a framework for courses in electronics, energy conversion, computers, automation and engineering systems. Embedded laboratory experiences associated with the lecture materials provide design experience, stress principles, methods, accuracy of measurements and the limitations of electrical instruments and measuring devices. Senior multidisciplinary research and design projects offer opportunities for creative work with personal guidance.

## **Four-Year Program in Electrical Engineering**

Because of the significant overlap in preparation for career opportunities in both electrical and computer engineering, the four-year curriculum for both programs is essentially the same. This common approach provides maximum flexibility and permits a student to delay the choice of major. Differences in the major depend on the selection of 'concentration courses' during the senior year as well as choice of electives. These selections are made with the consultation, advisement, and approval of the chair of the department. The curriculum for the first year is common to all branches of engineering. An important element in the electrical engineering experience is provided within the Capstone Design course. Working cooperatively with computer engineering majors, modern complex systems can be understood as a true integration of hardware and software elements and the role that each plays in such applications. This course offers opportunities for creative work with personal guidance by a faculty member. The four-year program is summarized below.

## **Undergraduate Concentrations**

The integrative curriculum prepares students to identify, formulate, and execute solutions to real-world problems. Students learn how to integrate engineering principles with science, and use engineering tools with activities that reinforce the concepts learned in the classroom. As part of these efforts, concentration study areas have been approved by the New York State Education Department (NYSED). Paired with the rigorous curricula and hands-on project-based approach, concentrations reinforce the broad relevance of the powerful problem-solving methodologies of engineering and illuminate enabling technologies for applications of technology. The ECE Department offers the following undergraduate concentrations:

- Bioelectrical Engineering
- Cybersecurity

- Power Grids and Green Energy Engineering

### **Concentration in Bioelectrical Engineering**

The concentration in Bioelectrical Engineering provides a broad background in the principles, design, and application of bioelectrical, bioinspired, and biocomputing systems and techniques; integrating hardware, signal processing, and artificial intelligence techniques.

For the Concentration, all students are required to take:

EECE 443 Biomedical Imaging Systems 3

EECE 455 Bionanophotonics 3

and two elective courses from the following:

EECE 417 Mobile Applications and Cybersecurity 3

EECE 436 Computer Graphics 3

EECE 442 Computer Vision and Imaging 3

EECE 447 Image Processing and Pattern Recognition 3

EECE 448 Applied Machine Learning 3

EECE 453 Applied Bioinformatics 3

EECE 457 Bioinspired Robotic Vision Systems 3

Total credit hours for concentration: 12

### **Concentration in Cybersecurity**

The concentration in Cybersecurity provides a broad background in the principles, design, and applications of cybersecurity systems for cloud computing and Internet of Things (IoT).

For the Concentration, all students are required to take:

EECE 454 Big Data, and Deep Learning 3

EECE 458 Cybersecurity Systems 3

and two elective courses from the following:

EECE 417 Mobile Applications and Cybersecurity 3

EECE 442 Computer Vision and Imaging 3

EECE 448 Applied Machine Learning 3

EECE 460 Data and Application Security 3

EECE 461 Network Security Systems 3

EECE 570 Modern Portable Wireless Devices 3

Total credit hours for concentration: 12

### **Concentration in Power Grids and Green Energy Engineering**

The concentration in Power Grids and Green Energy Engineering provides a broad background in the principles, analysis, and design of large electric power and green energy systems, smart grids, electric energy conversion, and the application of electronic devices at high power levels.

For the Concentration, all students are required to take:

EECE 466 Green Energy Sources 3  
 EECE 477 Power and Energy Systems 3

and two elective courses from the following:

EECE 400 Industrial Electric Drives 3  
 EECE 439 Protective Relays 3  
 EECE 591 Power Design of Green Buildings 3  
 EECE 592 Smart Grid Technologies 3  
 EECE 593 Power Electronics 3  
 EECE 594 NERC Standards & Operation 3  
 EECE 595 SCADA Systems 3  
 EECE 596 Wind Energy Essentials 3

Total for Concentration credit hours: 12

## Electrical Engineering

### Freshman

Fall	Credits	Spring	Credits
ENGS 115		3 ENGS 116	3
MATH 185*		3 MATH 186*	3
CHEM 101/103 or PHYS 101/191		4 CHEM 101/103 or PHYS 101/191	4
ENGL 110 or RELS 110		3 ENGL 110 or RELS 110	3
GEN ED ELEC		3 GEN ED ELEC	3
	16		16

### Sophomore

Fall	Credits	Spring	Credits
EECE 201		3 EECE 203	3
EECE 210		3 EECE 232	3
EECE 229		3 MATH 286*	3
MATH 285*		3 PHYS 102	3
ENGL ELECTIVE		3 PHYS 192	1
GEN ED or RELS ELEC		3 GEN ED or RELS ELEC	3
	18		16

### Junior

Fall	Credits	Spring	Credits
EECE 303		3 EECE 304	4
EECE 305		4 EECE 306	4
EECE 307		4 EECE 311	3
EECE 321		3 EECE 315	4
GEN ED ELEC		3 EECE 326	3
	17		18

**Senior**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EECE 410		3 EECE 411	3
EECE 477		3 EECE 425	3
TECHNICAL ELECTIVE		3 EECE 474	3
TECHNICAL ELECTIVE		3 TECHNICAL ELECTIVE	3
TECHNICAL ELECTIVE		3 TECHNICAL ELECTIVE	3
TECHNICAL ELECTIVE		3 GENERAL EDUCATION ELECTIVE	3
		18	18

Total Credits: 137

**Computer Engineering****Freshman**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
ENGS 115		3 ENGS 116	3
MATH 185		3 MATH 186	3
CHEM 101/103 or PHYS 101/191		4 CHEM 101/103 or PHYS 101/191	4
ENGL 110 or RELS 110		3 ENGL 110 or RELS 110	3
GEN ED ELEC		3 GEN ED ELEC	3
		16	16

**Sophomore**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EECE 201		3 EECE 203	3
EECE 210		3 EECE 232	3
EECE 229		3 MATH 286	3
MATH 285		3 PHYS 102	3
ENGL ELECTIVE		3 PHYS 192	1
GEN ED or RELS ELEC		3 GEN ED or RELS ELEC	3
		18	16

**Junior**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EECE 303		3 EECE 304	4
EECE 305		4 EECE 306	4
EECE 307		4 EECE 311	3
EECE 321		3 EECE 315	4
GEN ED ELEC		3 EECE 320	3
		17	18

**Senior**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EECE 410		3 EECE 411	3

EECE 476	3 EECE 473	3
TECHNICAL ELECTIVE	3 EECE 475	3
TECHNICAL ELECTIVE	3 TECHNICAL ELECTIVE	3
TECHNICAL ELECTIVE	3 GENERAL EDUCATION ELECTIVE	3
TECHNICAL ELECTIVE	3 TECHNICAL ELECTIVE	3
<hr/>		
18		18

Total Credits: 137

#### Footnotes

- \* Students must earn a grade of C (2.0) or better in calculus I, II, III, differential equations, chemistry and physics.

#### Notes:

1. EECE 201 Fundamentals of Electrical Systems Analysis I and 203 Electrical Systems Analysis II must be completed with a grade of C (2.0) or better.

## Courses

### EECE 201. Fundamentals of Electrical System Analysis I. 3 Credits.

Basic concepts of Electrical Networks. Fundamental analysis of resistive, capacitive and inductive networks using nodal and loop analysis. Additional analysis techniques including Superposition, Thevenin and Norton Theorems. Transient analysis of first-order systems. Operational amplifiers. Use of PSpice for the analysis of electrical networks. Three hours of lecture per week and three-four lab sessions during the semester.

### EECE 203. Fundamentals of Electrical System Analysis II. 3 Credits.

Transient behavior of 1st and 2nd order systems. AC steady state analysis. Power considerations in single and polyphase circuits. Transformers and magnetically coupled networks. Use of Pspice for the analysis of electrical networks. Three lecture hours per week and three-four lab sessions during the semester. Pre-requisite: EECE 201.

### EECE 210. Software Engineering I. 3 Credits.

This course is an introduction to the engineering approach to computer software development and design. This course will give the students the opportunity to gain a practical experience of software production environment like that found in the software industry. The course covers the fundamentals of programming, and is divided into four modules that introduce the students to C, C++, Java, and Python programming languages.

### EECE 229. Introduction to Digital Systems. 3 Credits.

This course introduces the fundamental principles of the design of digital systems. The material includes number representations, switching algebra, and logic systems for the analysis and synthesis of combinational and sequential circuits. Basic design concepts and implementation technology, and the use of HDL and computer-based design tools are also covered. The course will include a course-embedded laboratory component. Three lectures. Lab. Fall.



**EECE 232. Computer System, Organization & Design. 3 Credits.**

This course presents register transfer systems and datapaths, microprocessors, microprocessor architecture and operation, instruction formats, assembly language programming, procedures and parameter passing, system bus timing, interfacing memory and I/O ports, serial and parallel data transfer, and interrupts. C-language programming for hardware device interfacing is introduced. A course-embedded laboratory will be included. Three Lectures/Lab.

**EECE 303. Signals and Systems I. 3 Credits.**

Modeling and analysis of continuous-time systems. Convolution of signals and representation of linear time invariant systems. Fourier series. The Fourier Transform and its applications. The Laplace Transform and its applications to continuous-time systems. Stability of continuous time systems. Four hours a week. Fall. Prerequisite: EECE 203.

**EECE 304. Signals and Systems II. 4 Credits.**

The Sampling Theorem. The Z Transform and discrete-time systems analysis. Stability of discrete-time systems. Design of analog and digital filters. The Discrete Fourier Transform and its applications. The Fast Fourier Transform. State-space analysis. Four hours of lecture per week and three-four lab sessions during the semester. Prerequisite: EECE 303.

**EECE 305. Electronic Systems I. 4 Credits.**

Terminal characteristics of solid-state devices. Power supply design. Transistor circuit biasing. Graphical analysis of transistor circuits. Small signal transistor circuit models and gain analysis. Selected lab sessions during the semester. Prerequisite: EECE 201.

**EECE 306. Electronic Systems II. 4 Credits.**

Multistage transistor circuit analysis and design. Frequency response of electronic circuits. Operational amplifiers. Power amplifiers. Digital electronic circuits. Selected lab sessions during the semester. Prerequisite: EECE 305.

**EECE 307. Mathematical Methods. 4 Credits.**

Vectors and vector analysis. The del operator and gradient, divergence, and curl operations, The Divergence Theorem and Stokes' Theorem. Line, surface, and volume integrals. Fundamentals of linear algebra, vector spaces, dimension, and rank. Matrix operations, inversion techniques. Systems of equations. Eigenvalues and eigenvectors. matrix diagonalization and systems of differential equations. Four lectures. Fall. Prerequisite: MATH 285 (or MATH 201).

**EECE 311. Applied Electromagnetics. 3 Credits.**

An introduction to the principles of Electromagnetics with particular emphasis on waves and their applications. Topics will be chosen from: nature of electromagnetism; fields; transmission lines (lumped parameter models, lossless lines, open- and short-circuit models, standing wave ratios, transient responses, impedance matching); radiation; fiber optics; telecommunication systems. Three Lectures. Spring. Prerequisite: EECE 307.

**EECE 315. Probability and Statistics for Engineers. 4 Credits.**

Basic concepts of probability theory, discrete and continuous random variables and their distributions, moments and characteristic functions. Empirical distribution functions. Parameter estimation and measures of their quality. Confidence limits. Linear regression. Hypothesis testing and statistical approaches to engineering decisions. Four lectures Fall. Prerequisite: MATH 285 (or MATH 201).

**EECE 320. Software Engineering II. 3 Credits.**

Students will learn the concepts of developing Android applications using Java. Students will apply the basics of Java programming language. Students will develop programs with conditionals and loops, design and implement recursive algorithms, understand basic mechanisms of the Object-Oriented Paradigm (OPP), use and interpret the Application Programming Interface (API) of some of the most common Java classes and of Android application development using the Android software development kit. (SDK). This course provides skills to start with Android Studio Editor.

**EECE 321. Embedded Systems Design. 3 Credits.**

This hardware oriented course emphasizes the components and techniques used in the design of embedded systems. Topics include system design methodologies and techniques, microcontroller hardware design, and software implementation using the C programming language. Students are required to demonstrate an understanding of the material by completing a comprehensive in-depth design and test of an embedded system. Pre-requisite: EECE232.

**EECE 326. Instrumentation Systems. 3 Credits.**

Detection, acquisition, and analysis of information from the environment. Topics will include: sensors and measurement methods, instrumentation and transducers for the measurement of signals, information conditioning, computer control of data acquisition, and interpretation of results. Pre-requisite: Junior status, EECE 201, EECE 203, EECE 303, EECE 305.

**EECE 400. Industrial Electric Drives (IED). 3 Credits.**

Hands-on experiments and demonstrations in industrial electric drives, requirements placed by mechanical systems on electric drives, and their role in various applications such as flexible production systems, energy conservation, renewable energy and transportation. Power electronics in drives using switch-mode converters and pulse width modulation to synthesize the voltages in dc and ac motor drives. Design of a controller using Matlab/Simulink.

**EECE 404. Bioinstrumentation. 3 Credits.**

Design principles of biomedical devices, bioelectronics, medical nanodevices, transducers, sensors, interface electronics, microcontrollers, and engineering programming. Signal modalities, bioelectrical signal monitoring, acquisition, analysis, and processing. Case studies and platform-based designs of medical devices, and instrumentation.

**EECE 410. Capstone Design I. 3 Credits.**

This course is the first semester of a year-long effort in which senior ECE students, working in teams or individually, complete a project under direction of a faculty coordinator and mentor. The project must address a question of importance related to electrical and/or computer engineering. In this first semester, students will: identify the problem to be investigated; research the associated topics including relevant literature; develop the engineering tools (e.g., application software, HLLs) as needed or appropriate; develop a comprehensive plan for completion of the project; and complete any necessary preliminary testing or feasibility studies. The plan must reflect those normally produced by professional engineers in similar assignments. The team members will meet frequently with the faculty mentor to discuss and evaluate progress. The faculty mentor will lecture on those topics common to such projects as well as any technical material that is necessary. four laboratory/lecture hours. Fall. Pre-Requisite: Senior Status.

**EECE 411. Capstone Design II. 3 Credits.**

Students will complete the engineering design undertaken in EECE 410. The outcomes to be achieved are consistent with those specified in the ABET general engineering criteria. In particular, when completed, students will have: understood modeling associated with a design; demonstrated skills in using a computer in the course of an engineering design; exhibited critical thinking; have solved an open-ended problem; successfully functioned on an interdisciplinary team; completed a successful engineering design; shown that they can communicate effectively; have understood ethical implications of their efforts; and understood how continued learning is important in refinement of the enterprise. To meet these outcomes, students will be required to make a presentation before faculty of the department. In addition, students or teams must submit a final report that will be evaluated by members of the department or invited reviewers. Three Laboratory/lecture hours. Spring. Prerequisite: EECE 410.

**EECE 416. NERC Standards and Operation. 3 Credits.**

North American Electric Reliability Corporation (NERC) standards and related compliance concerns in relationship to operational principles of the power systems.

**EECE 417. Mobile App. & Cybersecurity. 3 Credits.**

The proliferation of smart, consumer mobile, and medical devices provide new security vulnerabilities. This course will focus on the security features and limitations on smartphones, mobile telecommunication systems, portable healthcare monitoring devices, and sensor networks. Materials will cover smartphone security, mobile location privacy, wireless sensor security, and security challenges in medical device industry.

**EECE 419. Senior Project A. 1-3 Credit.**

Independent investigation, under the guidance of an approved advisor and the sponsorship of an electrical engineering faculty member, terminating in a final report, and when feasible, a tested design. Written permission of departmental chair is required. Course is Pass/Fail grading.

**EECE 420. Senior Project B. 1-3 Credit.**

Independent investigation, under the guidance of an approved advisor and the sponsorship of an electrical engineering faculty member, terminating in a final report, and when feasible, a tested design. Written permission of departmental chair is required.

**EECE 421. Embedded Systems. 3 Credits.**

This course provides a comprehensive understanding of Embedded Systems Design at the subsystem level. It combines theory and hands-on driven course, giving students a chance to deal with embedded system topics, and then use those concepts to work on various applications such as Internet of Things (IoT) in the craft of academic research. The goal is to introduce the design concepts of a reliable, safe, and secure Embedded System. Prerequisite: EECE 322.

**EECE 422. Introduction to Remote Sensing. 3 Credits.**

This course is intended to provide an introduction to remote sensing objects with applications in defense and environment. The course covers the basic principles of image sensors and techniques, image interpretation, remote sensing theory, and digital image analysis in relation to optical, thermal, and microwave remote sensing systems. Examples of remote sensing applications will be presented along with methods for obtaining quantitative information from remote sensing imagery.

**EECE 425. Control Systems Design. 3 Credits.**

Principles of linear feedback control systems. System modeling. Transient response and steady-state error analysis. Stability and analysis of systems from Routh-Hurwitz, Nyquist, and Root Locus viewpoints. Controller design and compensation techniques. Three lectures. Prerequisite: EECE 303.

**EECE 427. DSP System Design. 3 Credits.**

The design of modern digital signal processing software and hardware using actual DSP devices, analog interfacing to DSP hardware. A review of Signal processing concepts, design of FIR & IIR filters, design of algorithms for computing the FFT and Inverse FFT, analog interfacing hardware on the DSK board, the use of the MatLab Signal Processing package as a part of the overall DSP system design process. Prerequisites: EECE 303, EECE 304.

**EECE 433. Photonics. 3 Credits.**

Introduction to Optical Engineering. Principles of reflection and refraction of light. Geometrical Optics: lenses and optical instruments. Elements of Lasers, Light Modulators and Detectors. Optics from a systems perspective, Diffraction and Interference of light waves. Coherent optical signal processing.

**EECE 434. Bulk Power System Operation. 3 Credits.**

Operation of the bulk electric power system in North America. Basic types of high voltage equipment and station configurations. Methods and equipment to control power flow and voltage levels on the power system.

**EECE 436. Computer Graphics. 3 Credits.**

Basic concepts of computer graphics systems including display devices, graphics software and the display of solid object. Point plotting procedures; line drawing algorithms and circle generators. Displays and controllers; storage and refresh devices. Two dimensional transformations; clipping and windowing. Graphics software; windowing functions, display files; geometric models. Interactive raster graphics. Three dimensional graphics including surface display, perspective and hidden surface removal. A project will be carried out in the Electrical Engineering Computer Laboratory. Three lectures. Prerequisite: Senior Status.

**EECE 437. Introduction To Quantum Concepts and Computing. 3 Credits.**

The Q(uantum) bit as carrier of information. Quantum states as Hilbert space vectors and their matrix representations. Operators, Eigenvalues and Eigenvectors. Bloch sphere representation of a qubit. Quantum postulates and elements of quantum dynamics. Evolution of a two state system. Quantum gates and elements of system architecture. Criteria for successful quantum computation. Some current problems in system realization. Senior Status. Pre-requisite: EECE 307.

**EECE 438. Multimedia Techniques. 3 Credits.**

Introduction to multimedia, PC architecture and assembly language basics. Color TV and video concepts. PC audio standards, the MIDI music standard, and audio signal processing. Multimedia presentation and authoring techniques. HTML authoring and the fundamentals of the World Wide Web. Prerequisite: Senior Status or approval of Department Chair.

**EECE 439. Protective Relays. 3 Credits.**

This course considers the transient operation of electric power systems: fault analysis; protective relays; dynamic stability analysis; distribution networks and smart grid. The main course goal is to provide students with an overview of advanced power system dynamic operation and protection. At the completion of the course, students should be able to understand faulted power system and protection using relays and circuit breakers, and know how to perform transient stability analysis, rotor-angle circulation, and voltage stability. Students will learn about HVDC transmission systems, distribution, networks, and smart grids. Students should also be able to build a basic power system computer program to perform different studies.

**EECE 441. Robotics. 3 Credits.**

Introduction to the operation of industrial manipulators. Robotic theory including homogeneous coordinate transformations; kinematics and dynamics of articulate manipulator arms, and elements of feedback control theory. The design of hardware and software used for motion control. Introduction to computer vision and artificial intelligence. Three lectures. Prerequisite: Senior Status.

**EECE 442. Computer Vision & Imaging. 3 Credits.**

Detection, image formation, and engineering design of vision and imaging sensors and systems. Unmanned aerial and underwater imaging systems, biomedical image recognition, medical image understanding, inspection, and robotics applications.

**EECE 443. Biomedical Imaging Systems. 3 Credits.**

Engineering and physical principles of biomedical modalities, as applied to clinical diagnostics and pharmaceuticals, gene arrays and Omics imaging technologies central to the detection process, system design, data analysis and classification. Clinical examples.

**EECE 445. Medical Device Miniaturization. 3 Credits.**

Engineering design of miniaturized medical devices, operating on electrical, and quantum principles, with reduced form factor and weight, while reducing power consumption and boosting performance. Integration trends, functionality, scalability, reconfigurability. Case studies and platform-based designs of miniaturized medical devices, such as medical implantable devices, heart monitors, pacemakers, video cameras.

**EECE 447. Image Processing & Pattern Recognition. 3 Credits.**

Digital image processing for manipulation and enhancement of images, development of advanced techniques for object recognition, object classification, image reconstruction, image compression, and feature extraction. Computational analytic and interpretive approaches to optimize extraction and use of imaging data.

**EECE 448. Applied Machine Learning. 3 Credits.**

Design of systems that learn from data and improve with experience. Fundamental concepts and methods of machine learning, including the description and analysis of several modern algorithms, their theoretical basis, and the illustration of their applications. Supervised and unsupervised machine learning.

**EECE 449. Unmanned Autonomous Vehicles. 3 Credits.**

History of the UAV, basics of mechatronic design, common sensor payloads, high-definition cameras, sonars, lidars, vision and imaging design parameters. Major design challenges, laws and regulations, operations and safety.

**EECE 453. Applied Bioinformatics. 3 Credits.**

Bioinformatics principles applied to microscopic and biomedical image acquisition methods and applications, methods and applications of image analysis and related machine learning, pattern recognition and data mining techniques, image oriented multidimensional. Methods and applications for the analysis of post-translational modifications, proteomic, mass spectroscopic, and chemoinformatic data.

**EECE 455. Bionanophotonics. 3 Credits.**

Nanoparticles for optical bioimaging, optical diagnostics and light guided and activated therapy. Use of nanoparticles platforms for intracellular diagnostics and targeted drug delivery, PEBBLE nanosensors.

**EECE 456. Drug Delivery Systems. 3 Credits.**

Instrumentation, devices, and techniques to characterize the physiochemical, optical properties, and in vitro immunological, biological, and stability characteristics of drugs delivery, proteins, and nanomaterials.

**EECE 457. Bioinspired Robotic Vision Systems. 3 Credits.**

Introduction to autonomous computer vision systems. Vision-based bio-inspired systems, guidance, and control, for unmanned aerial vehicles (UAVs), unmanned underwater vehicles (UWVs), medical robotic surgery, and robotic applications.

**EECE 458. Cybersecurity Systems. 3 Credits.**

Cybersecurity as it relates to systems and then on the engineering principles for secure systems. The course focuses on the differences between threats and vulnerabilities, examples of cybersecurity attacks and events, frameworks, requirements and principles for securing systems.

**EECE 459. Quantum Cryptography. 3 Credits.**

Methods that seeks to solve the problem of how to securely send cryptographic keys between two parties by encoding them within light particles, or photons. Quantum cryptography and key distribution technique.

**EECE 460. Big Data, and Deep Learning. 3 Credits.**

Neural-fuzzy networks, big data analysis, classification, clustering, pattern discovery and prediction. Extraction of useful information from spatio-temporal data. Industrial, healthcare, and commercial applications.

**EECE 461. Network Security Systems. 3 Credits.**

Theoretical and practical aspects of network security. Security of TCP/IP applications; firewalls; wireless LAN security; denial-of-service defense.

**EECE 466. Green Energy Sources. 3 Credits.**

This course presents basic information on Energy outlook, interconnection issues of distributed alternate energy resources, efficiency of power production, electric energy conversion and storage (fossil fuel, nuclear, hydro, solar, fuel cells, wind, and batteries). This course also explores the different energy link integration methodologies using Matlab/Simulink Pre-requisite: Senior Status.

**EECE 467. Physical Electronics. 3 Credits.**

Exploring the operation of electrical and electronic devices, focusing on the internal physical laws that determine their utility and limitations. Thermal, optical, electrical, magnetic and quantum properties; energy audit, waves. Transducers, heat sinks, diodes, solar cell, LED, TEDs, FET, memories, nanostructure. Three lectures. Prerequisites: PHYS 101, PHYS 102.

**EECE 469. Introduction to Remote Sensing. 3 Credits.**

This course is intended to provide an introduction to remote sensing of objects with applications in defense and environment. The course covers the basic principles of image sensors and techniques, image interpretation, remote sensing theory, and digital image analysis in relation to optical, thermal and microwave remote sensing systems. Examples of remote sensing applications will be presented along with methods for obtaining quantitative information from remote sensing imagery.

**EECE 470. Introduction to Space Systems. 3 Credits.**

This course is intended to provide the fundamental principles of space systems, in terms of electro-optical sensing, robotic vision, and imaging. Critical space missions such as monitoring of the integrity of spacecraft structures, detection of debris, object recognition and classification will be presented and discussed. Defense and commercial applications will be introduced and discussed.

**EECE 472. Computer Networks. 3 Credits.**

The course describes and investigates Local and Wide Area Networks. Description of topologies and protocols for ETHERNET and TOKEN RING. The OSI model and applicability to LANs. IPX/SPX and TCP/IP protocols. Protocols stacks for PC'S. Server based and peer to peer networks. Network operating systems including NETWARE and NT Server Connectivity devices, hubs, bridges, switches, and routers. The Internet and Internet access. WANs including ATM, SONET, ISDN, and other high speed networks. Prerequisite: Senior Status.

**EECE 473. Operating Systems for Computer Engineering. 3 Credits.**

A study of the modular design of operating systems and device drivers. Demand paging and virtual memory; scheduling algorithms, race conditions between processes; file systems, real time operating systems analytic tools for the evaluation of operating systems. Computer engineering applications. Prerequisite: EECE-232 or equivalent. Lecture with embedded lab.



**EECE 474. Modern Communication Systems. 3 Credits.**

Digital and analog wireless and wired communications systems, including satellite communications and personal mobile communication systems. Techniques used in modern communication systems such as source coding, channel coding, multiplexing, multiple access, spread spectrum, cellular concepts. Passband digital transmission, and basics of cognitive and software radio. Lecture +Labs. Prerequisite: EECE 303.

**EECE 475. Computer Network Architecture. 3 Credits.**

This course focuses on providing the skills and knowledge necessary to install, operate, and troubleshoot a small branch office Enterprise network, including configuring a switch, a router, and connecting to a WAN and implementing network security. A Student should be able to complete configuration and implementation of a small branch office network. Finally, this course will link the contents to the modern networking elements such as Network Function Virtualization and the Software Defined Networks.

**EECE 476. Object-Oriented Programming and Data Structures for Computer Engineering. 3 Credits.**

Objected-oriented programming, classes, objects, abstraction, inheritance, polymorphism. Data structures, list, trees, stacks, queues, search trees, hash tables, sorting algorithms. Applications to computer engineering problems. Labs. Prerequisites: CMPT 201.

**EECE 477. Power and Energy Systems. 3 Credits.**

Modern power system/energy conversion operation. Models for interconnected power grids, transmission lines, transformers, and power flow analysis. Development of basic power flow digital simulation programs and run power labs.

**EECE 478. Applied Data Mining for Engineers. 3 Credits.**

This course will provide students with an understanding of fundamental data mining methodologies and with the ability to formulate and solve problems with them. Special emphasis attention will be paid to practical, efficient and statistically sound techniques. Hands-on experience with data mining software, primarily R, to allow development of basic execution skills.

**EECE 491. Special Topics in Electrical and/or Computer Engineering. 3 Credits.**

Topics of current interest to senior electrical engineering students. Subject matter will be announced in advance of semester offering. Written permission of the chair is required. Prerequisite: Senior Status.

**EECE 520. Computer Architecture. 3 Credits.**

Evolution of computer architecture spanning from the CISC machines to the RISC machines, from the pipelined to superscalar architectures; from multithreaded to parallel processors. Hardware and software processor design trade-off and performance evaluation; Data representation and instruction sets. Control design: Hardware and microprogrammed. Memory organization: Virtual segmentation and cache; system organization: Bus control and I/O. Pre-requisite: Senior Status.



**EECE 530. Modern Portable Wireless Devices. 3 Credits.**

Wireless communication systems for mobile and autonomous devices, healthcare monitoring devices, with emphasis on: cellular concept & trunking, spread spectrum systems security and multiple access techniques, speech coding, power control. Antennas and channel propagation characteristics and techniques for mitigation of propagation-related degradation factors. Analysis & design of systems following standards & protocols for the latest generation of wireless networks. Key examples of mobile portable devices, medical devices, system characteristics, and architecture design. Pre-requisites: EECE 303, EECE 315. Co-requisite: EECE 304.

**EECE 531. Body Networks and Wearable Computing. 3 Credits.**

Investigation of wireless data communication at the scale of a human body. Wearable computing and ambient intelligence. Radio telemetry of biomedical data. Cybersecurity, antenna design, field strength considerations, and energy sources in the special environment in and around the human body. 3 credits. Prerequisite: EECE-311.

**EECE 536. Power Systems I. 3 Credits.**

Overview of modern interconnected power system and smart grid operation. Develop appropriate models for an interconnected power system and perform power flow and short circuit analysis. Students will write a basic power flow computer program.

**EECE 548. Fiber Optics Communication. 3 Credits.**

Optical fiber structures and physical characteristics; electromagnetic waveguiding properties and modes, fiber materials, loss mechanisms, and dispersion. Semiconductor laser and led sources and photodetectors. Connectors. Fiber measurements. Communication aspects of fiber transmission. Fiber system examples and design procedures. Three Lectures.

**EECE 566. Mobile Communication Networks. 3 Credits.**

This course provides an overview of the latest developments and trends in wireless mobile communications, and addresses the impact of wireless transmission and user mobility on the design and management of wireless mobile systems. In addition to study the technical issues and state-of-the-art techniques in the operation and management of mobile communications networks; To learn the engineering principles and system evaluation methods used in the design of mobile communications networks. This course will cover selected Mobile Communications Networks topics in each of the following areas: Overview of wireless communications, Cellular wireless networks, 2G, 2.5G and 3G cellular networks, Long Term Evolution (LTE) - 3.5G, Future of 5G cellular networks, Wireless local area networks (Wi-Fi), Wireless personal area networks (Bluetooth, UWB, ZigBee), and Mobility management and radio resource management.

**EECE 591. Advanced Special Topics. 3 Credits.**

Advanced topics in either Electrical or Computer Engineering open to those students who are enrolled or are considering participation in a Seamless Masters program; subject matter will be announced in advance of course offering. Prerequisites: Senior Status. A prerequisite of 'Senior Status' means that all junior electrical engineering courses must have been passed. Exceptions require the approval of the department chair and the Dean of Engineering.

**EECE 592. Power Electronics. 3 Credits.**

The course provided a knowledge of circuitry for the control and conversion of electrical power with high efficiency. Applications include electronic power supplies, aerospace and vehicular power systems, and renewable energy systems.

**EECE 734. Bulk Power System Operation. 3 Credits.**

Operation of the bulk electric power system in North America. Basic types of high voltage equipment and station configurations. Methods and equipment to control power flow and voltage levels on the power systems.

**EECE 757. Translational Bioinformatics. 3 Credits.**

The course is aimed at presenting computational and statistical analysis techniques aimed to bridge the gap between biomedical research and clinical practice; applications of bioinformatics and computational methods to clinical data.

# Mechanical Engineering

Dr. John C. Leylegian

Chair, Department of Mechanical Engineering

## Vision Statement

The Mechanical Engineering program at Manhattan College will be distinguished by its education of engineers who are recognized locally and globally for their contributions and leadership in mechanical engineering and related professions.

## Mission Statement

The mission of the Mechanical Engineering program is to provide students with an education that will prepare them for future challenges in mechanical engineering, whether they plan to practice engineering or pursue advanced/graduate studies.

## Program Educational Objectives

Mechanical engineering graduates will be:

1. Technically competent in their mechanical engineering knowledge and skills in professional or advanced academic settings.
2. Committed to the engineering profession and to expanding their knowledge and skill set with increasing independence and responsibility.
3. Committed to professional conduct, ethical practices, and communicate effectively within a diverse multi-cultural environment.
4. Aware that their engineering expertise can be utilized to impact the local and global community.

## Student Outcomes

The Mechanical Engineering program uses the standard set of ABET, Inc. outcomes (1) through (7) as described above under Engineering.

## Mechanical Engineering

The mechanical engineer is considered the general practitioner in the engineering profession. Career opportunities exist in such fields as aerospace, automotive, computer, energy, machinery, manufacturing, and consulting firms. The curriculum is designed to provide the kind of broad education needed by "general practitioners." Juniors and seniors take course sequences in two areas: thermal/fluids/energy, and solid mechanics/machine design/manufacturing. Both areas rely extensively on computer applications. Seniors may specialize by choosing electives in: computer-aided design, computer-aided manufacturing, thermal/energy systems, or heating, ventilation and air conditioning.

Course work is complemented by comprehensive laboratories containing a wind tunnel, steam turbine, automotive engines, refrigeration systems, computer-controlled machine tools, stress and vibration analyzers, and computer-based data acquisition systems. Students also have access to PC laboratories and advanced workstations. In the senior

year, qualified students are encouraged to use this equipment in elective project courses. The curriculum prepares the student for professional employment and graduate study.

## Four-Year Program in Mechanical Engineering

The curriculum for the first year is common to all branches of engineering. In order to enable a student to test his or her interest in mechanical engineering, he or she takes designated courses from the mechanical engineering course offerings in their sophomore year. The junior and senior years allow for concentrated studies in two areas: thermal/fluids/energy, and solid mechanics/machine design/manufacturing. Both areas rely extensively on computer applications. Seniors may specialize by choosing electives in: design, manufacturing, thermal/energy systems, or heating, ventilation and air conditioning. The department offers an option in biomechanics for students interested in biomedical engineering. Please consult the option coordinator for details. A representative four-year program is shown below.

## Mechanical Engineering

### First Year

Fall	Credits	Spring	Credits
ENGS 115		3 ENGS 116	3
MATH 185 <sup>1</sup>		3 MATH 186 <sup>1</sup>	3
CHEM 101/CHEM 103 <sup>1</sup>		CHEM 101/CHEM 103 <sup>1</sup>	
or PHYS 101/PHYS 191 <sup>1</sup>		4 or PHYS 101/PHYS 191 <sup>1</sup>	4
ENGL 110 or RELS 110		3 ENGL 110 or RELS 110	3
General Education Elective		3 General Education Elective	3
	16		16

### Second Year

Fall	Credits	Spring	Credits
CHEM 102/CHEM 104 <sup>1</sup>		ENGS 201	3
or PHYS 102/PHYS 192 <sup>1</sup>		4 ENGS 202	0
ENGS 205 <sup>1</sup>		3 ENGS 220	3
ENGS 206 <sup>1</sup>		3 MECH 230	3
MATH 285 <sup>1</sup>		3 MECH 231	1
MECH 211		3 MATH 286 <sup>1</sup>	3
		ENGL Elective	3
	16		16

### Third Year

Fall	Credits	Spring	Credits
MECH 302		2 MECH 312	3
MECH 318		3 MECH 319	2
MECH 323		4 MECH 325	4
MECH 314		3 MECH 332	3
RELS Catholic Studies or RELS Contemporary/Global Studies		3 MECH 336	3

Math/Science Elective <sup>2</sup>	3-4 MECH 337	0	
	General Education Elective	3	
18-19		18	
<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
MECH 401		2 MECH 402	2
MECH 405		2 MECH 422	3
MECH 411		3 Mechanical Engineering Elective <sup>2</sup>	3
MECH 414		3 Mechanical Engineering Elective <sup>2</sup>	3
Mechanical Engineering Elective <sup>2</sup>		3 RELS-Ethics Elective	3
Math/Science Elective		3-4 General Education Elective	3
16-17		17	

Total Credits: 133-135

- <sup>1</sup>    *Students must earn a grade of C (2.0) or better in calculus I, II, III, differential equations, chemistry and physics. Students must earn a grade of C (2.0) or higher in ENGS 205 Introductory Thermodynamics and ENGS 206, as required for their program of study, before enrolling in any 300-level mechanical engineering courses.*
- <sup>2</sup>    *MATH/SCI and MECH electives must be approved by the department chair.*
- <sup>3</sup>    *A student may take an approved business course for one general education elective.*

## Biomechanics Concentration

The Biomechanics concentration is designed to give students a competitive advantage in the biomedical industry. Biomechanical engineers combine medical and biological sciences with engineering principles to design and develop healthcare equipment, devices, computer systems, and software. The employment prospects in biomechanics is expected to be strong for the foreseeable future.

This five-course concentration covers topics in tissue engineering, the strength and structural behavior of biocompatible materials, and the application of solid and fluid mechanics to biological systems. To participate in the biomechanical concentration, students must earn an overall average GPA of 3.0 with no more than two grades lower than a B in any of the concentration courses. Incoming freshmen, transfers and current students may enroll at any time. Any Pre-Concentration student who, at any time, fails to meet all requirements concurrently will be no longer be permitted to participate in the concentration.

## Concentration Requirements

Students accepted into the concentration should choose five courses. Two of the courses are selected from the following courses offered by the Biology Department:

BIOL 207	Anatomy and Physiology I <sup>1,2</sup>	4
BIOL 208	Anatomy and Physiology II <sup>2</sup>	4
BIOL 222	Biology for Engineers <sup>2</sup>	3
BIOL 441	Cardiovascular Biology <sup>1</sup>	3

The other three courses are selected from the following Mechanical Engineering courses:

MECH 408	Mechanical Engineering Projects I <sup>3</sup>	3
MECH 410	Mechanical Engineering Projects II <sup>3</sup>	3
MECH 427	Special Topics in Mechanical Engineering <sup>4</sup>	3
MECH 431	Structural Biomechanics	3
MECH 437	Biomechanical Instrumentation	3
MECH 450	Intro to Tissue Engineering	3
MECH 451	An Intro to Biofluid Mechanics	3
MECG 531	Introduction to Biomechanics	3
MECG 536	Applied Biofluid Mechanics	3
MECG 541	Special Topics <sup>4</sup>	3
MECG 631	Biomechanics Modeling and Applications	3
MECG 741	Special Topics: in Mechanical Engineering <sup>4</sup>	3

<sup>1</sup> Preferred courses for the concentration.

<sup>2</sup> This course has a required zero-credit laboratory course. This laboratory must also be taken in order to fulfill the concentration requirements. See the Biology Department catalog page for more information.

<sup>3</sup> Research projects given credit as MECH 408 and/or MECH 410 may be applied to the concentration with the approval of the department chair and/or the concentration coordinator.

<sup>4</sup> New courses applicable to the Biomechanics concentration are being created and offered as Special Topics courses. Please consult the department chair and/or the concentration coordinator to determine if a particular Special Topics course may be applied to the concentration.

## Courses

### **MECH 211. Technical and Graphical Communication. 3 Credits.**

This is an introductory course in the “languages” of mechanical engineering. Topics include: discussion of mechanical engineering principles and concepts; use of Word for report generation (including equations and graphics); use of Mathcad for engineering computation; introduction to orthogonal and isometric views. A main focus of the course is introducing the student to state of the art computer based drafting and solid modeling applications. Two lectures, two-hour laboratory. Fall. Prerequisite: ENGS 116. (Cr. 3).

### **MECH 230. Introductory Solid Mechanics. 3 Credits.**

Analysis of stress and strain due to axial, torsional and flexural loads; beams, shafts, columns. Elastic deformation under axial, flexural and torsional loads. Statically determinate and indeterminate problems, principles of superposition and compatibility. Elastic column buckling. Three lectures. Spring. Prerequisite: ENGS 206. (Cr. 3).

### **MECH 231. Solid Mechanics Laboratory. 1 Credit.**

Application and verification of principles of mechanics of solids. Preparation of technical reports and presentations. Three hours. Spring. Corequisite: MECH 230. (Cr. 1).

**MECH 302. Applied Thermodynamics. 2 Credits.**

Power cycles and efficiencies; air conditioning, refrigeration and heat pump cycles; analysis of moist air systems; design of simple thermal systems. Two lectures. Fall. Prerequisite: ENGS 205. (Cr. 2).

**MECH 303. Special Topics: in Applied Thermodynamics. 3 Credits.****MECH 312. Introduction to Mechatronics. 3 Credits.**

A study of the interface between mechanical and electrical systems. Topics include: actuators; sensors; and interfacing elements. The actuators covered include pneumatic, hydraulic and electrical devices, with emphasis on the analysis associated with each system. The sensors portion covers the devices used to obtain information needed for system control, as well as a study of the necessary interfacing components. Other issues addressed will include power sources and operating practices. Pre-requisite: MATH 286.

**MECH 314. Engineering Analysis and Numerical Methods. 3 Credits.**

A unified treatment of engineering analysis and numerical methods. Solutions of linear algebraic systems using both classical and numerical methods. Analytic and numerical solution of ordinary and partial differential equations. Fourier Series. Laplace transforms. Analytic and numerical solution of linear algebraic systems. Pre-requisites: MATH 286 and ENGS 116.

**MECH 318. Fluid Mechanics I. 3 Credits.**

Fluids properties; fluid statics; integral form of governing equations of fluid motion; dimensional analysis; internal flow (pipe flow); differential form of governing equations of fluid motion. Three lectures. Fall. Prerequisite: ENGS 206. (Cr. 3).

**MECH 319. Fluid Mechanics II. 2 Credits.**

Flow around immersed bodies; drag and lift. Introduction to boundary layer theory. Compressible flow: one-dimensional isentropic flow; normal and oblique shocks; Prandtl-Meyer flow; Rayleigh and Fanno flow. Two lectures. Spring. Prerequisite: MECH 318.

**MECH 320. Special Topics: in Fluids. 4 Credits.****MECH 323. Machine Design. 4 Credits.**

Static failure theories and design for steady loading. Design for fatigue strength and reliability. Design of mechanical elements such as fasteners, gears, shafts, and springs. Individual design projects. Four lectures. Fall. Prerequisites: MECH 230. (Cr. 4).

**MECH 325. Heat Transfer. 4 Credits.**

Conduction, convection and radiation as different modes of heat transfer. Steady and unsteady states. Combined effects. Applications. Four lectures. Spring. Prerequisites: ENGS 205, MECH 318.

**MECH 332. Finite Element Analysis and Computer Aided Engineering. 3 Credits.**

Introduction to the theory of finite element methods; introduction to the variational calculus, one-dimensional linear element, element matrices, direct stiffness method, coordinate systems, introduction to two-dimensional elements. Design process using CAE software. Solid modeling, finite element modeling and simulation. Selected problems in mechanical engineering will be modeled, designed and analyzed and solutions will be compared to those obtained from alternate methods. Two-hour lecture, two-hour laboratory. Spring. Prerequisite: MECH 323. (Cr. 3).

**MECH 336. Manufacturing Processes. 3 Credits.**

Introduction to metal cutting, and manufacturing processes such as turning, milling, and drilling. Other topics covered include metal shearing and forming, the economics of metal cutting and process planning, inspection and statistical quality control, automation in manufacturing and computer numerical control. Three lectures. Spring. Prerequisites: ENGS 201, MECH 230 (Cr. 3).

**MECH 337. Manufacturing Systems Laboratory. 0 Credits.**

This lab gives hands-on practice in various computer aided manufacturing processes including CNC machinery, controls, and robotics. Three-hour laboratory every second week. Spring. Prerequisite MECH 314. Corequisite: MECH 336. (Cr. 0).

**MECH 338. Special Topic: in Manufacturing System Laboratory. 1 Credit.****MECH 401. Mechanical Engineering Design I. 2 Credits.**

Engineering design process, problem definitions, information sources, alternative solutions, technical and societal constraints. Group design project and report. One lecture hour, three design hours. Fall. Prerequisites: MECH 314, MECH 318, MECH 323, MECH 325, and MECH 332.

**MECH 402. Mechanical Engineering Design II. 2 Credits.**

A continuation of MECH 401. The design project in MECH 401 will be expanded or a model will be built and tested. Students may also start a new project in consultation with faculty. Group or individual design project and report. One lecture, three design hours. Prerequisites: MECH 401 and permission of the Department Chair. Spring. Co-requisite: MECH 401.

**MECH 405. Thermal/Fluids Laboratory. 2 Credits.**

This laboratory course allows students to perform thermo/fluid experiments to underscore the material that they learn in the thermodynamics, heat transfer, and fluid mechanics classes. This laboratory course also has a component that teaches the students how to construct and perform their own experiments. The material covered in this section includes the mathematical design of an experiment, instrumentation, signal processing, statistical analysis, and data presentation. The students are also required to investigate a physical phenomenon experimentally. Two hour laboratory. Two hour lecture. Fall. Prerequisites: MECH 302, 318, 319, 325. (Cr. 2).

**MECH 407. Solid Mechanics. 3 Credits.**

Review of principles of solid mechanics and vector methods. Stress-strain-temperature relations, residual stresses and stress concentrations. Beam and column behavior, shear center, torsion of non-circular members, buckling and energy methods. Three lectures. Prerequisites: MECH 230, MECH 314, MECH 323.

**MECH 408. Mechanical Engineering Projects I. 3 Credits.**

Individual student research or design projects. Where applicable, computer methods, experimental work, and literature study will be used. Proposal and report required. Six to nine hours of project. (Taken only with approval of advisor and chair of department.) Prerequisites: MECH 314, MECH 318, MECH 323, MECH 325.



**MECH 410. Mechanical Engineering Projects II. 3 Credits.**

Individual student research or design projects. A continuation of MECH 408 for students who have successfully pursued a research or design project and wish to continue it for a full year. Proposal and report required. Six to nine hours of project, (Taken only with the approval of advisor and chair of department.) Prerequisite: MECH 401 or MECH 408.

**MECH 411. Mechanical Vibrations. 3 Credits.**

This course covers the modeling, analysis, and optimization of mechanical vibrating systems. The course starts with elements of a single degree-of-freedom (DOF) vibrating system, and continues with time and frequency response, and application of different single DOF vibrating systems. Multiple DOF system will be introduced and methods of determining their natural frequencies, mode shapes, time response, and frequency response will be covered. Vibration control techniques such as use of a vibration isolator, a vibration absorber, and suspension optimization. Newton and Lagrange methods are used throughout the course. Pre-requisites: MATH 286 and ENGS 220.

**MECH 412. Special Topics - Fluid Mechanics. 3 Credits.****MECH 413. Independent Studies in Mechanical Engineering. 1-3 Credit.**

Individual student independent study in a Mechanical Engineering topics. Students upon approval of a faculty adviser. Proposal and report required. (Taken only with approval of advisor and chair of department.) One to three credits. Prerequisites: MECH 314, MECH 318, MECH 323, MECH 325.

**MECH 414. Engineering Economy & Project Management. 3 Credits.**

This course provides a background in company operation and management tools. These include: economics; project planning; forecasting; decision analysis; inventory control; and network analysis. Emphasis will be placed on solving practical problems by using software tools such as Excel and other appropriate analysis tools. Three lectures. Fall. Prerequisite: Senior Status. (Cr.3).

**MECH 417. Special Topics in Mechanical Engineering. 3 Credits.**

Special topics in mechanical engineering of current interest to undergraduate students; subject matter and prerequisite will be announced in advance of particular semester offering.

**MECH 421. Solar Energy Systems. 3 Credits.**

Study of solar energy systems with emphasis in solar heating and cooling; design of various types of solar collectors using different materials, working fluids, and geometries; energy storage systems for solar assisted heat pumps; use of solar energy in power generation. Pre-Req: MECH325, MECH319.

**MECH 422. Thermal/Fluids System Design. 3 Credits.**

Design and selection of basic components of typical thermal/fluids systems such as heat exchanger, pumps, compressors, and turbines. System synthesis and optimization. Individual or group design projects. Three lectures. Spring. Prerequisites: MECH 302, MECH 318, MECH 325.

**MECH 425. Analysis of Hvac Systems. 3 Credits.**

Air conditioning systems; moist air properties and conditioning processes indoor air quality, comfort and health; heat transmission in building structures; space heat load; cooling load; energy calculations. Three lectures. Fall. Prerequisite: MECH 302, MECH 325.

**MECH 427. Special Topics in Mechanical Engineering. 3 Credits.**

Special topics in mechanical engineering of current interest to undergraduate students; subject matter and prerequisite will be announced in advance of particular semester offering. Three lectures. Prerequisite: Senior Status. (Cr.3).

**MECH 429. HVAC Systems. 3 Credits.**

Design of piping in HVAC systems; pumps and compressors, and their selection; fans, air distribution in buildings and duct design; heat exchangers; refrigeration systems. Three lectures. Prerequisite: MECH 425. (Cr.3).

**MECH 431. Structural Biomechanics. 3 Credits.**

An introduction to the application of solid mechanic principles including non-linear behavior, to the human anatomy such as bone, muscle, ligaments, and tendons. The course includes discussions of material properties and behavior; the response of the body to adverse loading; failure and repair mechanism; prosthetic/body interfacing; and prosthetic system design. Issues associated with tissue engineering will also be introduced. Prerequisites: ENGS 230 and Senior status.

**MECH 435. Legal Aspects of Engineering. 3 Credits.**

An interdepartmental course covering basic legal doctrines, professional-client relationship, design and practice problems. Topics include American judicial system, contracts, quasi-contracts, agency, licensing, client obligations, construction process, copyrights, patents and trade secrets. Three lectures. Prerequisite: Senior Status.

**MECH 436. Fundamentals of Engineering. 3 Credits.**

Review of the fundamental principles of engineering. Preparation to qualify as a licensed professional engineer. Specific attention is placed on review of the principles that are the basis for questions on the Fundamentals of Engineering examination. Prerequisite: Senior Status.

**MECH 437. Biomechanical Instrumentation. 3 Credits.**

In biomechanics it is important to be able to measure mechanic variables with accuracy and in an appropriate manner. This course will cover the methods and issues associated with measuring mechanical and chemical properties in a biomechanical environment. This will include identifying the mechano-chemical source of biological signals, measuring basic mechanical properties such as position, pressure, flow-rate and temperature with particular attention being paid to biological applications. In addition, the methods needed to measure different types of radiation will be studied to allow students to understand how radiological equipment is used and controlled. Pre-requisite: MECH 312.

**MECH 446. Manufacturing Systems. 3 Credits.**

Group projects emphasizing design for manufacturing, manufacturing system simulation, and prototype fabrication. Concurrent with projects are lectures on modern manufacturing technologies. Two lectures and two-hour laboratory. Prerequisite: MECH 336.

**MECH 450. Intro to Tissue Engineering. 3 Credits.**

This course is designed to provide students with the knowledge and experience to tissue engineering and regenerative medicine. An introduction to extracellular matrix (ECM), cell mechanobiology, cell dynamics and tissue organization will be covered. The application of collagen scaffolds, cell adhesion, cell trafficking, and molecule delivery in tissue engineering will be discussed. In addition, students are introduced to the concept of scaffolds tissue engineering and translating engineered tissues to the patients. Prerequisites: MECH 318 and ENGS 205.

**MECH 451. An Intro to Biofluid Mechanics. 3 Credits.**

An introduction to the application of fluid dynamics principles, including non-Newtonian flow, the human circulatory and respiratory systems in health and disease. The course includes discussions of blood flow in the heart, arteries, veins, and microvascular beds; gas transport between capillaries and the surrounding tissue; flow and particle transport in the lungs; gas exchange across the lung's blood-air interface; and the role of hemoglobin in the transport of oxygen and carbon dioxide throughout the circulatory system. Senior Status.

**MECH 512. Energy Conversion. 3 Credits.**

Overview of thermodynamic concepts, application of the concept of availability to improve efficiency of gas and vapor power generation systems. Thermodynamics of reacting systems as related to combustion of hydrogen and hydrocarbon fuels. Overview of nuclear reactions and solar energy as energy sources. Environmental impact of power plant operation. Introduction to innovative energy sources such as thermoelectric, photoelectric, electrochemical, wind, tidal and geothermal energy. Prerequisite: Senior Status.

**MECH 516. Turbomachinery. 3 Credits.**

Review of fundamentals of fluid mechanics, dimensional analysis, classification and characteristics of turbomachines, component efficiencies, incompressible and compressible turbomachines; hydraulic and wind turbines. Prerequisite: Senior Status.

**MECH 521. Advanced Mechatronics. 3 Credits.**

This course is designed to provide students with the knowledge and experience to design and build mechatronic systems. The course covers basic transducer operation, controller design and programming, a-to-d and d-to-a issues, and motor selection and use. The course also introduces the students to basic programmable logic controller (PLC) systems and ladder logic. Pre-Reg: MECH312.

**MECH 525. Hvac Systems Analysis. 3 Credits.**

Indoor air quality and human comfort, economy and environmental protection requirements. Heating and cooling loads. Introduction to equipment selection and system analysis.

**MECH 528. Combustion Systems. 3 Credits.**

Fundamentals of combustion processes, thermochemistry, equilibrium, adiabatic flame temperature calculations, thermodynamic cycle analyses and performance estimations of turbojets, turbofans, turboshaft, and ramjet engines, preliminary design of liquid and solid propellant rockets.

# Engineering Science

Dr. Tim J. Ward, P.E.  
Dean of Engineering

Engineering sciences are the bridge between the basic sciences and mathematics and applied engineering design. Courses include those fundamental to all engineering, such as statics, dynamics, mechanics, thermodynamics, materials, and electrical systems.

## Courses

### **ENGS 115. Introduction to Engineering. 3 Credits.**

This course is designed around a variety of engineering themes. Each theme is related to one (or more) of the engineering disciplines offered through the School of Engineering. Every theme involves project work emphasizing design, problem solving methodologies, critical thinking, and team participation. All students participate in all projects. A course objective is to acquaint all students with the areas of engineering available through the School in order to assist them in their choice of major. Ethics, professional responsibilities, and economic concerns are emphasized as part of the projects. Fall.

### **ENGS 116. Introduction to Engineering Computation. 3 Credits.**

An introductory course in computation for the practice of engineering. Focuses on Excel applications and structured programming techniques using the Visual Basic and MATLAB programming languages for the solution of engineering problems. Students are introduced to: use of the Internet as an information resource; software packages for engineering analysis and modeling; and computer applications for the preparation of documentation and graphics. Lecture/Lab. Spring.

### **ENGS 201. Materials Science. 3 Credits.**

Atomic structure; crystallographic concepts; relationship of structure to properties of metals, ceramics and organic materials. Equilibrium and non-equilibrium relationships of multiphase materials. Methods for changing properties of materials. Three lectures, three-hour laboratory every second week. Fall and Spring. Prerequisite; CHEM 101.

### **ENGS 202. Materials Science Laboratory. 0 Credits.**

This is the laboratory portion of ENGS 201. Performance in the laboratory will be incorporated in the grade received in ENGS 201. Three hour laboratory every second week. Fall and Spring.

### **ENGS 203. Electrical Systems. 3 Credits.**

Elementary electrical concepts. Resistive networks. Nodal and mesh analysis. Dependent sources. Network theorems. Energy storing elements. Transient response of first and second order circuits. Sinusoidal excitation. Phasors. Alternating current steady state analysis. Computer-aided solutions. The curriculum is consistent with the needs of the PE examination. Four hours a week includes problem and laboratory sessions. Fall and Spring. Prerequisite: MATH 186 (or MATH 104).

**ENGS 204. Environmental Engineering Principles I. 3 Credits.**

Introductory course in environmental engineering designed to provide the foundation for understanding local and regional environmental problems. Topics include mass balance concepts, chemical stoichiometry, reaction kinetics, water quality evaluations for surface and ground water systems, acid rain, risk assessment, water supply, water and wastewater treatment processes, and treatment of hazardous waste. Three lectures. Fall. Must receive a minimum grade of C. Prerequisites: MATH 185, CHEM 101.

**ENGS 205. Introductory Thermodynamics. 3 Credits.**

Definitions of energy systems, properties, and unit systems. work, heat, and the first law of thermodynamics in open and closed systems. Applications to compressors, pumps, turbines, heat exchanger, and nozzles. The second law of thermodynamics and its effect on energy systems. Must receive a minimum grade of C. Students may only repeat the course two times, after which they are subject to dismissal from the engineering program. Four lectures. Fall. Prerequisites: MATH 186 (or MATH 104), CHEM 101, PHYS 101. (Cr. 3).

**ENGS 206. Statics. 3 Credits.**

Vector quantities, forces, and moments; resultants of force systems; free body diagrams and static equilibrium; analysis of truss, frame, and machines in static equilibrium; dry friction; belt friction; first and second moments. Three lectures. Fall and Spring. Must receive a minimum grade of C. Students may only repeat the course two times, after which they are subject to dismissal from the engineering program. Prerequisites: MATH 186 (or MATH 104), PHYS 101.

**ENGS 220. Dynamics. 3 Credits.**

Kinematics of particles and rigid bodies in planar motion, work and energy, impulse and momentum; introduction to mechanical vibration. Three lectures. Spring. Prerequisite. ENGS 206.

**ENGS 230. Introduction Solid Mechanics. 3 Credits.**

Analysis of stress and strain due to axial, torsional, and flexural loads; beams, shafts, columns. Elastic deformation under axial, flexural, and torsional loads. Statically determinate and indeterminate problems; principles of superposition and compatibility. Elastic column buckling. Three lectures. Fall and Spring. Must receive a minimum grade of C. Students may only repeat the course two times, after which they are subject to dismissal from the engineering program. Prerequisite: ENGS 206.

**ENGS 301. Engineering Professional Development I. 0 Credits.**

This zero credit course is offered in order to enable an undergraduate engineering student to receive recognition for participating in professional development activities, including seminars, workshops, meetings, field trips, mentoring, etc. This course meets three hours a week and is graded P/F. May be repeated. Only offered in the Fall semester. Prerequisite: Approval of Instructor.

**ENGS 302. Engineering Professional Development II. 0 Credits.**

This zero credit course is offered in order to enable an undergraduate engineering student to receive recognition for participating in professional development activities, including seminars, workshops, meetings, field trips, mentoring, etc. This course meets three hours a week and is graded P/F. May be repeated. Only offered in the Spring semester. Prerequisite: Approval of instructor or chair.

**ENGS 401. Internship for Engineering. 0 Credits.**

This zero credit course is offered so that an engineering student may receive recognition on the academic transcript indicating participation in this type of experiential learning. May be repeated.

**ENGS 402. Service for Engineering Students. 0 Credits.**

This zero credit course is offered so that an engineering student may receive recognition on the academic transcript indicating participation in organized service activity. This course is graded P/F. May be repeated. Fall, Spring and Summer. Prerequisite: Approval of Instructor.

**ENGS 410. Student Experiential Research. 3 Credits.**

This course is for those students who wish to participate in summer research with a faculty member and receive college credit. This course may be used as a technical elective in some engineering programs.

# Science - General Information

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## Historical Note

Since its establishment as a separate school of Manhattan College in 1993, the School of Science has maintained its traditional ties with the School of Liberal Arts while striving to assure the continuation of Manhattan's tradition of excellence in Science education. This tradition is reflected in the success of Manhattan's Science graduates and the position of Manhattan among a select number of colleges which are recognized as important sources of the nation's professional scientists.

## Mission Statement

The mission of the School of Science is to help our students to see, to know and so, to act.

To see the invisible world through the lens of a microscope or telescope; to see in the extended laboratory of New York City and the problems, opportunities and rich culture of urban life; to see — with a global perspective — the world grown both smaller through communications and more complex through cultural differences; and to see their place and responsibilities in a world of conflicting moral and ethical claims: this is our mission.

To know by developing the faculty of critical thinking and clear writing and speaking; to know by acquiring the research techniques to find information rapidly and efficiently; to know in cooperation with teachers who pay individual attention to students; to know not only the network of the core curriculum with courses in humanities, natural science, behavioral and social science; and to know not only the how, but also the why: this is our mission.

And finally, to act, to do, to follow in a long line of Manhattan graduates who have made a difference in a wide variety of careers in the public as well as the private sector, and to bring into the world of the future a sense of integrity, honesty and values supported and strengthened at Manhattan College: this is our mission.

## Curriculum and Programs

Undergraduate studies in the Sciences are most challenging but provide an almost unique opportunity to learn and develop problem-solving and analytical skills while gaining a deeper understanding and appreciation of physical laws and their applications. The choice of a Science major is based upon the individual's interests, educational and career goals, and abilities. Majors may be chosen from several areas: biology, biochemistry, chemistry, computer science, environmental science, mathematics, and physics. Elective components of the major curricula provide the opportunity to explore other areas of interest, enhance knowledge in a specialized area of the major, or construct minor sequences in other disciplines. Minors may be earned in all of the departments of the School of Science. At Manhattan, our Science curricula contain a strong core component in the Liberal Arts to provide a foundation for our graduates to contend with the humanistic and ethical issues they will face after graduation. Once a student is admitted to Manhattan College, all major, minor, and core courses must be taken at Manhattan College. Certain non-resident courses, with the approval of the Dean and major department Chair, may be

exceptions to this requirement. Under unusual circumstances, and with the approval of the Dean after consultation with the Chair of the student's major department, courses may be taken at another College

## Majors

The science curriculum provides seven major fields of study from which the student can select one or more for in-depth study. A student who opts to major in two areas must complete the requirements for both majors. Students may use science/mathematics and free electives towards the second major.

- Biochemistry
- Biology
- Chemistry
- Computer Science
- Environmental Science
- Mathematics
- Physics

## Program Concentrations

In addition to the regular course of study, the seven programs of study in the School of Science, deliver focused instruction in subjects of contemporary interest like:

- Applied Mathematics
- Biomedical Sciences
- Environmental Biology & Environmental Science
- Machine Learning & Intelligence
- Nanoscience
- Theoretical Physics
- Pre-Health Concentration

## Minor Fields of Study

In order to provide an opportunity for students to broaden their educational experiences, students in Science are able to minor in any other science. This program consists of a minimum of fifteen credits in the discipline. Details of these programs may be found under the separate headings for each department in the School of Science.

Science students who are interested in pursuing a minor outside the School of Science must contact the chair of the department for further information.

All major and minor credits must be taken at Manhattan College. A minimum grade of C is necessary to receive major or minor credit.



## Minors for Non-Science Majors

Students who are in schools other than Science may pursue a minor in Science. Students must obtain the permission of the chair of the department. The minor in Science for non-science majors requires the completion of at least 15 credits.

## Academic Advising

Academic advisement for students in Science is conducted by the Assistant Dean in conjunction with the Department Chairs and faculty. The Assistant Dean counsels all students throughout their academic career on not only policy and procedures, but any challenges — personal and academic — that may arise in a student's time at the College. All students should select their major by the end of their freshman year. Programs of study for all students, as well as co-approval of athletes, are approved by the Assistant Dean. Department Chairs and faculty are responsible for advising all students in their major. The faculty are closely associated with professional organizations and industrial groups carrying out related activities, thus assuring maximum service to the student in preparing to meet the requirements for the degree, for advanced professional study, and for placement.

Science students who plan to enter graduate health professions programs should consult with the Pre-Health Advisor. The Advisor will guide the students through the preparation and application process required for medical school admissions.

## Study Abroad

Students interested in studying abroad should discuss their interest with the Assistant Dean by the beginning of sophomore year. It is best to plan the semester of study abroad for the junior year. Further information about study abroad opportunities is available through the Study Abroad Office.

## School of Science Curriculum

### Arts Core

LLRN 102	Classical Origins: West Culture	3
or PHIL 213	Introduction to Logic	
HIST 150	Roots: History	3
ENGL 150	Roots: Literature	3
PHIL 150	Roots: Philosophy	3
MUSC 150	Roots: Music	3
or ART 150	Roots: Art	
Two of the following social sciences:		6
ECON 150	Roots: Economics	3
POSC 150	Roots: Government	3
SOC 150	Roots: Sociology	
PSYC 150	Roots: Psychology	
RELS (three courses) ++		9

College Writing (ENGL 110)	3
Modern Languages and Literatures *	6

++ *RELS 110 The Nature and Experience of Religion, a 200 level course in Catholic Studies, an upper level course in Global Studies or Contemporary issues.*

\* *A full-year requirement*

## Science Honors Program

The School of Science Honors Program is an impactful experience aimed at talented, highly qualified, and highly-motivated science and mathematics students, providing them an experience that develops rigorous and cutting-edge scientific skills, select experiences with top research faculty, leaders, and mentors, and exposure to and lived experience with Lasallian values.

Students are accepted into the Honors Program based on admissions criteria that combine high school academic performance, involvement in extracurricular activities, and potential for leadership and scholarship. They join a community of students who are focused on academic and leadership achievement. They enter a curriculum designed to enhance their science and interpersonal skills through seminar-style core classes, specialized major courses, and a senior capstone research experience/thesis. Additional career-related networking activities are also offered.

The curriculum will consist of at least 21 credits of Honors courses (at least 7 courses). Each student is required to take at least two Honors courses outside of their major, one of which may be outside the School of Science. The remaining courses will be in the major and will include at least 3 credits of Honors Thesis. The goal is that students would spread their Honors courses over their 4 years with their Thesis credits occurring in their last two years.

## Honor Societies and Research Opportunities

A number of national honor societies have been established on campus in order to encourage and recognize the achievements of Manhattan College students.

Phi Beta Kappa, founded in 1776, is dedicated to the idea of excellence in the liberal arts and sciences. The Manhattan College chapter, the Upsilon of New York, was established in 1971. Election to Phi Beta Kappa is generally regarded as a mark of the highest distinction.

Sigma Xi is a national honor society founded in 1896 to encourage research in the sciences. Students are elected to membership on the basis of their accomplishments in research and their enthusiasm for continued scientific investigation.

Departments of the School of Science sponsor local chapters of national honor societies in their disciplines; Beta Beta Beta (Biology), Gamma Sigma Epsilon (Chemistry and Biochemistry), Pi Mu Epsilon (Mathematics), Sigma Pi Sigma (Physics), Tau Sigma Kappa (Computer Science), Alpha Epsilon Delta (Health Pre-professional).

The Science faculty are dedicated to encouraging student research efforts. Manhattan's small classes and close student-faculty interactions generate an atmosphere which has produced many important student-faculty research collaborations. . Every summer over

thirty students receive financial support to conduct research with their faculty on campus.

The students' research is presented in regional and national conferences and leads to published papers in *The Manhattan Scientist* (<https://issuu.com/ctheodo21/docs/>) and in professional journals.

## Professional and Career Development

### Prelegal Advisory Committee

Students interested in entering law school may receive information and guidance through the Prelegal Advisory Committee. In addition to personal interviews, the Committee conducts group meetings to advise students on specialized fields of law. The Committee makes information available on requirements for admission to law schools, the availability of scholarships, and special opportunities in the legal profession.

### Health Professions Advisory Committee

The Health Professions Advisory Committee is a body of faculty members who give guidance to students interested in preparing for careers in medicine, dentistry, and allied health fields. Students are advised of the requirements established by the Association of American Medical Colleges, the American Dental Association, and other professional associations in the health field.

### Preparation for Medicine and Dentistry

Students preparing for professional school admission may major in any discipline in the College. Their preparation must include, at a minimum, the following courses.

BIOL 111 & BIOL 112	General Biology I and General Biology II	8
BIOL 113 & BIOL 114	General Biology I Laboratory and General Biology II Laboratory	0
CHEM 101 & CHEM 102	General Chemistry I and General Chemistry II	6
CHEM 103 & CHEM 104	General Chemistry Laboratory I and General Chemistry Laboratory II	2
CHEM 319 & CHEM 320	Organic Chemistry I and Organic Chemistry II	6
CHEM 323 & CHEM 324	Organic Chemistry Laboratory I and Organic Chemistry Laboratory II	4
ENGL 110	First Year Composition	3
MATH 185 & MATH 186 or MATH 155 & MATH 156	Calculus I and Calculus II Calculus for the Life Sciences I and Calculus for the Life Sciences II	6
Either		
PHYS 101 & PHYS 102	Physics I and Physics II	6

PHYS 191 & PHYS 192	Physics I Lab and Physics II Lab	2
or		
PHYS 107 & PHYS 108	Introduction to Physics I and Introduction to Physics II	8
PHYS 197 & PHYS 198	Introduction to Physics I Lab and Introduction to Physics II Lab	0

At least one course each in Biochemistry, Psychology, and Sociology are highly recommended by all medical schools. Pre-professional students are expected to maintain an average of at least B in their science courses.

## Courses

### **SCI 100. Science Orientation Seminar. 1 Credit.**

Science Orientation Seminar is a one credit seminar course for all freshmen to the School of Science. Topics include: preparation for a career in science, development of professional skills, conversations with external speakers, and use of technical resources across campus.

### **SCI 101. Science Orientation Seminar II. 1 Credit.**

Science Orientation Seminar II is a one-credit seminar course for all freshmen in the School of Science. Topics include: major-specific preparation for a career in science, development of professional skills, conversations with external speakers, and use of technical resources across campus.

### **SCI 105. Introduction to Pre-Health Studies. 1 Credit.**

Introduction to Pre-Health Studies is a one-credit seminar course for students interested in applying to post-graduate student in health professions schools. It will cover a range of topics related to health careers, feature external speakers, and develop professional skills.

### **SCI 201. Introduction Astronomy. 3 Credits.**

Fundamental properties of radiation. Astronomical measurements. The motions of the sun and the planets. Stellar evolution. Stellar clusters and galaxies. Two lectures and one two-hour lab per week.

### **SCI 202. Introduction Geology. 3 Credits.**

The basic feature of the earth's crust; the internal and external processes affecting it; its historical evolution. Two lectures and one two-hour lab per week.

### **SCI 203. Topics in Science I. 3 Credits.**

Topics chosen from chemistry and the allied physical sciences to illustrate the principles, history, and philosophy of science and its impact on everyday life. Topics include air and water environment, solid waste disposal, fossil fuels, synfuels, and nuclear energy. Two lectures and one two-hour lab per week.

### **SCI 204. Topics in Science II. 3 Credits.**

Topics chosen from chemistry and the allied life sciences to illustrate the principles, history, and philosophy of science and its impact on everyday life. Topics include the genetic code, biotechnology, food production, food and health, and drugs. Two lectures and one two-hour lab per week.

**SCI 205. Lasers, Light, and Optical Devices. 3 Credits.**

The basic principles of light and color. Simple optical systems; lenses, mirrors, prisms. Natural phenomena; human eye, rainbows, sunset and ocean colors. Cameras (traditional, digital), televisions (CRT, LCD, plasma). VCR's, DVD's. Two lectures and one two hour laboratory per week.

**SCI 210. Introductory Oceanography. 3 Credits.**

A study of the seafloor and air-ocean interactions. Using the results of the latest technology students will gain an appreciation of this vast and unexplored region of the planet. Two-hour lecture and two-hour lab per week.

**SCI 221. Introduction Meteorology. 3 Credits.**

The science and prediction of weather including the atmosphere, storms, greenhouse effect, heat, radiation, air pollution, climate and climate changes. Two lectures and one two-hour lab per week.

**SCI 230. Great Ideas in Physics. 3 Credits.**

A study of the development of scientific thought. The contributions of Aristotle, Copernicus, Newton, Joule, Thompson (Lord Kelvin), Einstein, Bohr, Heisenberg, Gell-Mann. Emphasis is put on those theories which changes the basic assumptions of science. Two lectures, one two-hour lab period per week.

**SCI 231. Chemistry in the Modern World. 3 Credits.**

A brief course in fundamental principles and applications of chemistry to the living world. Two lectures and one two-hour lab per week.

**SCI 232. Biol in the Modern World. 3 Credits.**

A basic study of the principles and applications of biology in contemporary life. Two lectures and one two-hour laboratory period.

**SCI 240. Fundamentals of Science I. 3 Credits.**

Introduction to scientific fundamentals. Two lectures and one two hour lab per week. Prerequisite: EDUC 205.

**SCI 241. Fundamentals of Life Science. 3 Credits.**

Introduction to life science fundamentals. Prerequisite: SCI 240.

**SCI 242. Fundamentals of Physical Science. 3 Credits.**

Introduction to physical science fundamentals. Prerequisite: SCI 240. Education students who must meet the earth science requirement take Introductory Astronomy 201 and Introductory Geology 202.

**SCI 301. Earth Science for Engineers. 3 Credits.**

An overview of the origin of the Earth, its major processes (movement of continents, opening of oceans and mountain building) common minerals and rock types, geologic structures and landscape development, and the ways in which they all interact. The course presents a quantitative treatment of the Earth's internal constituents, forces and near surface geological processes. Includes one field trip. Two hours of lecture and two hours of lab per week. Prerequisites: CHEM 101 and PHYS 101 or permission of Chair.

**SCI 321. Astronomy. 3 Credits.**

An intermediate level overview of the solar system and the physical properties of stars, stellar evolution, galaxies and the universe at large.

**SCI 323. Topics in Applied Conservation. 3 Credits.**

Detailed studies of selected aspects of resource conservation. Conservation and natural resource management problems at different geographic scales of analysis from the global, regional and local levels will be examined through a number of case studies. Two lectures and one two-hour lab per week.

**SCI 375. Pre-Health Professions Internship. 3 Credits.**

Pre-Health Professions Internship provides an opportunity to students to have their off campus Pre-Health experiences recorded on their transcript. This course will fulfill one academic requirement of the Pre-Health Professions Concentration.

**SCI 495. Research in Sci&Math. 0 Credits.**

This course offers opportunities to students to participate in research with their faculty advisor in any of the science majors offered in the School of Science (Biochemistry, Biology, Chemistry, Computer Science, Environmental Science, Mathematics, and Physics). Although the credit is 0 hours, the actual engagement can be of any duration. (Cr. 0) Grading system: P/F. Prerequisite: Consent of the instructor.

# Biochemistry & Chemistry

## Chair of the Department

The goals of the chemistry and biochemistry department are to provide a program which emphasizes the basic understanding of the constituents of matter, its transformations and the chemical principles involved therein. The department also promotes the study of the chemical and biochemical systems and the manner and methods by which they are investigated. To accomplish this goal, students are provided with a basic framework of knowledge by which they can carry out further study, research and understand the implication of scientific discoveries, inventions and their impact upon human welfare. They learn to think analytically and independently and are encouraged to apply this knowledge ethically throughout their lifetimes to civic, personal and professional problems. As a result, students are prepared for careers in the various disciplines and sub-disciplines of chemistry and biochemistry, in the teaching of these disciplines and for pursuing higher studies in basic and applied sciences or to follow professional careers in medicine, dentistry, law and other areas.

## B.S. Major in Chemistry

Students in this program must maintain a 2.8 GPA in the major by the end of the fourth semester. Students who do not maintain this GPA are advised not to continue in the chemistry major. The following chemistry courses are required:

CHEM 101	General Chemistry I	3
CHEM 102	General Chemistry II	3
CHEM 103	General Chemistry Laboratory I	1
CHEM 104	General Chemistry Laboratory II	1
CHEM 302	Analytical Chemistry	5
CHEM 309	Physical Chemistry I	3
CHEM 310	Physical Chemistry II	3
CHEM 311	Physical Chemistry Laboratory I	2
CHEM 319	Organic Chemistry I	3
CHEM 320	Organic Chemistry II	3
CHEM 323	Organic Chemistry Laboratory I	2
CHEM 324	Organic Chemistry Laboratory II	2
CHEM 335	Inorganic Chemistry	3
CHEM 336	Inorganic Chemistry Laboratory	2
CHEM 410	Physical Chemistry Laboratory II	2
CHEM 437	Computers, Structure and Bonding	3
CHEM 452	Advanced Spectroscopy	5

A minimum grade of C in any chemistry course is necessary for credit toward the major. Majors may not elect CHEM 100 Foundations of Chemistry, CHEM 105 General Chemistry I, or CHEM 106 General Chemistry II. The chemistry department is approved by the American Chemical Society and will certify students as having complied with the

Society requirements provided they have completed the minimum requirements for the B.S. plus CHEM 433 Biochemistry I and one additional 400 level course.

## B.S. Major in Biochemistry

Students in this program must maintain a 2.8 GPA in the major by the end of the fourth semester. Students who do not maintain this GPA are advised not to continue in the biochemistry major. The following courses are required:

CHEM 101	General Chemistry I	3
CHEM 102	General Chemistry II	3
CHEM 103	General Chemistry Laboratory I	1
CHEM 104	General Chemistry Laboratory II	1
CHEM 302	Analytical Chemistry	5
CHEM 309	Physical Chemistry I	3
CHEM 310	Physical Chemistry II	3
CHEM 311	Physical Chemistry Laboratory I	2
CHEM 319	Organic Chemistry I	3
CHEM 320	Organic Chemistry II	3
CHEM 323	Organic Chemistry Laboratory I	2
CHEM 324	Organic Chemistry Laboratory II	2
CHEM 335	Inorganic Chemistry	3
CHEM 433	Biochemistry I	3
CHEM 434	Biochemistry of Cellular Processes	3
CHEM 436	Biochemistry Laboratory	2
CHEM 437	Computers, Structure and Bonding	3
CHEM 457	Nucleic Acid Biochemistry	3
CHEM 459	Nucleic Acids BioChemistry Lab	2
BIOL 111 & BIOL 112	General Biology I and General Biology II	8
BIOL 113 & BIOL 114	General Biology I Laboratory and General Biology II Laboratory	0
Advanced Biology Elective		3

A minimum grade of C in any chemistry or biology course is necessary for credit toward the major. Majors may not elect CHEM 100 Foundations of Chemistry, CHEM 105 General Chemistry I, or CHEM 106 General Chemistry II. Students planning to enter either medical or dental school should consult with the Premedical Advisory Committee and should acquaint themselves with the entrance requirements of medical or dental schools. Students pursuing the B.S. degree in biochemistry may, through the judicious choice of electives comply with the American Chemical Society requirements for certification.

## B.A. Major in Chemistry

Students in this program must successfully complete the following courses with a minimum grade of C:



CHEM 101	General Chemistry I	3
CHEM 102	General Chemistry II	3
CHEM 103	General Chemistry Laboratory I	1
CHEM 104	General Chemistry Laboratory II	1
CHEM 319	Organic Chemistry I	3
CHEM 320	Organic Chemistry II	3
CHEM 323	Organic Chemistry Laboratory I	2
CHEM 324	Organic Chemistry Laboratory II	2
After completion of the preceding courses, students must take the following:		16
CHEM 302	Analytical Chemistry	
CHEM 309	Physical Chemistry I	
CHEM 310	Physical Chemistry II	
CHEM 311	Physical Chemistry Laboratory I	
Chemistry Elective		3-5

## B.A. Major in Biochemistry

Students in this program must successfully complete the following courses with a minimum grade of C:

CHEM 101	General Chemistry I	3
CHEM 102	General Chemistry II	3
CHEM 103	General Chemistry Laboratory I	1
CHEM 104	General Chemistry Laboratory II	1
CHEM 319	Organic Chemistry I	3
CHEM 320	Organic Chemistry II	3
CHEM 323	Organic Chemistry Laboratory I	2
CHEM 324	Organic Chemistry Laboratory II	2
BIOL 111	General Biology I	8
& BIOL 112	and General Biology II	
BIOL 113	General Biology I Laboratory	0
& BIOL 114	and General Biology II Laboratory	
After completion of the preceding courses, students must take the following:		21
CHEM 302	Analytical Chemistry	
CHEM 309	Physical Chemistry I	
CHEM 433	Biochemistry I	
CHEM 434	Biochemistry of Cellular Processes	
CHEM 436	Biochemistry Laboratory	
CHEM 457	Nucleic Acid Biochemistry	
CHEM 459	Nucleic Acids BioChemistry Lab	

Undergraduate research is encouraged and the department is equipped with state-of-the-art instrumentation that is available for student use. Included are a Fourier-transform infrared spectrophotometer, an X-ray crystallography apparatus, a diode-array UV/visible

spectrophotometer, a Fourier-transform nuclear magnetic resonance spectrophotometer, an atomic absorption unit, several high performance liquid chromatographs, gas chromatographs, and a molecular modeling laboratory.

Students who transfer into the chemistry and biochemistry programs are required to take at least half of their required chemistry credits at Manhattan College.

## Minor in Chemistry

Students should complete the following courses (or their corresponding Honors Course) in the Department of Chemistry and Biochemistry for the minor. A minimum grade of C is required for all courses.

CHEM 101	General Chemistry I	3
CHEM 102	General Chemistry II	3
CHEM 103	General Chemistry Laboratory I	1
CHEM 104	General Chemistry Laboratory II	1
CHEM 319	Organic Chemistry I	3
CHEM 320	Organic Chemistry II	3

One additional course selected from CHEM 302, CHEM 309, CHEM 310, CHEM 335 or CHEM 421 or CHEM 433. 3

## Minor in Biochemistry

Students should complete the following courses in the Department of Chemistry and Biochemistry for the minor. A minimum grade of C is required for all courses. A student may not count the same credits towards minors in both biochemistry and chemistry.

CHEM 319	Organic Chemistry I	3
CHEM 320	Organic Chemistry II	3
CHEM 433	Biochemistry I	3
CHEM 434	Biochemistry of Cellular Processes	3
CHEM 436	Biochemistry Laboratory	2
or CHEM 457	Nucleic Acid Biochemistry	

## Bachelor of Science in Chemistry

### First Year

Fall	Credits	Spring	Credits
CHEM 101		3 CHEM 102	3
CHEM 103		1 CHEM 104	1
MATH 185		3 MATH 186	3
ENGL 110		3 RELS 110	3
SCI 100		1 LLRN 102 or PHIL 213	3
Social Sciences		3 MLL	3
MLL		3 SCI 101	1

**Second Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CHEM 319		3 CHEM 320	3
CHEM 323		2 CHEM 324	2
MATH 285		3 CHEM 335	3
HIST 150		3 CHEM 336	2
ENGL 150		3 MATH 286	3
MUSC 150 or ART 150		3 PHIL 150	3
	17		16

**Third Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CHEM 302		5 CHEM 310	3
CHEM 309		3 CHEM 311	2
PHYS 101 & PHYS 191		4 PHYS 102 & PHYS 192	4
RELS Catholic Studies		3 CHEM 437	3
		RELS Global/Contemporary	3
	15		15

**Fourth Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CHEM 410		2 CHEM 452	5
Social Sciences		3 Electives <sup>1</sup>	11
Humanities Elective	3		
Electives <sup>1</sup>	9		
	17		16

Total Credits: 130

<sup>1</sup> For American Chemical Society Certification, 6 credits of electives must include CHEM 433 Biochemistry I and one other advanced chemistry course.

**Bachelor of Arts in Chemistry****First Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CHEM 101		3 CHEM 102	3
CHEM 103		1 CHEM 104	1
ENGL 110		3 Social Sciences	3
LLRN 102 or PHIL 213		3 MATH 186	3
MATH 185		3 RELS 110	3
SCI 100		1 MLL	3
MLL		3 SCI 101	1
	17		17

**Second Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CHEM 319		3 CHEM 320	3
CHEM 323		2 CHEM 324	2
CHEM 437		3 Electives <sup>1</sup>	3
MATH 285		3 ENGL 150	3
Electives <sup>1</sup>		3 PHIL 150	3
HIST 150		3 HSS	3
	17		17

**Third Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
PHYS 101 & PHYS 191		4 PHYS 102 & PHYS 192	4
CHEM 302		5 Social Sciences	3
RELS Catholic Studies		3 MUSC 150 or ART 150	3
Electives <sup>1</sup>		3 Electives <sup>1</sup>	6
	15		16

**Fourth Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CHEM 309		3 CHEM 310	3
CHEM Elective		3 CHEM 311	2
RELS Global/Contemporary		3 HSS Elective	3
HSS Elective		3 Electives <sup>1</sup>	6
Electives <sup>1</sup>		3	
	15		14

Total Credits: 128

<sup>1</sup> Of the 24 free electives allowed in the BA Chemistry program, at least six must be earned in the humanities or social sciences and six in the natural sciences or mathematics.

**Bachelor of Science in Biochemistry****First Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CHEM 101		3 CHEM 102	3
CHEM 103		1 CHEM 104	1
BIOL 111		4 BIOL 112	4
BIOL 113		0 BIOL 114	0
MATH 185 <sup>1</sup>		3 MATH 186 <sup>1</sup>	3
ENGL 110		3 RELS 110	3
LLRN 102 or PHIL 213		3 Social Sciences	3

SCI 100	1 SCI 101	1	
	18	18	
<b>Second Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CHEM 319		3 CHEM 320	3
CHEM 323		2 CHEM 324	2
PHYS 101 & PHYS 191 <sup>2</sup>		4 CHEM 433	3
BIOL 217		4 PHYS 102 & PHYS 192 <sup>3</sup>	4
MLL		3 MLL	3
	16		15
<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CHEM 302		5 CHEM 310	3
CHEM 309		3 CHEM 311	2
CHEM 457		3 CHEM 434	3
CHEM 436		2 PHIL 150	3
HIST 150		3 ADV BIOL Elective <sup>4</sup>	3-4
		CHEM 459	2
	16		16-17
<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CHEM 437		3 CHEM 335	3
ENGL 150		3 MUSC 150 or ART 150	3
Electives <sup>5</sup>		6 Social Sciences	3
RELS Catholic Studies		3 RELS Global/Contemporary	3
		Electives	3
	15		15

Total Credits: 129-130

<sup>1</sup> MATH 155 & MATH 156 may replace MATH 185 & MATH 186

<sup>2</sup> PHYS 107 & PHYS 197 may replace PHYS 101 & PHYS 191

<sup>3</sup> PHYS 108 & PHYS 198 may replace PHYS 102 & PHYS 192.

<sup>4</sup> The advanced biology elective to be chosen from the following courses: BIOL 225 Microbiology, BIOL 320 Animal Physiology, BIOL 321 Molecular Cell Biology, or BIOL 405 Neurobiology

<sup>5</sup> CHEM 456, Advanced Topics in Biochemistry, is highly recommended as a natural sciences elective for all biochemistry majors. Chem 456 is required for the Honors Biochemistry Degree.

## Bachelor of Arts in Biochemistry

### First Year

Fall	Credits	Spring	Credits
BIOL 111		4 BIOL 112	4
BIOL 113		0 BIOL 114	0
CHEM 101		3 CHEM 102	3
CHEM 103		1 CHEM 104	1
ENGL 110		3 Social Sciences	3
LLRN 102 or PHIL 213		3 RELS 110	3
SCI 100		1 SCI 101	1
MATH 185 <sup>1</sup>		3 MATH 186 <sup>1</sup>	3
	18		18

### Second Year

Fall	Credits	Spring	Credits
CHEM 319		3 CHEM 320	3
CHEM 323		2 CHEM 324	2
HIST 150		3 PHIL 150	3
BIOL 217		4 CHEM 433	3
MLL		3 MLL	3
	15		14

### Third Year

Fall	Credits	Spring	Credits
PHYS 101 & PHYS 191 <sup>2</sup>		4 CHEM 434	3
CHEM 457		3 PHYS 102 & PHYS 192 <sup>3</sup>	4
CHEM 436		2 CHEM 459	2
ENGL 150		3 Electives <sup>5</sup>	6-7
Electives <sup>4</sup>		3	
	15		15-16

### Fourth Year

Fall	Credits	Spring	Credits
CHEM 302		5 Social Sciences	3
CHEM 309		3 RELS Global/Contemporary	3
MUSC 150 or ART 150		3 Electives	9-10
RELS Catholic Studies		3	
Electives		3	
	17		15-16

Total Credits: 127-129

- 1 *MATH 155 & MATH 156 may replace MATH 185 & MATH 186.*
- 2 *PHYS 107 & PHYS 197 may replace PHYS 101 & PHYS 191*
- 3 *PHYS 108 & PHYS 198 may replace PHYS 102 & PHYS 192*
- 4 *Of the 21 free elective credits allowed in the BA biochemistry program, at least six must be earned in the humanities or social sciences and six in the natural sciences or mathematics. CHEM 456, Advanced Topics in Biochemistry, is highly recommended as a natural science elective for all biochemistry majors.*
- 5 *Total credit count could vary due to natural science electives in biology that include a laboratory component.*

## Courses

### **CHEM 100. Foundations of Chemistry. 3 Credits.**

A course in fundamental principles and applications of chemistry to the living world. Two lectures and one two-hour laboratory period. This course is designed for students majoring in the Arts, in Physical Education, or in Radiological Sciences and cannot be used as a substitute for any other course in chemistry.

### **CHEM 101. General Chemistry I. 3 Credits.**

The fundamental laws and principles of chemistry of matter and energy, stoichiometry and chemical equations, thermochemistry, atomic structure, periodic relationships, and chemical bonding. Three lectures per week. Prerequisite: a high school chemistry course or CHEM 100. Pre- or corequisite: CHEM 103.

### **CHEM 102. General Chemistry II. 3 Credits.**

The fundamental laws and principles of chemistry of gases, intermolecular forces, properties of solutions, chemical kinetics, chemical equilibrium, acid-base equilibria and oxidation-reduction reactions. Three lectures per week. Prerequisite: CHEM 101. It is required that a student achieve a grade of C or higher in CHEM 101 before taking CHEM 102. Pre- or corequisite: CHEM 104.

### **CHEM 103. General Chemistry Laboratory I. 1 Credit.**

Laboratory experiments that illustrate and test the principles learned in CHEM 101, and that give students experience in basic chemistry laboratory procedures: the meaning of chemical reactivity; the synthesis and analysis of chemical compounds; reactions in aqueous solution; gravimetric and volumetric analysis; atomic structure and the nature of color; thermochemistry. Three laboratory hours. Corequisite: CHEM 101.

### **CHEM 104. General Chemistry Laboratory II. 1 Credit.**

Laboratory experiments that illustrate and test the principles learned in CHEM 102, and that develop the students' laboratory technique: synthesis and analysis of a transition metal complex; quantitative spectrophotometry; determination of rate laws and activation energy; acid-base chemistry, titrations, and calculations; chemical equilibrium with emphasis on the aqueous chemistry of metal ions; and electrochemistry. Three laboratory hours. Prerequisite: A grade of C or higher in both CHEM 101 and CHEM 103. Corequisite: CHEM 102.

**CHEM 105. General Chemistry I. 4 Credits.**

An introductory course in the principles of chemistry, with application to the health sciences. Fundamentals of general chemistry, organic chemistry and biochemistry. Appropriate laboratory exercises illustrate these principles and develop techniques. This course cannot be taken as a prerequisite for Organic Chemistry. Three lectures and one three-hour laboratory period per week.

**CHEM 106. General Chemistry II. 4 Credits.**

An introductory course in the principles of chemistry, with application to the health sciences. Fundamentals of general chemistry, organic chemistry and biochemistry. Appropriate laboratory exercises illustrate these principles and develop techniques. This course cannot be taken as a prerequisite for Organic Chemistry. Three lectures and one three-hour laboratory period per week.

**CHEM 111. Nanoscience I. 3 Credits.**

This course will explore the basics of nanoscience, with an emphasis on its broad impact on society. The goal of this course is to introduce students to nanoscience, highlighting the extensive interdisciplinary nature of nanoscience. Topics include what is the nanoscale, what are the advantages of nanoscale substances, and various applications of nanomaterials. Pre-requisite: CHEM 101.

**CHEM 197. General Chemistry: Honors. 4 Credits.**

An intensive introductory course in all the major branches of chemistry, including biochemistry. The level at which material is introduced will vary so as to adjust to the backgrounds of the students. The laboratory will include some open ended experiments designed to develop an appreciation for creative research. Admission to the course is by invitation of the professor in charge of the course and is not restricted to chemistry majors. Three lectures and one three-hour laboratory period per week. Registration only with permission of instructor.

**CHEM 198. General Chemistry: Honors. 4 Credits.**

An intensive introductory course in all the major branches of chemistry, including biochemistry. The level at which material is introduced will vary so as to adjust to the backgrounds of the students. The laboratory will include some open ended experiments designed to develop an appreciation for creative research. Admission to the course is by invitation of the professor in charge of the course and is not restricted to chemistry majors. Three lectures and one three-hour laboratory period per week. Registration only with permission of instructor.

**CHEM 199. Chemistry and Biochemistry of Wine making. 3 Credits.**

This course provides insights into the interplay of chemical and biochemical reactions that occur in wine during the winemaking process. An understanding of such reactions establishes the necessary background for making informed decisions on wine production. Students learn the importance of grape varieties, terroir, acidity, sugar and polyphenolic compounds, the process of fermentation and other critical topics associated with wine chemistry and biochemistry. Guided visits to vineyards in Tuscany and characteristic 'Enoteche' in Florence.



**CHEM 302. Analytical Chemistry. 5 Credits.**

Principles and applications of classical wet analytical techniques such as gravimetric and volumetric methods, as well as modern analytical techniques, such as electrochemistry, spectroscopy and chromatography. Statistical evaluation of analytical data. Three lectures and a four hour laboratory. Prerequisite: CHEM 102. It is required that a student achieve a grade of C or higher in CHEM 102 before taking CHEM 302.

**CHEM 309. Physical Chemistry I. 3 Credits.**

The application of thermodynamics to the study of the states of matter, phase equilibria, chemical equilibria, thermal chemistry, and electrochemistry. Chemical kinetics, diffusion and the migration of ions. Elucidation of the molecular structure of matter by classical physical and quantum mechanical considerations. Prerequisite: CHEM 102. Corequisites: MATH 285, and PHYS 102 or PHYS 108.

**CHEM 310. Physical Chemistry II. 3 Credits.**

The application of thermodynamics to the study of the states of matter, phase equilibria, chemical equilibria, thermal chemistry, and electrochemistry. Chemical kinetics, diffusion and the migration of ions. Elucidation of the molecular structure of matter by classical physical and quantum mechanical considerations. Prerequisite: CHEM 102. Corequisites: MATH 285 or MATH 201, and PHYS 102 or PHYS 108.

**CHEM 311. Physical Chemistry Laboratory I. 2 Credits.**

Laboratory studies of physical chemical measurements on gases, heats of chemical processes, equilibrium, emf and conductance. A four hour laboratory. Corequisite: CHEM 310.

**CHEM 319. Organic Chemistry I. 3 Credits.**

The chemistry of carbon compounds. Emphasis on structure and mechanisms of organic reactions. Three lectures and one problem period. Prerequisite: CHEM 102.

**CHEM 320. Organic Chemistry II. 3 Credits.**

The chemistry of carbon compounds. Emphasis on structure and mechanisms of organic reactions. Three lectures and one problem period. Prerequisite: CHEM 319.

**CHEM 323. Organic Chemistry Laboratory I. 2 Credits.**

Synthesis, purification, analysis, mechanistic studies and spectral characterization of organic compounds. Four hours of laboratory. Prerequisite or Co-requisite: CHEM 319.

**CHEM 324. Organic Chemistry Laboratory II. 2 Credits.**

Synthesis, purification, analysis, mechanistic studies and spectral characterization of organic compounds. Four hours of laboratory. Prerequisite: A grade of C or better in CHEM 323 and a grade of C or better in CHEM 320. Co-requisite: CHEM 320.

**CHEM 333. Nanoscience II. 4 Credits.**

This course will explore the chemistry behind the synthetic techniques used to create nanoscale materials. The theory behind both solution processed materials and solid state reactions will be explored during the lecture. The laboratory portion of the course will serve to enhance the students understanding of the lecture material by exploring the practical aspects of nanoscale material synthesis. Pre-requisite: CHEM 309.

**CHEM 335. Inorganic Chemistry. 3 Credits.**

The chemistry of the elements and their compounds. Industrial, biochemical, environmental, and geochemical applications of inorganic chemistry are emphasized. The periodic table, elementary bonding models and thermodynamic data are used to organize, understand, and predict chemical and physical properties of inorganic compounds. Three lectures. Prerequisite: CHEM 102.

**CHEM 336. Inorganic Chemistry Laboratory. 2 Credits.**

Study of the properties, synthesis and characterization of inorganic compounds. Experiments include preparations of metallic and non-metallic elements from compounds; simple salts by wet and dry methods; common gases; coordination compounds; air sensitive compounds; organometallic compounds; high temperature superconductors. A four hour laboratory. Prerequisite or Co-requisite: CHEM 335.

**CHEM 375. Internship for Juniors. 3 Credits.**

Students participate in an off-campus training experience closely related to one of the areas of chemistry or biochemistry. Frequent meetings with the advisor plus a paper are required. Prerequisites: Junior status, 3.0 GPA, and permission of the student's advisor or the Chair.

**CHEM 410. Physical Chemistry Laboratory II. 2 Credits.**

Laboratory studies of kinetics, spectroscopy, molecular structure and molecular modeling. A four hour laboratory. Prerequisite or Co-requisite: CHEM 311.

**CHEM 415. Advanced Organic Chemistry. 3 Credits.**

Structure, mechanism and synthesis in modern organic chemistry. An introduction to the chemistry of natural products and heterocyclic compounds will be included. Three lectures. Prerequisite: CHEM 320.

**CHEM 421. Advanced Topics: in Chemistry. 3 Credits.**

Advanced topics in chemistry will be chosen from several areas of chemistry on a rotating basis. Current course offerings include transition metal catalysts in organic synthesis, polymer chemistry, environmental chemistry, industrial chemistry, physical organic chemistry, applications of organic chemistry (dyes and fragrance/flavor chemistry) and an advanced synthesis laboratory. Other topics of current interest can be added at the discretion of the department. A student may elect the course more than once if the topics are different each time. Three lecture hours or eight laboratory hours per week. Repeatable. Prerequisites: CHEM 310, CHEM 320.

**CHEM 427. Advanced Physical Chemistry. 3 Credits.**

Topics in theoretical physical chemistry with an introduction to the chemical aspects of quantum and statistical mechanics, and group theory. Three lectures. Prerequisite: CHEM 310.

**CHEM 433. Biochemistry I. 3 Credits.**

An introduction to the chemistry of biologically important amino acids, proteins, carbohydrates, lipids, vitamins and hormones. Enzyme kinetics and catalysis, protein structure and function, introduction to intermediary metabolism will be included. Three lectures. Prerequisite: CHEM 319. Corequisite: CHEM 320.

**CHEM 434. Biochemistry of Cellular Processes. 3 Credits.**

Chemistry and metabolism of proteins, carbohydrates, and lipids. Protein folding and posttranslational modification. Three lectures. Prerequisite: CHEM 433.

**CHEM 435. Advanced Inorganic Chemistry. 3 Credits.**

Molecular structure and bonding theory. Transition metal chemistry. An introduction to spectroscopy, catalysis, and organometallic chemistry. Three lectures. Prerequisites: CHEM 310 and CHEM 335.

**CHEM 436. Biochemistry Laboratory. 2 Credits.**

Four hour laboratory with emphasis on techniques used in protein and enzymology laboratories. Pre- or Corequisite: CHEM 433.

**CHEM 437. Computers, Structure and Bonding. 3 Credits.**

An intermediate level presentation of the fundamental ideas of metallic, ionic and covalent bonding. The consequences of these bonding schemes are then related to the plenitude of three dimensional chemical, biochemical, and crystalline structure. The latest computer software of interest to chemists and biochemists is incorporated in a hands on approach in order to render chemical structures and deduce chemical properties based on the bonding pertinent to those structures using the computer for chemical literature searching and manuscript preparation. Three lectures. Prerequisites: CHEM 309, CHEM 320, and CHEM 335.

**CHEM 444. Nanoscience III. 3 Credits.**

The goal of this course is to instruct students on the theory behind the tools used to characterize nanomaterials. Additionally, students will be introduced to various methods to fabricate nanoscale materials and structures using these instruments. The theory of electron microscopy will be discussed, as well as, EDAX, SAED, XPS, SQUID, and others. At the end of the semester the student is expected to have a thorough understanding of the theoretical basis that distinguishes nanoscience materials and their construction. Prerequisites: CHEM 333.

**CHEM 452. Advanced Spectroscopy. 5 Credits.**

Molecular UV/Vis absorption and luminescence spectroscopy; atomic absorption and emission spectroscopy; nuclear magnetic resonance spectrometry; infrared and Raman spectroscopy; mass spectroscopy. Three lectures and a four hour laboratory. Prerequisites: CHEM 302, CHEM 310, CHEM 320, CHEM 324, CHEM 410.

**CHEM 456. Advanced Topics: Biochemistry. 3 Credits.****CHEM 457. Nucleic Acid Biochemistry. 3 Credits.**

Biochemistry of molecular pathways that involve the nucleic acids, DNA and RNA. Emphasis will be placed on nucleic acid structure, function relationships and those proteins associated in DNA and RNA related pathways. Topics include the biochemistry of replication, transcription, translation, DNA repair, and chromosomal higher-ordered structuring. Three lectures. Prerequisite: CHEM 433.

**CHEM 459. Nucleic Acids BioChemistry Lab. 2 Credits.**

Four Hours of laboratory with emphasis on techniques used in nucleic acid laboratories. Fall or Spring. Prerequisite: CHEM 433. Corequisite: CHEM 457.

**CHEM 460. Chemical Research. 1 Credit.**

An investigation of an original nature carried out by the student under the guidance of a faculty member; a brief written report is submitted to and approved by the faculty of the department.

**CHEM 461. Chemical Research. 2 Credits.**

An investigation of an original nature carried out by the student under the guidance of a faculty member; a brief written report is submitted to and approved by the faculty of the department.

**CHEM 475. Internship for Seniors. 3 Credits.**

Students participate in an off-campus training experienced closely related to their area of chemistry or biochemistry. Frequent meetings with the advisor plus a paper are required. Prerequisites: Senior status. 3.0 GPA, and permission of the student's advisor or the Chair.

**CHEM 495. Summer Research. 3 Credits.****CHEM 571. Physical Biochemistry. 3 Credits.**

Quantitative characterization and analysis of macromolecules with applications of biochemistry and molecular biology. Emphasis on the principles and application of laboratory techniques including chromatography, electrophoresis, hydrodynamic methods and spectroscopy. Three lectures. Prerequisite: CHEM 434.

# Biology

Dr. Bruce Shockey  
Chair of the Department

Biology is housed in Leo Building and in Hayden Hall.

Many of the critical problems that the world faces, which challenge values and beliefs, can best be understood with a knowledge of biological principles. Accordingly, the mission of the Department of Biology is to give our students an appreciation of the methods, potentials, achievements, and limitations of the biological sciences, and to instill in them the intellectual and ethical skills to use this information effectively. To accomplish this, the Department provides a combination of required and elective courses in biology consistent with a liberal education. The department maintains a tradition of strong support for undergraduate research. The faculty members of the Department of Biology recognize their responsibility to teach the values that are important to the process of free inquiry, the foundation of the discipline. The department fosters the utilization of research strategies to address scientific questions, the abilities of students to communicate scientific principles.

The department also cultivates the critical thinking skills of students. The Department of Biology strives to prepare the students for advanced studies and professional careers.

## Major

Every student considering a major in the department must consult their faculty advisor by the end of the first semester. Beginning Fall 2014, all standard required courses for the Biology major at the 200 and above level will transition to 4 credits (except for BIOL 207 & 208. BIOL 207 and BIOL 208 will transition to 4 credits in the fall of 2018). This transition will affect the class of 2017 and beyond and will not change the total number of credits to graduate.

## B.S. Degree

Recognizing the various professional goals of our students, the department offers groups of courses in several areas of study which contribute toward reaching a specific career objective. These areas of study include: Pre-Medical-Dental, Pre-Professional, Research, Environmental Biology, Education, General Studies in Biology, and Pre-Physical Therapy.

Students who wish to prepare for professional or graduate school require 8 credits in General Biology courses, plus a minimum of 34 credits in upper-class Biology courses for the B.S. degree. This includes all of the following:

### Required

BIOL 111	General Biology I	4
Pre-, and co-requisite BIOL 113		
BIOL 112	General Biology II	4
Pre-, and co-requisite BIOL 114		
BIOL 113	General Biology I Laboratory	0
Pre-, and co-requisite BIOL 111		
BIOL 114	General Biology II Laboratory	0
Pre-, and co-requisite BIOL 112		

BIOL 217	Genetics	4
BIOL 223	Ecology	4
BIOL 231	Evolution	4
BIOL 404 & BIOL 414	Biology Colloquium I and Biology Colloquium II	2
<b>Cell &amp; Molecular Biology (choose any two 4-credit courses)</b>		<b>8</b>
BIOL 225	Microbiology	
BIOL 302	Developmental Biology	
BIOL 319	Cellular BioChemistry/Physiology	
BIOL 321	Molecular Cell Biology	
BIOL 401	Histology	
BIOL 405	Neurobiology	
BIOL 416	Tissue Culture	
BIOL 426	Immunology	
<b>Organismal Biology (choose any two 4-credit courses)</b>		<b>8</b>
BIOL 301	Comparative Chordate Anatomy	
BIOL 304	Invertebrate Zoology	
BIOL 305	Plant Biology	
BIOL 320	Animal Physiology	
BIOL 326	Animal Behavior	
BIOL 409	Marine Biology	
BIOL 431	Freshwater Ecology	
BIOL 432	Estuarine and Coastal Ecology	
<b>Electives (choose combination of courses to total at least 4 credits)</b>		<b>4</b>
any 1 of Cell & Molecular or Organismal		
BIOL 207	Anatomy and Physiology I	
BIOL 208	Anatomy and Physiology II	
BIOL 310	Research in Biology for Juniors	
BIOL 311	Research in Biology for Juniors	
BIOL 410	Research in Biology for Seniors	
BIOL 411	Research in Biology for Seniors	
BIOL 318	Advances in Nutrition	
BIOL 360	Independent Study in Biology for Juniors	
BIOL 460	Independent Study in Biology	
BIOL 375	Internship for Juniors	
BIOL 475	Internship for Seniors	
BIOL 406	Special Topics: in Biology	
Pre-, and co-requisite BIOL 111		
Pre-, and co-requisite BIOL 111		
Pre-, and co-requisite BIOL 114		
BIOL 207 prerequisite		

	4
4 credits	4
Total Credits	50

Students plan an individual program of study with their Biology courses and free electives after consultation with an advisor in the Biology Department.

In order to pursue any specific area of study, it is essential that a student plan his/her proposed course sequence in close consultation with his/her Biology faculty advisor and the Chair. For Biology majors to take 200, 300, and 400 level courses, a C or better grades in General Biology I (BIOL 111 and BIOL 113) and General Biology II (BIOL 112 and BIOL 114) or the equivalents are required.

## Pre-Medical-Dental

Students are urged to take:

BIOL 302	Developmental Biology	4
BIOL 405	Neurobiology	4
BIOL 225	Microbiology	4
BIOL 426	Immunology	4
BIOL 319	Cellular BioChemistry/Physiology	4

## Pre-Professional

Students are urged to take:

BIOL 302	Developmental Biology	4
BIOL 405	Neurobiology	4
BIOL 416	Tissue Culture	4
BIOL 225	Microbiology	4
BIOL 319	Cellular BioChemistry/Physiology	4

## Environmental Biology

Students are urged to take:

BIOL 304	Invertebrate Zoology	4
BIOL 326	Animal Behavior	4
BIOL 409	Marine Biology	4
BIOL 431	Freshwater Ecology	4
BIOL 432	Estuarine and Coastal Ecology	4

## Education Studies

Students are urged to take:

BIOL 207	Anatomy and Physiology I	4
BIOL 208	Anatomy and Physiology II	4

BIOL 302	Developmental Biology	4
BIOL 304	Invertebrate Zoology	4
BIOL 318	Advances in Nutrition	2
BIOL 326	Animal Behavior	4
BIOL 409	Marine Biology	4

## Pre-Physical Therapy

Students are urged to take:

BIOL 207	Anatomy and Physiology I (prerequisite)	4
BIOL 208	Anatomy and Physiology II	4
BIOL 375	Internship for Juniors	2
BIOL 441	Cardiovascular Biology	3

## Cognate Requirements

### B.S. Degree

CHEM 101 & CHEM 102	General Chemistry I and General Chemistry II	6
CHEM 103	General Chemistry Laboratory I	1
CHEM 104	General Chemistry Laboratory II	1
CHEM 319 & CHEM 320	Organic Chemistry I and Organic Chemistry II	6
CHEM 323 & CHEM 324	Organic Chemistry Laboratory I and Organic Chemistry Laboratory II	4
MATH 155 & MATH 156	Calculus for the Life Sciences I and Calculus for the Life Sciences II	6
PHYS 107 & PHYS 108	Introduction to Physics I and Introduction to Physics II	8
Total Credits		32

### B.A. Degree

Recognizing that many students have a distinct interest in Biology, yet possess diverse and non-traditional career goals, the Department offers the B.A. degree with a relatively large number of electives. Students should use these electives to either minor or concentrate in any of the humanities, social science or business disciplines. This program does not prepare students for medical/professional school, graduate studies in Biology, or physical therapy programs unless other prerequisites are met. The program is intended to help students obtain employment in medical and pharmaceutical sales, medical writing, careers in public health and safety and the insurance industry as it relates to health care.

### Cognate Requirements



## B.A. Degree

CHEM 101 & CHEM 102	General Chemistry I and General Chemistry II	6
CHEM 103	General Chemistry Laboratory I	1
CHEM 104	General Chemistry Laboratory II	1
CHEM 319 & CHEM 320	Organic Chemistry I and Organic Chemistry II	6
MATH 100	Pre-Calculus Mathematics	3
MATH 230	Elementary Statistics	3
PHYS 107 & PHYS 108	Introduction to Physics I and Introduction to Physics II	8
Total Credits		28

## Minors

15 credits in Biology courses planned in consultation with and approval of the Chair of the Biology Department. Eight of these credits must be the General Biology sequence (BIOL 111-114). The remaining credits must be chosen from courses that satisfy B.S. major requirements.

### Grade Requirements

Majors and minors must attain a minimum grade of C in all biology courses. Prerequisites for Upper Level Biology Courses: C or better in General Biology I (BIOL 111 and BIOL 113) and C or better in General Biology II (BIOL 112 and BIOL 114) or the equivalents are required.

The following courses are offered for and are restricted to students majoring in departments other than Biology. Under no circumstances will students majoring in Biology receive major credit for the following courses:

BIOL 103	Introduction to Biology	3
BIOL 115 & BIOL 116	Principles of Biology I and Principles of Biology II	4
BIOL 117 & BIOL 118	Principles of Biology Laboratory I and Principles of Biol Lab II	4
BIOL 207 & BIOL 208	Anatomy and Physiology I and Anatomy and Physiology II	8
BIOL 221	Introductory Nutrition	3
BIOL 222	Biology for Engineers	3
BIOL 441	Cardiovascular Biology	3

## Registration for Advanced Courses

Permission of the academic advisor of the Biology Department is required for registration in all courses at the 300 and 400 levels.

A student may take 9 Biology credits in Research and/or Independent Study. However, only 3 of these credits may be in Independent Study.

## Bachelor of Science in Biology

### First Year

Fall	Credits	Spring	Credits
BIOL 111		4 BIOL 112	4
BIOL 113		0 BIOL 114	0
MATH 155		3 CHEM 102	3
CHEM 101		3 CHEM 104	1
CHEM 103		1 MATH 156	3
SCI 100		1 PHIL 213	3
ENGL 110		3 RELS 110	3
		SCI 101	1
	15		18

### Second Year

Fall	Credits	Spring	Credits
MLL		3 BIOL 231	4
BIOL 223		4 CMPT 155	3
BIOL 217		4 CHEM 320	3
CHEM 319		3 CHEM 324	2
CHEM 323		2 MLL	3
		Elective	3
	16		18

### Third Year

Fall	Credits	Spring	Credits
BIOL Cell Elective		4 BIOL Organismal Elective	4
HIST 150		3 PHYS 108	4
ENGL 150		3 PHIL 150	3
RELS Catholic Studies		3 Social Sciences	3
PHYS 107		4	
	17		14

### Fourth Year

Fall	Credits	Spring	Credits
BIOL Organismal Elective		4 BIOL Cell Elective	4
BIOL Elective		2 BIOL Elective	2
RELS Global/Contemporary		3 BIOL 414	1
Social Sciences		3 MUSC 150 or ART 150	3
Elective		3 Electives	6

BIOL 404	1	
	16	16

Total Credits: 130

## Bachelor of Arts in Biology

### First Year

Fall	Credits	Spring	Credits
BIOL 111		4 RELS 110	3
BIOL 113		0 MLL	3
MLL		3 BIOL 112	4
CHEM 101		3 BIOL 114	0
CHEM 103		1 CHEM 102	3
SCI 100		1 CHEM 104	1
ENGL 110		3 PHIL 213	3
	15		17

### Second Year

Fall	Credits	Spring	Credits
BIOL 217		4 BIOL 231	4
CHEM 319		3 CHEM 320	3
MATH 100		3 Social Sciences	3
CMPT 155		3 MATH 230	3
BIOL 223		4 HIST 150	3
	17		16

### Third Year

Fall	Credits	Spring	Credits
BIOL Elective		3 BIOL Elective	3
PHYS 107		4 Free Elective*	3
Free Elective*		3 ENGL 150	3
Social Studies		3 PHYS 108	4
MUSC 150 ( or ART 150)		3 PHIL 150	3
	16		16

### Fourth Year

Fall	Credits	Spring	Credits
BIOL Elective		4 BIOL Elective	4
RELS Catholic Studies		3 BIOL 414	1
Free Electives*		10 RELS Global/Contemporary	3
BIOL 404		1 Free Electives*	6
	18		14

Total Credits: 129

## Courses

### **BIOL 092. Biology Elective. 3 Credits.**

### **BIOL 099. Biology Bridge Course. 0 Credits.**

This is a Pre-Freshman Biology course designed to introduce students to the nature of modern biology as it is taught at Manhattan College and to prepare them to be successful in General Biology. Using a combination of classroom techniques, including interactive lectures, problem-solving and facilitated discussions, this course focuses on selected topics that are normally covered in the General Biology majors courses. In addition, this course seeks to develop transferable skills that incorporate successful strategies for the deep learning and application of modern Biology, such as critical thinking and reading, effective note-taking, and exam preparation.

### **BIOL 103. Introduction to Biology. 3 Credits.**

A basic study of the principles and applications of biology in contemporary life. Two lectures and one two-hour laboratory period.

### **BIOL 104. Introduction to Biology Laboratory. 0 Credits.**

A basic study of the principles and applications of biology in contemporary life. One two hour laboratory period.

### **BIOL 111. General Biology I. 4 Credits.**

An exploration of the central concepts of cell biology, cell physiology, molecular biology, genetics, and evolution. Three 1-hr lectures. The General Biology sequence (BIOL 111-BIOL 114) is required for those majoring in Biology or Pre-Med. Offered alternating semesters. Co-requisite: BIOL 113. Offered Fall/Spring.

### **BIOL 112. General Biology II. 4 Credits.**

An exploration of the central concepts of evolution, biodiversity, organismal anatomy and physiology, and ecology. Three 1-hr lectures. The General Biology sequence (BIOL 111, BIOL 112, BIOL 113, BIOL 114) is required for those majoring in Biology or Pre-Med. Prerequisite: Grade of C or better in BIOL 111. Pre-requisites: BIOL 111 and BIOL 113. Co-requisite: BIOL 114. Offered Fall/Spring.

### **BIOL 113. General Biology I Laboratory. 0 Credits.**

An exploration of the central concepts of cell biology, cell physiology, molecular biology, genetics, and evolution. One 3-hr laboratory. The General Biology sequence (BIOL 111-BIOL 114) is required for those majoring in Biology or Pre-Med. Offered alternating semesters. Co-requisite: BIOL 111.

### **BIOL 114. General Biology II Laboratory. 0 Credits.**

An exploration of the central concepts of evolution, biodiversity, organism anatomy and physiology, and ecology. One 3-hr laboratory. The General Biology sequence (BIOL 111, BIOL 112, BIOL 113, BIOL 114) is required for those majoring in Biology or Pre-Med. Prerequisite: Grade of C or better in BIOL 111. Co-requisite: BIOL 112. Offered Fall/Spring.

### **BIOL 115. Principles of Biology I. 2 Credits.**

An introduction to the basic principles and concepts of cell biology, cell physiology, molecular biology, genetics, and evolution with emphasis on the human organism. Two 1-hr lectures and one discussion period. The Principles of Biology sequence (BIOL 115-BIOL 118) is intended for those not majoring in Biology or Pre-Med. Offered alternating semesters. Co-requisite: BIOL 117.

**BIOL 116. Principles of Biology II. 2 Credits.**

An introduction to the basic principles and concepts of evolution, biodiversity, organismal anatomy and physiology, and ecology with emphasis on the human organism. Two 1-hr lectures and one discussion period. The Principles of Biology sequence (BIOL 115-BIOL 118) is intended for those not majoring in Biology or Pre-Med. Offered alternating semesters. Prerequisite: BIOL 115 & BIOL 117. Co-requisite: BIOL 118.

**BIOL 117. Principles of Biology Laboratory I. 2 Credits.**

An introduction to the basic principles and concepts of cell biology, cell physiology, molecular biology, genetics, and evolution with emphasis on the human organism. One 3-hr laboratory. The Principles of Biology sequence (BIOL 115-BIOL 118) is intended for those not majoring in Biology or Pre-Med. Offered alternating semesters. Co-requisite: BIOL 115.

**BIOL 118. Principles of Biol Lab II. 2 Credits.**

An introduction to the basic principles and concepts of evolution, biodiversity, organismal anatomy and physiology, and ecology with emphasis on the human organism. One 3-hr laboratory. The Principles of Biology sequence (BIOL 115-BIOL 118) is intended for those not majoring in Biology or Pre-Med. Offered alternating semesters. Prerequisites: BIOL 115 & BIOL 117. Co-requisite: BIOL 116.

**BIOL 119. General Biology II. 2 Credits.**

An exploration of the central concepts of evolution, biodiversity, organismal anatomy and physiology, and ecology. Three 1-hr lectures. The General Biology sequence (BIOL 111, BIOL 112, BIOL 113, BIOL 114) is required for those majoring in Biology or Pre-Med. This course is restricted only to students who wish to repeat BIOL 112 to fulfill the credit requirement under the previous course catalog. Prerequisite: Grade of C or better in BIOL 111 and BIOL 113. Co-requisite: BIOL 114. Offered: Fall/Spring.

**BIOL 120. General Biology II Laboratory. 2 Credits.**

An exploration of the central concepts of evolution, biodiversity, organismal anatomy and physiology, and ecology. One 3-hr laboratory. The General Biology sequence (BIOL 111, BIOL 112, BIOL 113, BIOL 114) is required for those majoring in Biology or Pre-Med. This course is restricted only to students who wish to repeat BIOL 112 to fulfill the credit requirement under the previous course catalog. Prerequisite: Grade C or better in BIOL 111 & BIOL 113. Co-requisite: BIOL 112. Offered: Fall/Spring.

**BIOL 121. General Biology I Honors. 4 Credits.**

General Biology I is a foundation-level course that is a prerequisite for a second-level course, General Biology II. Although the topics covered in this course are similar to BIOL 111, students will examine them in greater depth. Offered: Fall. Co-requisite: BIOL 123.

**BIOL 122. General Biology II Honors. 4 Credits.**

General Biology II Honors is a second semester sequence of BIOL 121. It is a foundation-level course that examines the relationship between organisms. Although the topics covered in this course are similar to BIOL 112, students will examine them in greater depth. Offered: Spring semester. Pre-requisite: Grade of B or better in BIOL 121. Co-requisite: BIOL 124.

**BIOL 123. General Biology I Laboratory Honors. 0 Credits.**

An exploration of the central concepts of cell biology, cell physiology, molecular biology, genetics, and evolution. One 3-hr laboratory. The topics covered in this course are similar to BIOL 113, but in BIOL 123 students will examine them in greater depth. Offered: Fall. Co-requisite: BIOL 121.

**BIOL 124. General Biology II Lab Honors. 0 Credits.**

An exploration of the relationship between organisms. One 3-hr laboratory. The topics covered in this course are similar to BIOL 114. In BIOL 124, students will examine them in greater depth. Offered: Spring.

**BIOL 125. General Biology I. 2 Credits.**

An exploration of the central concepts of cell biology, cell physiology, molecular biology, genetics, and evolution. Three 1-hr lectures. The General Biology sequence (BIOL 111-BIOL 114) is required for those majoring in Biology or Pre-Med. This course is restricted only to students who wish to repeat BIOL 111 to fulfill the credit requirement under the previous course catalog. Offered alternating semesters. Co-requisite: BIOL 126.

**BIOL 126. General Biology I Laboratory. 2 Credits.**

An exploration of the central concepts of cell biology, cell physiology, molecular biology, genetics, and evolution. One 3-hr laboratory. The General Biology sequence (BIOL 111-BIOL 114) is required for those majoring in Biology or Pre-Med. This course is restricted only to students who wish to repeat BIOL 113 to fulfill the credit requirement under the previous course catalog. Offered alternating semesters. Co-requisite: BIOL 125.

**BIOL 207. Anatomy and Physiology I. 4 Credits.**

Structure and functions of the organs and systems of the human body with expanded coverage of topics such as mechanisms of disease. Topics include: biology of the cell, histology, and skeletal, muscular & nervous systems. Two 1-hr lectures and one 3-hr laboratory. Offered alternating semesters. Biology majors in the Education studies and Pre-Physical Therapy studies may take this course for Biology credit.

**BIOL 208. Anatomy and Physiology II. 4 Credits.**

Structure and functions of the organs and systems of the human body with expanded coverage of topics such as mechanisms of disease. Topics include: digestive, respiratory, cardiovascular, urinary, reproductive and endocrine systems. Three 1-hr lectures. Offered alternating semesters. Biology majors in the Education studies and Pre-Physical Therapy studies may take this course for Biology credit.

**BIOL 209. Anatomy And Physiology Lab I. 0 Credits.****BIOL 210. Anatomy & Physiology II Lab. 0 Credits.****BIOL 217. Genetics. 4 Credits.**

Principles of chromosomal, molecular, quantitative, population, and evolutionary genetics. Three 1-hr lectures, one problem period, and one two-hour laboratory period. Prerequisite: BIOL 111, BIOL 112 or BIOL 121, BIOL 122. Offered: Fall.

**BIOL 218. Genetics - Lab. 0 Credits.**

Principles of chromosomal, molecular, quantitative, population, and evolutionary genetics. One 3-hr laboratory period. Prerequisite: BIOL 111, BIOL 112 or BIOL 121, BIOL 122. Co-requisite: BIOL 217. Offered: Fall.

**BIOL 220. Ecology Lab. 0 Credits.****BIOL 221. Introductory Nutrition. 3 Credits.**

A survey of human nutritional needs throughout the life cycle. Recommended for Nursing, Physical Education, and Liberal Arts majors. Three lectures. Fall, Spring.

**BIOL 222. Biology for Engineers. 3 Credits.**

The general principles of modern science and biology, with focus on engineering solutions to biological problems, including pollution, bio-remediation, genetic engineering and risk assessment. Two one-hour lectures and one two-hour lab per week.

**BIOL 223. Ecology. 4 Credits.**

Introduction to the study of the distribution and abundance of organisms. Survey of ecological principles at the level of individuals, populations, communities, and ecosystems with emphasis on quantitative analysis. Three 1-hr lectures and one three-hour laboratory per week. Prerequisite: BIOL 111 and BIOL 112 or BIOL 121 and BIOL 122 or consent of the instructor. Co-requisite: BIOL 220. Fall.

**BIOL 224. BiologyForEngineers Laboratory. 0 Credits.**

The general principles of modern science and biology, with focus on engineering solutions to biological problems, including pollution, bioremediation, genetic engineering and risk assessment. One 2 hour lab per week. Co-Requisite: BIOL 222.

**BIOL 225. Microbiology. 4 Credits.**

Introduction to microbial physiology, genetics, and ecology with an emphasis on the role of microbes in the environment and infectious disease. Three lecture hours and one 3-hr laboratory period per week. Pre-requisite: BIOL 111, BIOL 112 or BIOL 121, BIOL 122 and BIOL 217 or consent of the instructor. Co-requisite: BIOL 226.

**BIOL 226. Microbiology Lab. 0 Credits.****BIOL 231. Evolution. 4 Credits.**

An introduction to the central organizing theme in biology. Examination of the basic mechanisms for evolution at a variety of scales, from the molecular to ecological levels. Potential topics include: microevolution, speciation, and macroevolution. Three 1-hr lectures and one three-hour laboratory period. Prerequisite: BIOL 111 and BIOL 112 or consent of the instructor. Co-requisite: BIOL 232. Spring.

**BIOL 232. Evolution Laboratory. 0 Credits.**

Dynamic aspects of the physiology and biochemistry of cells, including thermodynamics, oxidation/reduction, respiration, metabolic pathways, enzymes, membranes, cell signaling and cellular control mechanisms. One 3 hour lab per week. Prerequisites: BIOL 111, BIOL 114 and CHEM 319.

**BIOL 301. Comparative Chordate Anatomy. 4 Credits.**

An anatomical survey of chordate evolution, with an emphasis on human anatomy, where homologous structures are examined in diverse chordate organisms. Form, function, and phylogeny are explored from worm-like chordates and sharks to dinosaurs, birds, as well as humans and other mammals. Three lecture hours and one 3-hr laboratory period. Pre-requisite: BIOL 111, BIOL 112, or BIOL 121 or BIOL 122 or consent of the instructor. Co-requisite: BIOL 313.

**BIOL 302. Developmental Biology. 4 Credits.**

A study of the cellular and molecular processes underlying the development of various organisms. Emphasis will be placed on fertilization events, spatial organization, pattern formation and gene action in development. Three lecture hours and one 3-hr laboratory period. Pre-requisite: BIOL 111, BIOL 112, BIOL 113, BIOL 114, or consent of the instructor.

**BIOL 303. Plant Biology Laboratory. 0 Credits.**

Physiological, biochemical and anatomical aspects of plants will be studied in the context of their native environments. The molecular, hormonal and physiological basis for plant adaptations will be stressed. One 3 hour lab per week.

**BIOL 304. Invertebrate Zoology. 4 Credits.**

Morphological and physiological characteristics of selected invertebrates and consideration of their ecological relationships. Three lecture hours and one 3-hr laboratory period. Pre-requisite: BIOL 111, BIOL 112, BIOL 113, BIOL 114, and BIOL 223 or consent of the instructor.

**BIOL 305. Plant Biology. 4 Credits.**

Physiological, biochemical and anatomical aspects of plants will be studied in the context of their native environments. The molecular, hormonal and physiological basis for plant adaptations will be stressed. Three lecture hours and one 3-hr laboratory period. Pre-requisite: BIOL 111, BIOL 112, BIOL 113, BIOL 114, or consent of the instructor. Co-requisite: BIOL 303.

**BIOL 310. Research in Biology for Juniors. 2 Credits.**

Investigation of challenging problems. Four hours/credit per week including a conference with sponsor. Results may lead to an off-campus presentation. Sponsorship by a faculty member of the Biology Department must be obtained in advance. Pre-requisite: Junior Status, BIOL 111, BIOL 112, BIOL 113, BIOL 114.

**BIOL 311. Research in Biology for Juniors. 2 Credits.**

Investigation of challenging problems. Four hours/credit per week including a conference with sponsor. Results may lead to an off-campus presentation. Sponsorship by a faculty member of the Biology Department must be obtained in advance. Pre-requisite: Junior Status, BIOL 111, BIOL 112, BIOL 113, BIOL 114.

**BIOL 312. Advanced Biology for Biochemists. 3 Credits.**

In-depth analysis of molecules directing cellular structure. Emphasis will be placed on the molecular mechanisms of cellular function and interactions. Topics will include: organelle structure/function, intra- and intercellular signaling, and cell cycle control. Three lecture hours. Prerequisite BIOL 217 and CHEM 323.

**BIOL 313. Compar Chordate Anatomy-Lab. 0 Credits.****BIOL 314. Kinesiology for Dancers. 3 Credits.**

Elements of human motion within the areas of anatomy, neuromuscular physiology and biomechanics. Proper procedures in performance art with special reference to dance. Two lectures and one two-hour lab per week.



**BIOL 317. Research in Biology for Juniors. 3 Credits.**

Investigation of challenging problems. Four hours per credit per week including a conference with sponsor. Results may lead to an off-campus presentation. Sponsorship by a faculty member of the Biology Department must be obtained in advance. Offered: Fall and Spring.

**BIOL 318. Advances in Nutrition. 2 Credits.**

Recent developments in human nutrition with emphasis on clinical conditions. Recommended for upper-class pre-health professional students. One lecture hour and one 3-hr laboratory period. Pre-requisite: BIOL 111, BIOL 112, BIOL 113, BIOL 114, or consent of the instructor.

**BIOL 319. Cellular BioChemistry/Physiology. 4 Credits.**

Dynamic aspects of the physiology and biochemistry of the cell, including thermodynamics, oxidation/reduction, respiration, enzymes, membranes, cell signaling and metabolic pathways. Three lecture hours and one 3-hr laboratory period. Pre-requisite: BIOL 111, BIOL 112, or BIOL 121, BIOL 122 and BIOL 217 and CHEM 319, or consent of the instructor. Co-requisite: BIOL 323.

**BIOL 320. Animal Physiology. 4 Credits.**

Discovery of the major principles of animal (especially humans) functions. Topics include (1) procurement and use of energy, (2) growth, (3) internal organ functions, reproduction, and adaptations to diverse environments. Emphasis is placed on tissue, organ and organism functions. Various taxa will be examined in lab, especially humans. Three lecture hours and one 3-hr laboratory period. Pre-requisite: BIOL 111, BIOL 112, BIOL 113, BIOL 114, or consent of the instructor. Co-requisite: BIOL 324.

**BIOL 321. Molecular Cell Biology. 4 Credits.**

In-depth analysis of molecules directing cellular structure. Emphasis will be placed on the molecular mechanisms of cellular function and interactions. Topics will include: organelle structure/function, intra- and intercellular signaling, and cell cycle control. Three lecture hours and one 3-hr laboratory period. Pre-requisite: BIOL 217 or CHEM 433, or consent of instructor. Co-requisite: BIOL 322.

**BIOL 322. Molecular Cell Biology Lab. 0 Credits.**

In-depth analysis of molecules directing cellular structure. Emphasis will be placed on the molecular mechanisms of cellular functions and interactions. Topics will include: organelle structure/function, intra-and intercellular signaling, and cell cycle control. One three hour laboratory per week. Spring.

**BIOL 323. Cellular Biochemistry/Physiology Laboratory. 0 Credits.**

Dynamic aspects of the physiology and biochemistry of cells, including thermodynamics, oxidation/reduction, respiration, metabolic pathways, enzymes, membranes, cell signaling and cellular control mechanisms. One 3 hour lab per week.

**BIOL 324. Animal Physiology Laboratory. 0 Credits.**

Discovery of the major principles of animal (especially humans) functions. Topics include (1) procurement and use of energy. (2) growth, (3) internal organ functions, reproduction, and adaptations to diverse environments. Emphasis is placed on tissue, organ and organism functions. Various taxa will be examined in lab, especially humans. One 3 hour lab per week.

**BIOL 326. Animal Behavior. 4 Credits.**

The biological basis of animal behavior from an ecological and evolutionary perspective. Three lecture hours and one 3-hr laboratory or field work period.

**BIOL 327. Animal Behavior Lab. 0 Credits.**

One 3-hr laboratory or field work period companion to the BIOL 326 lecture. (The biological basis of animal behavior from an ecological and evolutionary perspective).

**BIOL 335. Developmental Biology Lab. 0 Credits.**

The laboratory will focus on the fundamental techniques used by developmental biologists. One three-hour laboratory per week. Corequisite BIOL 302.

**BIOL 360. Independent Study in Biology for Juniors. 2 Credits.**

Independent study of an area in biology. Up to ten hours per week, including a conference with sponsor, plus a final paper are required. Sponsorship by a faculty member of the Biology Department must be obtained in advance. Pre-requisite: Junior Status, BIOL 111, BIOL 112, BIOL 113, BIOL 114, or consent of the instructor.

**BIOL 375. Internship for Juniors. 2 Credits.**

Students participate in an off-campus training experience closely related to one of the areas of biology. Frequent meetings with the advisor plus a paper are required. Sponsorship by a faculty member of the Biology Department must be obtained in advance. Pre-requisite: Junior Status, 3.0 GPA, and permission of the student's advisor and the chair.

**BIOL 400. Research in Biology. 1 Credit.**

Investigation of challenging problems. Four hours/credit per week including a conference with sponsor. Results may lead to an off-campus presentation. Sponsorship by a faculty member of the Biology Department must be obtained in advance. Offered: Fall and Spring.

**BIOL 401. Histology. 4 Credits.**

Cellular structure and ultrastructure of mammalian tissues and organs utilizing light and electron microscopy. Three lecture hours and one 3-hr laboratory period. Pre-requisite: BIOL 111, BIOL 112, BIOL 113, BIOL 114, or consent of the instructor.

**BIOL 404. Biology Colloquium I. 1 Credit.**

This course is the first half of the Biology majors capstone in which students will eventually present a full-length document on a biological subject, that will either be a review paper or a research paper. Training in reading and comprehension of scientific papers, understanding statistical analysis issues, constructing a reference section, writing for science and power-point constructoin issues. Four weeks of journal club sessions. Proposal preparation for a monograph. One discussion period. Offered: Fall.

**BIOL 405. Neurobiology. 4 Credits.**

An examination of the basic principles of the nervous system including the cellular and molecular biology of the neuron, synaptic transmission, sensory and motor systems and their integration. Three lecture hours and one 3-hr laboratory period. Pre-requisite: BIOL 217 or consent of the instructor.

**BIOL 406. Special Topics: in Biology. 4 Credits.**

Current problems and studies in biology. Consult department chair for topic. Four lecture hours OR three lecture hours and one 3-hr laboratory period. Pre-requisite: BIOL 111, BIOL 112, BIOL 113, BIOL 114, or consent of the instructor.

**BIOL 407. Neurobiology - Lab. 0 Credits.****BIOL 408. Sustainable Agriculture. 3 Credits.**

This course focuses on crop management, conservation agriculture, depletion of resources, and global challenges caused by climate change. Prerequisites are CHEM 101, BIOL 111,112,113,114. Offered in Fall semester.

**BIOL 409. Marine Biology. 4 Credits.**

Principles of marine ecology in an oceanic environment with emphasis on tropical communities. Three lecture hours per week are held on campus, but the field portion of the course is taught during the mid-semester recess in the Caribbean. Students in this course will be charged an additional lab fee to cover the transportation, room & board, and activities costs associated with the field trip. Pre-requisite: BIOL 111, BIOL 112, BIOL 113, BIOL 114, and BIOL 223 or consent of the instructor.

**BIOL 410. Research in Biology for Seniors. 2 Credits.**

Investigation of challenging problems. Four hours/credit per week including a conference with sponsor. Results should ordinarily lead to an off-campus presentation. Sponsorship by a faculty member of the Biology Department must be obtained in advance. Offered: Fall.

**BIOL 411. Research in Biology for Seniors. 2 Credits.**

Investigation of challenging problems. Four hours/credit per week including a conference with sponsor. Results should ordinarily lead to an off-campus presentation. Sponsorship by a faculty member of the Biology Department must be obtained in advance. Offered: Spring.

**BIOL 413. Research in Biology for Seniors. 3 Credits.**

Investigation of challenging problems. Five hours/credit per week including a conference with sponsor. Results should ordinarily lead to an off-campus presentation. Sponsorship by a faculty member of the Biology Department must be obtained in advance. Offered: Fall and Spring.

**BIOL 414. Biology Colloquium II. 1 Credit.**

This course is the second part of the Biology majors capstone course. Study and discussion of biological topics, exposure to various presentation styles by external speakers, sitting in for the Biology major field test, completion and presentation of a monograph. One discussion period. Offered: Spring.

**BIOL 416. Tissue Culture. 4 Credits.**

Principles and methods of animal tissue and cell culture with the emphasis on mammalian culture of cell lines and primary culture from rat tissues. The course stresses laboratory techniques including maintenance of sterility and culture conditions, use of laminar flow hood, phase contrast microscopy and photomicroscopy, preparation and contents of a variety of media, cryogenic storage of cells, indirect immunofluorescence, monoclonal antibodies, and biochemical characterization of cell specific markers. Three lecture hours and one 3-hr laboratory period. Pre-requisite: BIOL 111, BIOL 112, BIOL 113, BIOL 114, or consent of the instructor.

**BIOL 426. Immunology. 4 Credits.**

Study of fundamental properties of antigens and antibodies. Theories of antibody production, tolerance, transplantation immunity, autoimmunity, tumor immunology, and immunochemistry. Introduction to antibody-mediated and cell-mediated reactions. Four lecture hours. Pre-requisite: BIOL 111, BIOL 112, BIOL 113, BIOL 114, BIOL 217, BIOL 321, and BIOL 322.

**BIOL 431. Freshwater Ecology. 4 Credits.**

Study of the ecology of freshwater communities, including physical, chemical, and biotic components with emphasis on a comparison of major freshwater systems. Three lecture hours and one 3-hr field or laboratory period. Pre-requisite: BIOL 111, BIOL 112, BIOL 113, BIOL 114, and BIOL 223 or consent of the instructor.

**BIOL 432. Estuarine and Coastal Ecology. 4 Credits.**

Studies of estuarine and near-shore marine ecosystems with emphasis on local temperate habitats. Three lecture hours and one 3-hr field or laboratory period. Pre-requisite: BIOL 111, BIOL 112, BIOL 113, BIOL 114, and BIOL 223 or consent of the instructor.

**BIOL 441. Cardiovascular Biology. 3 Credits.**

Anatomical, physiological, pathological and nutritional aspects of the human cardiovascular system. Three lectures and a monograph based on library research or supervised laboratory experience at a hospital cardiac stress testing laboratory.

**BIOL 460. Independent Study in Biology. 1-3 Credit.**

Independent Study in Biology. Independent study of an area in biology. Ten hours per week including a conference with sponsor. Sponsorship by a faculty member of the Biology Department must be obtained in advance. Fall, Spring.

**BIOL 475. Internship for Seniors. 3 Credits.**

Students participate in an off-campus training experience closely related to their area of biology. Frequent meetings with the advisor plus a paper are required. Sponsorship by a faculty member of the Biology Department must be obtained in advance. Prerequisites: Senior status, 3.0 GPA, and permission of the student's advisor or the Chair.

# Mathematics

Dr. Helene R. Tyler  
Chair of the Department

Dr. Matthew Jura  
Assistant Chair of the Department

The Department of Mathematics plays a vital role in the education of all students at Manhattan College through its offerings of programs for our majors as well as through the many support courses it offers for other departments across the college. We provide students the mathematical skills necessary to be successful in their field of study whether it is mathematics, science, engineering, business, education or the liberal arts.

The mathematics curriculum for our majors allows students to prepare for careers in business, industry, and teaching, as well as to prepare for the study of mathematics at the graduate level. Coursework in linear algebra, abstract algebra, analysis, probability, and statistics prepare students for further work in pure or applied mathematics. Elective courses, such as Operations Research, Machine Learning, and Mathematical Modeling, provide students the tools to analyze data in various areas of science, finance, and engineering.

Our classes are small, giving students the opportunity to build strong relationships with faculty. Students are invited to participate in national mathematics competitions such as the Putnam Exam. Many students participate in undergraduate research projects, both internal and external; funds are available to support these projects during the summer.

Students are encouraged to present their work at national and regional meetings, including the Spuyten Duyvil Undergraduate Mathematics Conference, which was founded by the Mathematics Department at Manhattan College.

Any student wishing to participate in the Study Abroad program will find the Department makes every effort to provide the needed support to allow them to finish their required course work.

Students in the Department of Mathematics are eligible to participate in the School of Science Honors Program. See the School of Science catalog entry for more information on this program.

The Department supports a chapter of the national mathematics honor society, Pi Mu Epsilon, which is dedicated to the promotion of mathematics and recognition of students who successfully pursue mathematical understanding. Students are nominated for membership in this honor society. The Department also nominates students who make presentations at conferences for membership in Sigma Xi, an international honor society for science and engineering.

## Degree Plans

The Department of Mathematics offers the following programs:

- Major in Mathematics
  - Bachelor of Science Degree
  - Bachelor of Arts Degree
- Second Major in Mathematics

- Concentration in Applied Mathematics
- Minor in Mathematics

The Department also offers graduate programs in Mathematics. We have a seamless 5-year Bachelor-Masters program. A student in this 5-year BA/BS-MS program graduates with a BA/BS in Mathematics and an MS in Applied Mathematics-Data Analytics. In addition, the Department offers a MS in Mathematics. See the Graduate Catalog for more details.

The Department works closely with the School of Education & Health on the requirements for the BS in Adolescence Education Mathematics, which prepares students to teach at the secondary level, and the Mathematics emphasis in the BS in Childhood Education, which prepares students to teach at the elementary level. The requirements for the BS in Adolescence Education Mathematics are listed below under Second Major in Mathematics.

### General Requirements

Courses should be taken in accordance with the Plans of Study listed below. These plans incorporate the School of Science Core Curriculum. Care should be taken in planning your program since some courses are not offered every semester. A minimum grade of C is required in each of the courses used for any of the listed programs (major, second major, concentration, or minor).

With the approval of the Department Chair, well-prepared undergraduate students can take graduate mathematics courses to count toward their mathematics electives.

## Major in Mathematics

### BS in Mathematics (126 credit hours)

MATH 158	Introduction to Mathematical Computation	3
MATH 185	Calculus I *	3
MATH 186	Calculus II *	3
MATH 243	Foundations for Higher Mathematics	3
MATH 272	Linear Algebra I	3
MATH 285	Calculus III *	3
MATH 331	Probability	3
MATH 336	Applied Statistics	3
MATH 377	Algebra I	3
MATH 387	Analysis I	3
MATH 471	Linear Algebra II	3
MATH 478	Algebra II	3
MATH 489	Problem Seminar	3
MATH 490	Complex Analysis	3
MATH Electives **		6
CMPT 101	Computer Science I	3
PHYS 101 & PHYS 191	Physics I and Physics I Lab	4

PHYS 102 & PHYS 192 Natural Sciences	Physics II and Physics II Lab	4  8
Total Credits		67

- \*      *Students who major in Mathematics and are selected for the honors sequence will be enrolled in the honors sections of Calculus I, II, and III (MATH 187, 188, and 287).*
- \*\*     *MATH Electives can be taken from the following list of Mathematics courses: 286, 361, 386, 432, 433, 448, 455, 457, 464, 488, and select topics courses by permission of the Chair. Graduate mathematics courses can also be used as electives with approval of the Chair.*

**BA in Mathematics      (122 credit hours)**

MATH 158	Introduction to Mathematical Computation	3
MATH 185	Calculus I *	3
MATH 186	Calculus II *	3
MATH 243	Foundations for Higher Mathematics	3
MATH 272	Linear Algebra I	3
MATH 285	Calculus III *	3
MATH 331	Probability	3
MATH 336	Applied Statistics	3
MATH 377	Algebra I	3
MATH 387	Analysis I	3
MATH 471	Linear Algebra II	3
MATH 478	Algebra II	3
MATH 489	Problem Seminar	3
MATH 490	Complex Analysis	3
MATH Electives **		6
CMPT 101	Computer Science I	3
3 SCI Courses ***		9
Total Credits		60

- \*      *Students who major in Mathematics and are selected for the honors sequence will be enrolled in the honors sections of Calculus I, II, and III (MATH 187, 188, and 287).*
- \*\*     *MATH Electives can be taken from the following list of Mathematics courses: 286, 361, 386, 432, 433, 448, 455, 457, 464, 488, and select topics courses by permission of the Chair. Graduate mathematics courses can also be used as electives with approval of the Chair.*
- \*\*\*    *Students may opt for one full year of a lab science (8 credits). In this case, the student will graduate with 120 credits. Students may also opt to replace the 3 SCI XXX courses with 9 credits of courses within a single discipline in the School of Science.*

## Second Major in Mathematics

### Students from the Schools of Liberal Arts, Business, Engineering, and Science

To complete a second major in Mathematics, students from the above Schools will need to take a total of 36 credits of mathematics courses from the Mathematics major courses listed above (excluding MATH 158). These credits must include MATH 185 (or 187), 186 (or 188), 243, 272, 285 (or 287), 336, 377, and 387, and at least 2 courses at the 400 level.

### Students from the School of Education & Health

Students pursuing a degree in Adolescence Education Mathematics earn a Second Major in Mathematics by completing the following sequence as required by their degree program.

#### BS in Adolescence Education Mathematics

MATH 158	Introduction to Mathematical Computation	3
MATH 185	Calculus I	3
MATH 186	Calculus II	3
MATH 243	Foundations for Higher Mathematics	3
MATH 272	Linear Algebra I	3
MATH 285	Calculus III	3
MATH 328	Fundamental Concepts of Secondary Mathematics	3
MATH 331	Probability	3
MATH 336	Applied Statistics	3
MATH 361	Introduction to Higher Geometry	3
MATH 377	Algebra I	3
MATH 387	Analysis I	3
MATH 489	Problem Seminar	3
CMPT 101	Computer Science I	3
Total Credits		42

\* Sequencing of courses is very important in order to accommodate the requirements of student teaching.

**Application:** To pursue a Second Major in Mathematics, a student must get the appropriate form from the department, fill it out, and have it approved by the Department of Mathematics. An approved form will be forwarded to the appropriate dean.

A grade of at least C is required for all courses meeting the requirements for a Second Major in Mathematics.

## Concentration in Applied Mathematics

The Concentration in Applied Mathematics is designed to complement major study in a different discipline, and prepare students to use mathematics in the workplace. The concentration requires 24 credits and offers more depth than the minor in Mathematics.



A grade of at least C is required for all courses meeting the requirements for a Concentration in Applied Mathematics.

The requirements are flexible. There is a required core of 12 credits which includes Calculus I-II-III (MATH 185/187, 186/188, 285/287) and Linear Algebra I (MATH 272). Students choose the remaining 12 credits from a list of approved courses, including Differential Equations (MATH 286), Probability (MATH 331), Applied Statistics (MATH 336), Partial Differential Equations (MATH 386), Machine Learning (MATH 457), Operations Research (MATH 455), Linear Algebra II (MATH 471), and Topics in Mathematics. Graduate mathematics courses can also be used with approval of the Chair.

Students must select at least one two-term sequence for depth. The two-term sequences are: 272 and 471; (285 or 287) and 490; 286 and 386; 331 and 336.

Completion of the Concentration will be documented on the student's transcript.

**Application:** To pursue the Concentration in Applied Mathematics, a student must get the appropriate form from the department, fill it out, and have it approved by the Department of Mathematics. An approved form will be forwarded to the appropriate dean.

## Minor in Mathematics

The minor in Mathematics consists of a minimum of 15 credits and must include a yearlong calculus sequence. Specific requirements are listed below. A grade of at least C is required for all courses meeting the requirements for a minor in Mathematics.

**Note:** The following courses may not be used toward the Mathematics minor: MATH 100, 111, 151, 153, 154, 158, 221, 222, 230, 320, 321, 322, 326, 328, and 422.

**Application:** To pursue the minor in Mathematics, a student must get a Minor Form from the department, fill it out, and have it approved by the Department of Mathematics. An approved form will be forwarded to the appropriate dean.

### Minor Requirements

The minor in Mathematics consists of a minimum of 15 credits including Calculus I (MATH 155/185/187) and Calculus II (MATH 156/186/188). The remaining courses should be chosen from mathematics courses that are not on the above list of courses which may not be used toward the Mathematics minor, with the approval of the Chair of the Department of Mathematics.

## BS in Childhood Education - Mathematics Plans

All students majoring in Childhood Education take the following 6 credit core sequence.

MATH 221	Mathematics for the Elementary School Teachers I	3
MATH 222	Mathematics for the Elementary School Teachers II	3

In addition, students majoring in Childhood Education may choose to do either a Concentration in Mathematics or an Emphasis in Mathematics as detailed below.

### BS in Childhood Education – Mathematics Concentration

Childhood Education majors may choose to concentrate in Mathematics. These students take 30 credits in Mathematics including Calculus I (MATH 155/185/187), Calculus II

(MATH 156/186/188), MATH 243, 321, 322, 326, One of 230 or 336, Three from the following: 272, 285, 286, 331, 361. Please see the Department of Mathematics for the appropriate sequencing of these courses.

### **BS in Childhood Education – General Studies Concentration with Mathematics Emphasis**

Childhood Education majors may choose a General Studies Concentration with Mathematics as one area of emphasis. These students take 15 credits in Mathematics including MATH 321, 322, 326, 230, One of: 100, 151, 155, 185. Please see the Department of Mathematics for the appropriate sequencing of these courses.

## **PLANS OF STUDY**

### **Bachelor of Science in Mathematics**

#### **First Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
MATH 185		3 MATH 158**	3
CMPT 101		3 MATH 186	3
MFL*		3 MFL*	3
ENGL 110		3 RELS 110	3
LLRN 102		3 Social Science	3
SCI 100		1 SCI 101	1
	16		16

#### **Second Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
MATH 243		3 MATH 272	3
MATH 285		3 MATH 336	3
PHYS 101 & PHYS 191		4 PHYS 102 & PHYS 192	4
PHIL 150		3 ENGL 150	3
Social Science		3 Free Elective	3
	16		16

#### **Third Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
MATH 331		3 MATH 387	3
MATH 377		3 MATH 478	3
MATH 471		3 RELS 2XX Catholic Studies	3
Natural Science***		4 Natural Science***	4
HIST 150		3 MUSC 150 or ART 150	3
	16		16

#### **Fourth Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
MATH 490		3 MATH 489	3

MATH Elective	3 MATH Elective	3
Free Electives	9 Free Electives	6
	RELS 3XX Global/Contemporary	3
		15
		15

Total Credits: 126

\*      *One year sequence of a Modern Foreign Language.*

\*\*      *Students wishing to minor in Computer Science should take CMPT 102 Computer Science II instead of MATH 158 Introduction to Mathematical Computation.*

\*\*\*      *One year (8 credits with lab) of the same natural science is required.*

## Bachelor of Arts in Mathematics

### First Year

Fall	Credits	Spring	Credits
MATH 185		3 MATH 158 **	3
CMPT 101		3 MATH 186	3
MFL *		3 MFL *	3
ENGL 110		3 RELS 110	3
LLRN 102		3 Social Science	3
SCI 100		1 SCI 101	1
		16	16

### Second Year

Fall	Credits	Spring	Credits
MATH 243		3 MATH 272	3
MATH 285		3 MATH 336	3
SCI XXX ***		3 SCI XXX ***	3
PHIL 150		3 SCI XXX ***	3
Social Science		3 ENGL 150	3
		15	15

### Third Year

Fall	Credits	Spring	Credits
MATH 331		3 MATH 387	3
MATH 377		3 MATH 478	3
MATH 471		3 RELS 2XX Catholic Studies	3
HIST 150		3 MUSC 150 or ART 150	3
Free Elective		3 Free Elective	3
		15	15

### Fourth Year

Fall	Credits	Spring	Credits
MATH 490		3 MATH 489	3
MATH Elective		3 MATH Elective	3

Free Electives	9 RELS 3XX Global/Contemporary	3
	Free Electives	6
	15	15

Total Credits: 122

\* One year sequence of a Modern Foreign Language.

\*\* Students wishing to minor in Computer Science should take CMPT 102 Computer Science II instead of MATH 158 Introduction to Mathematical Computation.

\*\*\* Students may opt for one full year of a lab science (8 credits). In this case, the student will graduate with 120 credits. Students may also opt to replace SCI XXX with 9 credits of courses from within a single discipline in the School of Science.

## Bachelor of Science Adolescence Education Mathematics

### Sequencing of Mathematics Courses

See the Department of Education for sequencing of Education Courses.

#### First Year

Fall	Credits	Spring	Credits
MATH 185		3 MATH 158 *	3
CMPT 101		3 MATH 186	3
	6		6

#### Second Year

Fall	Credits	Spring	Credits
MATH 243		3 MATH 272	3
MATH 285		3 MATH 328	3
	6		6

#### Third Year

Fall	Credits	Spring	Credits
MATH 331		3 MATH 387	3
MATH 377		3 MATH 361	3
	6		6

#### Fourth Year

		Spring	Credits
		MATH 336	3
		MATH 489	3
	6		

Total Credits: 42

\* Students wishing to minor in Computer Science should take CMPT 102 Computer Science II instead of MATH 158 Introduction to Mathematical Computation.

## Courses

### **MATH 096. Bridge Course for Business. 0 Credits.**

A review of the fundamentals of algebra, functions and their graphs, logarithmic and exponential functions, Excel spreadsheets. Intended for incoming business students with marginal non-passing TRAM scores. The student must obtain a passing grade to be placed into MATH 153.

### **MATH 099. Bridge Course For Science/Engi. 0 Credits.**

Algebra basics, lines and distance, functions and their graphs, polynomial and rational functions, exponential and logarithmic functions, trigonometry. Intended for incoming students in science and engineering with marginal non-passing TRAM scores. The student must obtain a passing grade to be placed into MATH 185 Calculus I.

### **MATH 100. Pre-Calculus Mathematics. 3 Credits.**

Basic set theory, functions, and their graphs. Topics from algebra, theory of equations, trigonometry and analytic geometry. Intended to prepare students for a course in calculus. Meets four hours per week.

### **MATH 111. Pre-Calculus for Business Students. 3 Credits.**

Review of elementary algebra, introduction to analytic geometry, functions and their graphs, logarithmic and exponential functions, polynomial functions. Meets four hours per week.

### **MATH 151. Topics in Modern Mathematics. 3 Credits.**

An introduction to practical mathematical topics of particular interest to students in the humanities or social sciences. Possibilities include but are not limited to the mathematics of social choice, consumer mathematics, mathematical modeling and statistics. Additional topics may be introduced as time permits.

### **MATH 153. Linear Mathematical Analysis. 3 Credits.**

Survey of business applications. Topics include financial mathematics: simple and compound interest, annuities and amortization of loans; linear optimization: solving systems of linear equations and matrix algebra; probability: elementary counting techniques, odds, and expected value. Prerequisite: A satisfactory score on the mathematics placement exam or a grade of C or better in MATH 111.

### **MATH 154. Calculus for Business Decisions. 3 Credits.**

A one-semester course in the calculus of functions of one variable, intended for students in Business. Polynomial, rational, exponential and logarithmic functions. Limits, derivatives, techniques and applications of differentiation. Indefinite and definite integrals, applications of the integral. Prerequisite: A passing grade in MATH 153.

### **MATH 155. Calculus for the Life Sciences I. 3 Credits.**

Limits, continuity, exponential/logarithmic functions differentiation/antidifferentiation. An introduction to the definite integral. Meets four hours per week. Prerequisite: A satisfactory score on the mathematics placement exam or a grade of C or better in MATH 100.

### **MATH 156. Calculus for the Life Sciences II. 3 Credits.**

Applications chosen from the life sciences, including population, decay, growth models, stability, and matrix methods. Volumes of solids, integration techniques, difference/differential equations. Meets four hours per week. Prerequisite: A grade of C or better in MATH 155.

**MATH 158. Introduction to Mathematical Computation. 3 Credits.**

Introduction to mathematical problem-solving employing modern software used for mathematical modeling in industry and research. Numerical and symbolic computation including problems from calculus. A variety of problems arising in mathematics, science, and engineering. Spring. Prerequisite: A grade of C or better in CMPT 101 and Calculus I (MATH 155 or MATH 185 or MATH 187).

**MATH 185. Calculus I. 3 Credits.**

Limits, transcendental functions, continuity, derivatives and their applications, an introduction to the definite integral, and the Fundamental Theorem of Calculus. Meets four hours per week. Prerequisite: A satisfactory score on the mathematics placement exam or a grade of C or better in MATH 100.

**MATH 186. Calculus II. 3 Credits.**

Applications of the definite integral, integration techniques, improper integrals, and infinite sequences and series. Meets four hours per week. Prerequisite: A grade of C or better in Calculus I (MATH 155 or MATH 185 or MATH 187).

**MATH 187. Honors Calculus I. 3 Credits.**

Honors equivalent to Calculus I. Rigorous development of limits, transcendental functions, continuity, derivatives and their applications, an introduction to the definite integral, and the Fundamental Theorem of Calculus. Meets four hours per week. Fall. Prerequisite: Students will be selected by the instructor.

**MATH 188. Honors Calculus II. 3 Credits.**

Honors equivalent to Calculus II. Rigorous development of applications of the definite integral, integration techniques, improper integrals, and infinite sequences and series. Meets four hours per week. Spring. Prerequisite: A grade of C or better in MATH 187 or permission of the instructor.

**MATH 221. Mathematics for the Elementary School Teachers I. 3 Credits.**

This is a course for prospective teachers in elementary school. The content and method will follow the current standards of the National Council of Teachers of Mathematics for the elementary level. Topics include tools for problem solving, numeration systems, number theory, and algebra. Fall.

**MATH 222. Mathematics for the Elementary School Teachers II. 3 Credits.**

This is a course for prospective teachers in elementary school. The content and method will follow the current standards of the National Council of Teachers of Mathematics for the elementary level. Topics include tools for problem solving, geometry, measurement, and statistics. Spring. Prerequisite: A grade of C or better in MATH 221.

**MATH 230. Elementary Statistics. 3 Credits.**

An introduction to statistical methods: descriptive statistics, association between two variables, basic probability, discrete random variables, binomial and normal random variables, sampling distribution, confidence intervals, tests of significance.

**MATH 243. Foundations for Higher Mathematics. 3 Credits.**

A bridge between introductory and advanced mathematics. The context of set theory and logic will be used to develop the skills of constructing and interpreting mathematical proofs. Topics include principles of logical argument, modular arithmetic, induction, sets, relations, functions, equivalence relations. Fall. Prerequisites: A grade of C or better in Calculus II (MATH 156 or MATH 186 or MATH 188) or current enrollment in Calculus II (MATH 156 or MATH 186 or MATH 188).

**MATH 272. Linear Algebra I. 3 Credits.**

Linear equations and matrices, vector spaces, subspaces, linear independence, bases, dimension, inner product spaces, linear transformations, eigenvalues and eigenvectors, orthogonal matrices and diagonalization. Not open to students with credit for MATH 351. Prerequisite: A grade of C or better in MATH 243 or MATH 285 or MATH 287.

**MATH 285. Calculus III. 3 Credits.**

Algebraic and geometric aspects of vectors, functions of several variables, partial derivatives, multiple integrals, vector calculus, line integrals, Green's Theorem. Prerequisite: A grade of C or better in Calculus II (MATH 156, MATH 186, or MATH 188).

**MATH 286. Differential Equations. 3 Credits.**

This course focuses on techniques of solving first-order, second-order, and systems of first-order linear differential equations. Methods include separation of variables, variation of parameters, and the Laplace transform. Prerequisite: A grade of C or better in Calculus III (MATH 285 or MATH 287).

**MATH 287. Honors Calculus III. 3 Credits.**

Honors equivalent to Calculus III. Algebraic and geometric aspects of vectors, functions of several variables, partial derivatives, multiple integrals, vector calculus, line integrals, Green's Theorem. Intended for students who have completed the honors section of Calculus II (MATH 188). Fall. Prerequisite: A grade of C or better in MATH 188 or permission of instructor.

**MATH 320. Fundamental Concepts: Probability & Data Analysis. 3 Credits.**

A course for prospective teachers of K-8 mathematics. The course will explore data analysis as a four-step investigative process involving question development, data production, data analysis and contextual conclusions. Topics may include describing and comparing data distributions for both categorical and numerical data, exploring bivariate relationships, exploring elementary probability, and using random sampling as a basis for informal inference. Course includes use of appropriate software. Prerequisite: A grade of C or better in MATH 222.

**MATH 321. Fundamental Concepts: Algebra & Number Theory. 3 Credits.**

A course for prospective teachers of K-8 mathematics. Topics chosen from expressions and equations, ratio, proportional relationships and inversely proportional relationships, arithmetic and geometric sequences, factors and multiples (including greatest common factor and least common multiple), prime numbers and the Fundamental Theorem of Arithmetic, divisibility tests, rational versus irrational numbers, the division algorithm, modular arithmetic, functions (linear, quadratic, and exponential). Prerequisite: A grade of C or better in MATH 222.

**MATH 322. Fundamental Concepts: Geometry & Measurement. 3 Credits.**

A course for prospective teachers of K-8 mathematics. Perimeter, area, surface area, volume, and angle; geometric shapes, geometric solids, transformations, dilations, symmetry, congruence, similarity; modeling with similar triangles, and the Pythagorean Theorem and its converse. The use of appropriate software is an important component of the course. Prerequisite: A grade of C or better in MATH 222.

**MATH 326. Fundamental Concepts: Discrete Math. 3 Credits.**

A course for prospective teachers of K-8 mathematics. Topics chosen from logic, Boolean algebra, introductory graph theory, counting techniques and mathematical induction. Coding will be introduced as a way of including technology as well as algorithmic, iterative and recursive thinking into the course. Prerequisite: A grade of C or better in MATH 222.

**MATH 328. Fundamental Concepts of Secondary Mathematics. 3 Credits.**

A course for prospective teachers of secondary school mathematics. There will be a strong emphasis on the high school Common Core Standards and Mathematical Practices. Central ideas from the following topics will be explored and connected from both intuitive and rigorous points of view. Topics include the real and complex numbers, transcendental functions, exponentiation, hyperbolas, ellipses, logarithmic functions, polynomials, statistics, probability, and trigonometry. Appropriate technological tools will be used. Prerequisites: A grade of C or better in Math 243.

**MATH 331. Probability. 3 Credits.**

Basic theorems in probability, random variables, distribution functions, expected values; binomial, Poisson and normal distributions. Fall. Prerequisite: A grade of C or better in Calculus II (MATH 156 or MATH 186 or MATH 188).

**MATH 336. Applied Statistics. 3 Credits.**

A calculus based survey of probability and statistics with applications in social and natural sciences and engineering. Topics include probability, discrete and continuous random variables, point and interval estimation, hypothesis testing, linear models (encompassing regression and ANOVA). Not open to students with credit for MATH 351. Spring. Prerequisite: A grade of C or better in Calculus II (MATH 156 or MATH 186 or MATH 188).

**MATH 351. Computational Linear Algebra & Statistics for Computer Science. 3 Credits.**

This course consists of three components: linear algebra including linear equations and matrices, vector spaces, subspaces, linear independence, bases, dimension, linear transformations, eigenvalues/eigenvectors, and diagonalization; Operations research including linear programming and the simplex method; Statistical inference including point and interval estimation, bias, hypothesis testing, linear models (encompassing regression and ANOVA). Enrollment restricted to Computer Science students or by approval of Department Chair. Not open to students with credit in (MATH 272 or MATH 336). A grade of C or better in Calculus II (MATH 156 or MATH 186 or MATH 188).



**MATH 361. Introduction to Higher Geometry. 3 Credits.**

A survey of axiomatic and modern geometry intended for future middle and high school teachers. Topics covered will include incidence axioms, congruence theorems for triangles, the circle theorems, implications of the fifth postulate, congruence theorems for quadrilaterals, parallelism, similarity, transformational geometry, matrix transformations, and an introduction to spherical and hyperbolic geometry. The course will incorporate the use of appropriate software as a tool for verification of conjectures. Spring. Prerequisite: A grade of C or better in MATH 243 and Co-requisites: MATH 272 or MATH 351.

**MATH 375. Internship for Juniors. 3 Credits.**

Students participate in an off-campus training experience closely related to their area of mathematics. Frequent meetings with the advisor plus a paper are required. Prerequisites: Junior status, 3.0 GPA and permission of the student's advisor or Department chair.

**MATH 377. Algebra I. 3 Credits.**

The first part of a two-semester sequence. An introduction to algebraic structures with an emphasis on groups, covering normal subgroups, cosets. Lagrange's theorem and the fundamental homomorphism theorems. Fall. Prerequisites: A grade of C or better in MATH 243 and (MATH 272 or MATH 351).

**MATH 385. Vector Calculus. 3 Credits.**

Review of vector algebra. Vector-valued functions. Divergence and curl. Multiple integrals; different coordinate systems. Line integrals, Greens Theorem, independence of path, conservative force fields. Surface integrals, Divergence Theorem, Stokes Theorem, Applications. Offered irregularly. Prerequisites: A grade of C or better in Calculus III (MATH 285 or MATH 287).

**MATH 386. Partial Differential Equations. 3 Credits.**

Classification of partial differential equations. Characteristics. Derivation of the classical linear second order equations. Fourier series. Separation of variables. Initial and boundary value problems. Cauchy, Dirichlet, and Neumann problems. Prerequisite: A grade of C or better in MATH 286.

**MATH 387. Analysis I. 3 Credits.**

A rigorous treatment of differential calculus of one variable: sequences, limits, continuity, the derivative, the Riemann integral. Spring. Prerequisites: A grade of C or better in MATH 243 and Calculus III (MATH 285 or MATH 287).

**MATH 422. Seminar for Mathematics Education. 3 Credits.**

This course is intended for prospective secondary mathematics teachers. Topics in high school mathematics are examined from an advanced perspective. Topics include the real and complex numbers, functions, equations, and trigonometry. Spring. Prerequisites: A grade of C or better in MATH 243 and (MATH 272 or MATH 351).

**MATH 432. Statistical Inference. 3 Credits.**

Sampling distributions, point estimation, interval estimation, testing statistical hypotheses, regression and correlation. Offered irregularly. Prerequisite: A grade of C or better in MATH 331.

**MATH 433. Advanced Statistics. 3 Credits.**

Analysis of variance, regression analysis, non-parametric and sequential tests of hypotheses. Offered irregularly. Prerequisite: A grade of C or better in MATH 432.

**MATH 448. Combinatorics & Graph Theory. 3 Credits.**

Fundamental concepts in combinatorics including binomial coefficients, inclusion-exclusion, and generating functions. Topics in graph theory include connectivity, planarity, colorings and chromatic polynomials, and max-flow-min-cut in networks, and other applications. Not open to students with credit for CMPT 335. Prerequisite: A grade of C or better in MATH 243.

**MATH 455. Operations Research. 3 Credits.**

Optimization, linear programming, simplex method, duality theory. Transportation problems, scheduling problems, queuing theory. Prerequisite: A grade of C or better in MATH 272 or MATH 351 or permission of instructor.

**MATH 457. Machine Learning. 3 Credits.**

An introduction to the field of machine learning and its real-world applications. Topics include supervised & unsupervised learning, Bayesian decision theory, nonparametric methods, linear discriminant functions, multilayer neural networks, stochastic methods and cluster analysis. Prerequisite: A grade of C or better in MATH 272 or MATH 351 or permission of instructor.

**MATH 464. Topology. 3 Credits.**

Beginning with a review of set theory and basic topological definitions, topological spaces are studied with metric spaces considered as examples. Compactness, connectedness, metrization theorems. An introduction to homotopy theory. Prerequisite: A grade of C or better in MATH 243 or permission of instructor.

**MATH 471. Linear Algebra II. 3 Credits.**

A continuation of the topics introduced in MATH 272 with emphasis on orthogonality, inner product spaces, eigenvalues and eigenvectors, diagonalization, quadratic forms and numerical linear algebra. Fall. Prerequisite: A grade of C or better in MATH 272.

**MATH 475. Internship for Seniors. 3 Credits.**

Students participate in an off-campus training experience closely related to their area of mathematics. Frequent meetings with the advisor plus a paper are required. Prerequisites: Senior status, 3.0 GPA, and permission of the student's advisor or the Department Chair.

**MATH 478. Algebra II. 3 Credits.**

A continuation of MATH 377. Further study of algebraic structures, such as rings, fields and integral domains. The homomorphism theorems and applications. Spring. Prerequisite: A grade of C or better in MATH 377.

**MATH 488. Analysis II. 3 Credits.**

A continuation of Math 387. Topology of the real numbers, uniform convergence, Riemann integral, infinite series, Taylor and Fourier series, metric spaces. Prerequisite: A grade of C or better in MATH 387.

**MATH 489. Problem Seminar. 3 Credits.**

A capstone course for senior mathematics majors. Problems will be chosen to integrate the themes of the major. Oral presentations and mathematical writing and proof will be emphasized. Fall. Prerequisites: A grade of C or better in MATH 377 and MATH 387 or permission of instructor.

**MATH 490. Complex Analysis. 3 Credits.**

The complex plane, functions, limits and continuity. Analytic functions, Cauchy- Riemann equations. Cauchy integral theorem and consequences. Additional topics may include: power series, Taylor and Laurent series, classification of singularities, the Residue Theorem and its applications, conformal mapping, selected applications. Spring. Prerequisite: A grade of C or better in (MATH 243 and MATH 285) or MATH 286 or permission of instructor.

**MATH 491. Topics in Mathematics. 3 Credits.**

Admission only by permission of the Chair of the Department. This course is offered when demand warrants. Prerequisite: Permission of the Department Chair.

**MATH 492. Topics in Mathematics. 3 Credits.**

Admission only by permission of the Chair of the Department. This course is offered when demand warrants. Prerequisite: Permission of the Department Chair.

**MATH 497. Mathematics Seminar. 3 Credits.**

A course limited to students of superior ability who wish to study some advanced topic mutually agreed upon by them, the instructor and the Department Chair. Prerequisite: Permission of the instructor and the Department Chair.

**MATH 499. Independent Study. 3 Credits.**

Individual study or research under faculty supervision. Prerequisite: Permission of the instructor and the Department Chair.

# Computer Science

Dr. Igor Aizenberg

Chair of the Department

The Computer Science degree combines depth in all aspects of modern Computer Science with traditions of a liberal arts education.

The program includes introduction to programming, object-oriented programming beginning with C++ and then Java, data structures and algorithms, discrete structures and fundamentals of discrete mathematics, systems programming with Linux, operating systems, databases, computer organization, computer security, numerical computation, computer networks, software engineering and capstone project design, plus electives in programming languages (Python, R, Matlab, other languages), artificial intelligence, cloud computing, artificial neural networks and machine learning, data mining, web programming, parallel computing, blockchain technology, mobile computing. The Department is in the process of development of new electives in mobile applications design, advanced programming languages and cybersecurity.

The Department's **Mission Statement** is: The Computer Science Department strives for excellence in giving our students knowledge through comprehensive educational programs, research, dissemination through scholarly publications, and service to profession, the community, the state, and the nation.

Computer Science prepares students for work in a number of computer-related fields and provides the opportunity to pursue an interdisciplinary minor.

The Department offers both a BS and a BA in Computer Science.

There is a **concentration area** in **Machine Learning and intelligence** within a BS degree, which includes the courses *Neural Networks and Learning Systems*, *Artificial Intelligence*, and *Data Mining*.

The Department started a graduate program (MS) in Computer Science in 2018. This program includes a 1 year BS-MS option for those students who received their undergraduate degree in Computer Science from Manhattan College. Staying only for one more year in the College and taking 24 more credits (8 courses or 6 courses and Master Thesis/Project) students may get their MS degree in Computer Science.

Students are encouraged to participate in programming contests such as the international ACM Collegiate programming contest and summer programs such as Google Summer of Code or research programs held at off-campus locations. With a faculty sponsor, a student may apply for support for an on-campus research project during the summer. Every year students present at the Manhattan College annual student research conference and publish in *The Manhattan Scientist* journal.

**General Requirements:** Major courses should be taken in accordance with the PLAN OF STUDY listed below. The order in which School or Science core courses are taken is flexible. A minimum grade of C in each of the major courses is required. Before taking any major course, the student must obtain a grade of C or better in the prerequisite courses.

## Major Computer Science

A major program in computer science is available in the School of Science within either the Science Curriculum leading to a Bachelor of Science degree or the Liberal Arts curriculum leading to a Bachelor of Arts degree.

### BS in Computer Science

The Department has been working continuously on keeping its BS program in such a rapidly developing area as Computer Science up to date. Thus some changes, which are also important for ABET accreditation, were made recently.

#### Students entered in 2016 must complete the following:

MATH 185	Calculus I	3
MATH 186	Calculus II	3
MATH 331	Probability	3
CMPT 101	Computer Science I	3
CMPT 102	Computer Science II	3
CMPT 238	Data Structures and Algorithms - I	3
CMPT 258	Database Systems I	3
EECE 229	Introduction to Digital Systems	3
CMPT 312	Operating Systems	3
CMPT 334	Computer Organization	3
CMPT 335	Discrete Structures	3
CMPT 353	Systems Programming	3
CMPT 360	Object Oriented Design with Java	3
CMPT 438	Algorithms	3
CMPT 456	Software Engineering	3
PHYS 101 & PHYS 191	Physics I and Physics I Lab	4
PHYS 102 & PHYS 192	Physics II and Physics II Lab	4
PHYS 221	Physics of Digital Systems	4
Approved Departmental Electives		12
SCI 100	Science Orientation Seminar	1

#### Students entered in 2017 must complete the following:

MATH 185	Calculus I	3
MATH 186	Calculus II	3
MATH 331	Probability	3
CMPT 101	Computer Science I	3
CMPT 102	Computer Science II	3
CMPT 238	Data Structures and Algorithms - I	3
CMPT 258	Database Systems I	3
EECE 229	Introduction to Digital Systems	3

CMPT 312	Operating Systems	3
CMPT 334	Computer Organization	3
CMPT 335	Discrete Structures	3
CMPT 353	Systems Programming	3
CMPT 360	Object Oriented Design with Java	3
CMPT 439	Numerical Computation	3
CMPT 456	Software Engineering	3
CMPT 490	Capstone	4
PHYS 101 & PHYS 191	Physics I and Physics I Lab	4
PHYS 102 & PHYS 192	Physics II and Physics II Lab	4
PHYS 221	Physics of Digital Systems	4
Approved Departmental Electives		12
SCI 100	Science Orientation Seminar	1

**Students entered in 2018 must complete the following:**

MATH 185	Calculus I	3
MATH 186	Calculus II	3
MATH 351	Computational Linear Algebra & Statistics for Computer Science	3
CMPT 101	Computer Science I	3
CMPT 102	Computer Science II	3
CMPT 238	Data Structures and Algorithms - I	3
CMPT 258	Database Systems I	3
EECE 229	Introduction to Digital Systems	3
CMPT 312	Operating Systems	3
CMPT 334	Computer Organization	3
CMPT 335	Discrete Structures	3
CMPT 353	Systems Programming	3
CMPT 360	Object Oriented Design with Java	3
CMPT 439	Numerical Computation	3
CMPT 456	Software Engineering	3
CMPT 490	Capstone	4
PHYS 101 & PHYS 191	Physics I and Physics I Lab	4
PHYS 102 & PHYS 192	Physics II and Physics II Lab	4
PHYS 221	Physics of Digital Systems	4
Approved Departmental Electives		15
SCI 100	Science Orientation Seminar	1
SCI 101	Science Orientation Seminar II	1

**Students entered in 2019 have to follow the new curriculum below:**

MATH 185	Calculus I	3
MATH 186	Calculus II	3
MATH 351	Computational Linear Algebra & Statistics for Computer Science	3
CMPT 101	Computer Science I	3
CMPT 102	Computer Science II	3
CMPT 239	Data Structures & Algorithms	4
CMPT 258	Database Systems I	3
EECE 229	Introduction to Digital Systems	3
CMPT 312	Operating Systems	3
CMPT 334	Computer Organization	3
CMPT 335	Discrete Structures	3
CMPT 353	Systems Programming	3
CMPT 360	Object Oriented Design with Java	3
CMPT 439	Numerical Computation	3
CMPT 456	Software Engineering	3
CMPT 466	Computer Networks	3
CMPT 490	Capstone	4
PHYS 101 & PHYS 191	Physics I and Physics I Lab	4
PHYS 102 & PHYS 192	Physics II and Physics II Lab	4
PHYS 221	Physics of Digital Systems	4
Approved Departmental Electives		15
SCI 100	Science Orientation Seminar	1
SCI 101	Science Orientation Seminar II	1

**Students entered starting from 2020 have to follow the new curriculum below:**

MATH 185	Calculus I	3
MATH 186	Calculus II	3
MATH 351	Computational Linear Algebra & Statistics for Computer Science	3
CMPT 101	Computer Science I	3
CMPT 102	Computer Science II	3
CMPT 238	Data Structures and Algorithms - I	3
CMPT 240	Data Structures and Algorithms - II	3
CMPT 258	Database Systems I	3
EECE 229	Introduction to Digital Systems	3
CMPT 312	Operating Systems	3
CMPT 334	Computer Organization	3
CMPT 335	Discrete Structures	3

CMPT 353	Systems Programming	3
CMPT 360	Object Oriented Design with Java	3
CMPT 367	Computer Security	3
CMPT 439	Numerical Computation	3
CMPT 456	Software Engineering	3
CMPT 466	Computer Networks	3
CMPT 490	Capstone	4
Three SCI2xx courses		9
SCI 100	Science Orientation Seminar	1
SCI 101	Science Orientation Seminar II	1
Approved departmental electives		15

## BA in Computer Science

**Students entered before 2018 must complete the following:**

MATH 185	Calculus I	3
MATH 186	Calculus II	3
CMPT 101	Computer Science I	3
CMPT 102	Computer Science II	3
CMPT 238	Data Structures and Algorithms - I	3
CMPT 258	Database Systems I	3
EECE 229	Introduction to Digital Systems	3
CMPT 312	Operating Systems	3
CMPT 334	Computer Organization	3
CMPT 335	Discrete Structures	3
CMPT 353	Systems Programming	3
CMPT 360	Object Oriented Design with Java	3
CMPT 456	Software Engineering	3
Three SCI2xx courses		9
SCI 100	Science Orientation Seminar	1
Approved departmental electives		12

**Students entered in 2018 must complete the following:**

MATH 185	Calculus I	3
MATH 186	Calculus II	3
MATH 351	Computational Linear Algebra & Statistics for Computer Science	3
CMPT 101	Computer Science I	3
CMPT 102	Computer Science II	3
CMPT 238	Data Structures and Algorithms - I	3
CMPT 258	Database Systems I	3
EECE 229	Introduction to Digital Systems	3



CMPT 312	Operating Systems	3
CMPT 334	Computer Organization	3
CMPT 335	Discrete Structures	3
CMPT 353	Systems Programming	3
CMPT 360	Object Oriented Design with Java	3
CMPT 439	Numerical Computation	3
CMPT 456	Software Engineering	3
CMPT 490	Capstone	4
Three SCI2xx courses		9
SCI 100	Science Orientation Seminar	1
SCI 101	Science Orientation Seminar II	1
Approved departmental electives		12

**Students entered in 2019 have to follow the new curriculum below:**

MATH 185	Calculus I	3
MATH 186	Calculus II	3
MATH 351	Computational Linear Algebra & Statistics for Computer Science	3
CMPT 101	Computer Science I	3
CMPT 102	Computer Science II	3
CMPT 239	Data Structures & Algorithms	4
CMPT 258	Database Systems I	3
EECE 229	Introduction to Digital Systems	3
CMPT 312	Operating Systems	3
CMPT 334	Computer Organization	3
CMPT 335	Discrete Structures	3
CMPT 353	Systems Programming	3
CMPT 360	Object Oriented Design with Java	3
CMPT 439	Numerical Computation	3
CMPT 456	Software Engineering	3
CMPT 466	Computer Networks	3
CMPT 490	Capstone	4
Three SCI2xx courses		9
SCI 100	Science Orientation Seminar	1
SCI 101	Science Orientation Seminar II	1
Approved departmental electives		12

**Students entered starting from 2020 have to follow the new curriculum below:**

MATH 185	Calculus I	3
MATH 186	Calculus II	3
MATH 351	Computational Linear Algebra & Statistics for Computer Science	3

CMPT 101	Computer Science I	3
CMPT 102	Computer Science II	3
CMPT 238	Data Structures and Algorithms - I	3
CMPT 258	Database Systems I	3
EECE 229	Introduction to Digital Systems	3
CMPT 312	Operating Systems	3
CMPT 334	Computer Organization	3
CMPT 335	Discrete Structures	3
CMPT 353	Systems Programming	3
CMPT 360	Object Oriented Design with Java	3
CMPT 439	Numerical Computation	3
CMPT 456	Software Engineering	3
CMPT 466	Computer Networks	3
CMPT 490	Capstone	4
Three SCI2xx courses		9
SCI 100	Science Orientation Seminar	1
SCI 101	Science Orientation Seminar II	1
Approved departmental electives		12

## Minor in Computer Science

A student must receive a C or better in at least 15 credits. **Note:** CMPT 155 (formerly MATH 121) and CMPT 214 will not be credited toward the minor in Computer Science.

**Transfer Credit:** At most one course transferred from another institution may be credited toward the fifteen credits required for a minor. A minimum of four courses, 12 credits, must be taken within the Department of Computer Science at Manhattan College.

**Application:** When the required courses are completed, a student must get a Minor Form from the department secretary, fill it out and have it signed by the Chair of the Department.

## Minor Requirement for Students in the School of Engineering

The following two courses are required:

CMPT 102	Computer Science II	3
CMPT 238	Data Structures and Algorithms - I	3

Two of the following seven courses are required:

CMPT 240	Data Structures and Algorithms - II	3
CMPT 258	Database Systems I	3
CMPT 312	Operating Systems	3
CMPT 353	Systems Programming	3
CMPT 360	Object Oriented Design with Java	3
CMPT 439	Numerical Computation	3
CMPT 456	Software Engineering	3

ELECTIVES: One other course at the 200-400 level (including any course from the list above), not including CMPT 155 or CMPT 214. 3

**Minor Requirements for Students in the Schools of Liberal Arts, Business, Education and Science**

The following three courses are required:

CMPT 101	Computer Science I	3
CMPT 102	Computer Science II	3
CMPT 238	Data Structures and Algorithms - I	3

At least one course from the following list:

CMPT 240	Data Structures and Algorithms - II	3
CMPT 258	Database Systems I	3
CMPT 312	Operating Systems	3
CMPT 335	Discrete Structures	3
CMPT 353	Systems Programming	3
CMPT 360	Object Oriented Design with Java	3
CMPT 439	Numerical Computation	3
CMPT 456	Software Engineering	3

Electives: One other course at the 200-400 level, not including CMPT 155 or CMPT 214.

**PLAN OF STUDY**

**Bachelor of Science in Computer Science**

Students entered in 2016 shall follow the following plan of study:

**First Year**

Fall	Credits	Spring	Credits
CMPT 101		3 CMPT 102	3
MATH 185		3 MATH 186	3
SCI 100		1 MLL*	3
MLL*		3 ENGL 110	3
RELS 110		3 Social Science	3
LLRN 102		3	
	16		15

**Second Year**

Fall	Credits	Spring	Credits
CMPT 238		3 CMPT 360	3
CMPT 258		3 CMPT Elective**	3
CMPT 335		3 PHYS 102 & PHYS 192	4

PHYS 101 & PHYS 191	4 Social Science	3
PHIL 150	3 ENGL 150	3
	16	16

**Third Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EECE 229		3 CMPT 312	3
CMPT 353		3 CMPT 334	3
CMPT 438		3 PHYS 221	4
RELS Catholic Studies		3 CMPT Elective	3
HIST 150		3 MUSC 150 or ART 150	3
	15		16

**Fourth Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT Electives		3 CMPT 456	3
MATH 331		3 CMPT Electives	3
RELS Global/Contemporary		3 Free Electives	9
Free Elective	3		
Free Elective	3		
	15		15

Total Credits: 124

\* One year sequence of a modern foreign language.

\*\* If CMPT 241 Web Programming is taken, it is recommended that it be taken after CMPT 258 Database Systems I in the spring of the second year.

**Students entered in 2017 shall follow the following plan of study:****First Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT 101		3 CMPT 102	3
MATH 185		3 CMPT 335	3
SCI 100		1 MATH 186	3
MLL *		3 MLL *	3
RELS 110		3 ENGL 110	3
LLRN 102	3		
	16		15

**Second Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT 238		3 CMPT 360	3
CMPT 258		3 CMPT Elective **	3
MATH 331		3 PHYS 102 & PHYS 192	4

PHYS 101 & PHYS 191	4 Social Science	3
PHIL 150	3 ENGL 150	3
	16	16

**Third Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EECE 229		3 CMPT 312	3
CMPT 353		3 CMPT 334	3
CMPT 439		3 PHYS 221	4
RELS Catholic Studies		3 CMPT Elective	3
HIST 150		3 MUSC 150 or ART 150	3
	15		16

**Fourth Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT 456		3 CMPT 490	4
CMPT Electives		3 CMPT Electives	3
RELS Global/Contemporary		3 Free Electives	9
Free Elective		3	
Social science		3	
	15		16

Total Credits: 125

\* One year sequence of a modern foreign language.

\*\* If CMPT 241 Web Programming is taken, it is recommended that it be taken after CMPT 258 Database Systems I in the spring of the second year.

**Students entered in 2018 shall follow the following plan of study:****First Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT 101		3 CMPT 102	3
MATH 185		3 CMPT 335	3
SCI 100		1 MATH 186	3
MLL *		3 MLL *	3
RELS 110		3 ENGL 110	3
LLRN 102		3 SCI 101	1
	16		16

**Second Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT 238		3 CMPT 360	3
CMPT 258		3 CMPT Elective **	3
PHYS 101 & PHYS 191		4 PHYS 102 & PHYS 192	4

MATH 351	3 Social Science	3
PHIL 150	3 ENGL 150	3
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	16	16

**Third Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EECE 229		3 CMPT 312	3
CMPT 353		3 CMPT 334	3
CMPT 439		3 PHYS 221	4
RELS Catholic Studies		3 CMPT Elective	3
HIST 150		3 MUSC 150 or ART 150	3
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	15		16

**Fourth Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT 456		3 CMPT 490	4
CMPT Electives		3 CMPT Electives	6
RELS Global/Contemporary		3 Free Electives	6
Free Elective	3		
Social science	3		
<hr/>			
	15		16

Total Credits: 126

\* One year sequence of a modern foreign language.

\*\* If CMPT 241 Web Programming is taken, it is recommended that it be taken after CMPT 258 Database Systems I in the spring of the second year.

**Students entered in 2019 shall follow the following plan of study:****First Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT 101		3 CMPT 102	3
MATH 185		3 CMPT 335	3
SCI 100		1 MATH 186	3
MLL *		3 MLL *	3
RELS 110		3 ENGL 110	3
LLRN 102		3 SCI 101	1
<hr/>			
	16		16

**Second Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT 239		4 CMPT 258	3
CMPT 360		3 CMPT Elective	3
MATH 351		3 PHYS 102 & PHYS 192	4

PHYS 101 & PHYS 191	4 Social Science	3
PHIL 150	3 ENGL 150	3
	17	16

**Third Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT 353		3 CMPT 312	3
CMPT 439		3 CMPT 334	3
CMPT 466		3 PHYS 221	4
EECE 229		3 CMPT Elective	3
RELS Catholic Studies		3 MUSC 150 or ART 150	3
	15		16

**Fourth Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT 456		3 CMPT 490	4
CMPT Electives		3 CMPT Electives	6
RELS Global/Contemporary		3 Free Electives	6
Social science		3	
HIST 150		3	
	15		16

Total Credits: 127

\* One year sequence of a modern foreign language.

**Students entered starting from 2020 shall follow the following plan of study:****First Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT 101		3 CMPT 102	3
MATH 185		3 CMPT 335	3
SCI 100		1 MATH 186	3
MLL *		3 MLL *	3
RELS 110		3 ENGL 110	3
LLRN 102		3 SCI 101	1
	16		16

**Second Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT 238		3 CMPT 240	3
CMPT 360		3 CMPT 258	3
MATH 351		3 PHYS 102 & PHYS 192	4
PHYS 101 & PHYS 191		4 Social Science	3

PHIL 150	3 ENGL 150	3
	16	16

**Third Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT 353		3 CMPT 312	3
CMPT 439		3 CMPT 334	3
CMPT 466		3 PHYS 221	4
EECE 229		3 CMPT Elective	3
RELS Catholic Studies		3 MUSC 150 or ART 150	3
	15		16

**Fourth Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT 456		3 CMPT 367	3
CMPT Electives		6 CMPT 490	4
RELS Global/Contemporary		3 CMPT Electives	6
HIST 150		3 Social Science	3
	15		16

Total Credits: 126

\* One year sequence of a modern foreign language.

## Bachelor of Arts in Computer Science

Students entered before 2018 shall follow the following plan of study:

**First Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT 101		3 CMPT 102	3
MATH 185		3 CMPT 335	3
MLL*		3 MATH 186	3
RELS 110		3 MLL*	3
LLRN 102		3 ENGL 110	3
SCI 100	1		
	16		15

**Second Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT 238		3 CMPT 360	3
CMPT 258		3 CMPT Elective**	3
SCI 2xx***		3 SCI 2xx***	3
PHIL 150		3 ENGL 150	3
Social Science		3 Social Science	3
	15		15



**Third Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EECE 229		3 CMPT 312	3
CMPT 353		3 CMPT 334	3
CMPT 438		3 RELS Catholic Studies	3
SCI 2xx <sup>***</sup>		3 MUSC 150 or ART 150	3
HIST 150		3 CMPT Elective	3
	15		15

**Fourth Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT 456		3 RELS Global/Contemporary	3
CMPT Elective		3 CMPT Elective	3
Free Electives		9 Free Electives	9
	15		15

Total Credits: 121

\* One year sequence of a modern foreign language.

\*\* If CMPT 241 Web Programming is taken, it is recommended that it be taken after CMPT 258 Database Systems I in the spring of the second year.

\*\*\* Students may opt instead to take one (1) full year of a lab science (8 credits) in this case total credits for graduation is 120.

**Students entered in 2018 shall follow the following plan of study:****First Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT 101		3 CMPT 102	3
MATH 185		3 CMPT 335	3
SCI 100		1 MATH 186	3
MLL <sup>*</sup>		3 MLL <sup>*</sup>	3
RELS 110		3 ENGL 110	3
LLRN 102		3 SCI 101	1
	16		16

**Second Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT 238		3 CMPT 360	3
CMPT 258		3 CMPT Elective <sup>**</sup>	3
MATH 351		3 SCI 2xx <sup>***</sup>	3
SCI 2xx <sup>***</sup>		3 ENGL 150	3
PHIL 150		3 Social Science	3
	15		15

**Third Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EECE 229		3 CMPT 312	3
CMPT 353		3 CMPT 334	3
CMPT 439		3 RELS Catholic Studies	3
SCI 2xx ***		3 MUSC 150 or ART 150	3
HIST 150		3 CMPT Elective	3
	15		15

**Fourth Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT 456		3 CMPT 490	4
CMPT Elective		3 RELS Global/Contemporary	3
Free Electives		6 CMPT Elective	3
Social Science		3 Free Electives	6
	15		16

Total Credits: 123

\* One year sequence of a modern foreign language.

\*\* If CMPT 241 Web Programming; is taken, it is recommended that it be taken after;  
CMPT 258 Database Systems I; in the spring of the second year

\*\*\* Students may opt instead to take one (1) full year of a lab science (8 credits) in this case total credits for graduation is 121

**Students entered in 2019 shall follow the following plan of study:**

**First Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT 101		3 CMPT 102	3
MATH 185		3 CMPT 335	3
SCI 100		1 MATH 186	3
MLL *		3 MLL *	3
RELS 110		3 ENGL 110	3
LLRN 102		3 SCI 101	1
	16		16

**Second Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT 239		4 CMPT 258	3
CMPT 360		3 CMPT Elective	3
SCI 2xx **		3 SCI 2xx **	3
MATH 351		3 ENGL 150	3
PHIL 150		3 Social Science	3
	16		15

**Third Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT 353		3 CMPT 312	3
CMPT 439		3 CMPT 334	3
CMPT 466		3 RELS Catholic Studies	3
EECE 229		3 MUSC 150 or ART 150	3
SCI 2xx**		3 CMPT Elective	3
	15		15

**Fourth Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT 456		3 CMPT 490	4
CMPT Elective		3 RELS Global/Contemporary	3
Free Electives		3 CMPT Elective	3
Social Science		3 Free Electives	6
HIST 150		3	
	15		16

Total Credits: 124

\* One year sequence of a modern foreign language.

\*\* Students may opt instead to take one (1) full year of a lab science (8 credits) in this case total credits for graduation is 121

**Students entered starting from 2020 shall follow the following plan of study:****First Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT 101		3 CMPT 102	3
MATH 185		3 CMPT 335	3
SCI 100		1 MATH 186	3
MLL*		3 MLL*	3
RELS 110		3 ENGL 110	3
LLRN 102		3 SCI 101	1
	16		16

**Second Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT 238		3 CMPT 258	3
CMPT 360		3 SCI 2xx**	3
SCI 2xx**		3 ENGL 150	3
MATH 351		3 Social Science	3
PHIL 150		3 Free Elective	3
	15		15

**Third Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT 353		3 CMPT 312	3
CMPT 439		3 CMPT 334	3
CMPT 466		3 RELS Catholic Studies	3
EECE 229		3 MUSC 150 or ART 150	3
SCI 2xx**		3 CMPT Elective	3
		15	15

**Fourth Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CMPT 456		3 CMPT 490	4
CMPT Elective		3 RELS Global/Contemporary	3
Free Electives		3 CMPT Elective	6
Social Science		3 Free Electives	3
HIST 150		3	
		15	16

Total Credits: 123

\* One year sequence of a modern foreign language.

\*\* Students may opt instead to take one (1) full year of a lab science (8 credits) in this case total credits for graduation is 121

**Courses****CMPT 101. Computer Science I. 3 Credits.**

An introduction to basic programming concepts and problem solving skills using the C++ language. Topics include flow of control, loops, functions, arrays, strings and files. CMPT 101 cannot be taken after CMPT 102.

**CMPT 102. Computer Science II. 3 Credits.**

An introduction to advance programming concepts using the C++ language. Topics include pointers, structured data, classes, inheritance, polymorphism, exceptions, templates, and recursion. Prerequisite: A grade of C or better in CMPT 101 or ENGR 116.

**CMPT 121. Computer Applications for Life Sciences. 3 Credits.**

This course explores the use of the computer for analyzing data appropriate to the life sciences. Topics include using Excel for research: worksheet basics, formulas and functions, charts and graphics, macros and VBA, passing data sets between applications; Computer representations of discrete time dynamical systems, growth and decay models, linear, exponential and logarithmic regression; Introduction to writing simple computer programs and/or procedures.

**CMPT 155. Computer Applications for Life Sciences. 3 Credits.**

This course explores the use of the computer for analyzing data appropriate to the life sciences. Topics include using electronic spreadsheets and other dedicated software for research: worksheet basics, formulas and functions, charts and graphics, passing data sets between applications; computer representations of growth and decay models, linear, exponential and logarithmic regression; statistical functions and probability distributions, matrices.

**CMPT 201. Computer Sci II for Eng.. 3 Credits.**

An introduction to programming and problem solving skills using C++ language. Topics include flow of control, loops, functions, arrays, strings, files, pointers, structured data, recursion, classes, inheritance, and polymorphism. Prerequisite: A grade of C or better in ENGS 116 or permission of the instructor.

**CMPT 214. Teaching and Learning with Technology. 3 Credits.**

Examines various uses of technology in the classroom to promote student learning.

**CMPT 238. Data Structures and Algorithms - I. 3 Credits.**

Efficiency of search, sort, and hash algorithms. Stacks, queues, priority queues, binary trees, binary search trees, general trees, heaps, and heapsort. Fall. Prerequisite: A grade of C or better in CMPT 102 or CMPT 201.

**CMPT 239. Data Structures & Algorithms. 4 Credits.**

Efficiency of search, sort, and hash algorithms. Stacks, queues, priority queues, binary trees, binary search trees, general trees, heaps, and heapsort. Algorithm analysis techniques, worst-case analysis, greedy algorithms, divide and conquer algorithms, recurrent algorithms. Fall. Prerequisite: A grade of C or better in CMPT 102 or CMPT 201.

**CMPT 240. Data Structures and Algorithms - II. 3 Credits.**

This course describes in depth the algorithm analysis techniques, asymptotic notations, worst-case analysis, greedy algorithms, divide and conquer algorithms, dynamic programming algorithms, graph algorithms, and NP-completeness. This course also covers heaps, heap sort, and priority queues. Prerequisites: A grade of C or better in CMPT 238.

**CMPT 241. Web Programming. 3 Credits.**

An introduction to Web programming using HTML, CSS and Javascript for development of Web-based applications. Current server-side scripting languages such as PHP will be used for creating dynamic Web pages. Spring. Prerequisite: A grade of C or better in CMPT 102 or CMPT 201 or permission of the instructor.

**CMPT 258. Database Systems I. 3 Credits.**

An introduction to database system concepts; SQL, database design, normalizing tables, functional dependencies, entity-relationship and relational database models; use of object-oriented design and event programming. Fall. Prerequisite: A grade of C or better in CMPT 102 or CMPT 201 or permission of the instructor.

**CMPT 312. Operating Systems. 3 Credits.**

File systems, CPU scheduling, memory management, virtual memory and machines, disk scheduling, deadlocks and their prevention, concurrency, protection mechanisms, multiprocessors, distributed systems. A survey of the services provided by some of the more popular operating systems. Spring. Prerequisite: A grade of C or better in CMPT 353 or permission of the instructor.

**CMPT 334. Computer Organization. 3 Credits.**

A study of the internal architecture of a computer. Topics include instruction sets, hardwired and microprogrammed control unit designs, memory systems, I/O systems, introduction to pipeline and parallel processing. Spring. Prerequisite: A grade of C or better in EECE 229 or permission of the instructor.

**CMPT 335. Discrete Structures. 3 Credits.**

A study of concepts and fundamentals of propositional logic, logic of predicates, sets and set operations, mathematical induction, modular arithmetic, relations, coding theory and encryption. Detailed consideration of structures most frequently encountered in computer science: graphs, trees, and operations on them. Spring (and Fall if needed). Prerequisite: A grade of C or better in CMPT 101 or CMPT 201.

**CMPT 336. Simulation and Modeling. 3 Credits.**

Probability distributions, mathematical models, simulation of queuing systems, Markov chains. Prerequisite: A grade of C or better in CMPT 102 or CMPT 201 and MATH 186.

**CMPT 341. Programming Languages. 3 Credits.**

Study of modern programming languages different from C++ and Java (Python and C# or other popular modern programming languages can be covered). Study of language specification and analysis, control structures and data flow. Prerequisites: A grade of C or better in CMPT-102 or CMPT-201.

**CMPT 353. Systems Programming. 3 Credits.**

C programming language. Introduction to the UNIX/Linux operating system and shell programming. Design and implementation of selected systems software in the UNIX/Linux environment. Introduction to Perl. Fall. Prerequisite: A grade C or better in CMPT 102 or CMPT 201 and CMPT 238 or CMPT 239.

**CMPT 358. Database Systems II. 3 Credits.**

A continuation of 258. Introduction to middleware, database connectivity and Web development issues; ODBC, OLE DB, Active XData Objects (ADO); security. Prerequisite: A grade of C or better in CMPT 258.

**CMPT 360. Object Oriented Design with Java. 3 Credits.**

An introduction to object-oriented design using the programming language Java. Classes, objects, inheritance, abstract types, polymorphism, the Liskov substitution principle, design patterns, generics, iterators, and generators. Spring. Prerequisite: A grade C or better in CMPT 102 or CMPT 201.

**CMPT 363. Data Mining. 3 Credits.**

This course focuses on fundamental data mining algorithms and their applications in the process of knowledge discovery. The course will cover the general aspects and techniques of analyzing large, complex datasets, recognizing patterns and making predictions. The R programming language will also be introduced and used for hands-on experimentation with data mining algorithms. Cross-listed with CMPG-763 Data Mining.

**CMPT 364. Cloud Computing and Virtualization. 3 Credits.**

This course offers an in-depth study of Cloud Computing and its underlying technologies, specifically Virtualization. Areas of discussion include the internal architecture of clouds, the architecture and structure of Virtual Machines, and cloud management, security, and optimizations. The course also covers Linux Containers and their features. The course supplements all the topics with tracing actual software code (Xen, KVM, QEMU, VirtualBox), study of the latest related research publications, and hands-on experience with the relevant technologies (AWS, Live Migration, Nested Virtualization). Cross-listed with CMPT-464 Cloud Computing and Virtualization.

**CMPT 367. Computer Security. 3 Credits.**

This course provides a basic introduction to the key concepts in security. It covers basic concepts such as authentication, confidentiality, integrity, and non-repudiation as well as important techniques and applications. Topics include cryptography, access control, privacy, software/operating system security, and security policies. A course can be taken by juniors and seniors. Prerequisites: A grade C or higher in CMPT 335.

**CMPT 368. Blockchain and Cryptocurrency Technologies. 3 Credits.**

This course provides a comprehensive introduction to the revolutionary blockchain and cryptocurrency technologies. This course cover topics related to the new global money for the Internet age. This course explain how blockchain technology is transforming the Internet, allow students to understand bitcoin, cryptocurrencies and how they are disrupting the financial industry, have a comprehensive understanding of where blockchain technology is headed and how it can be leveraged. Prerequisite: grade C or higher in CMPT 238 or CMPT 239.

**CMPT 375. Internship for Juniors. 3 Credits.**

Students participate in an off-campus training experience closely related to one of the areas of computer science. Frequent meetings with the advisor plus a paper are required. Prerequisites: Junior status, 3.0 GPA, and permission of the student's advisor or the Chair.

**CMPT 415. Computer Graphics. 3 Credits.**

Graphics primitives, two and three-dimensional transforms, clipping, hardware, projections, user interface, raster methods, hidden surface algorithms, color, shading, and ray tracing. Prerequisite: A grade of C or better in CMPT 238.

**CMPT 420. Artificial Intelligence. 3 Credits.**

Introduction to a functional language, such as LISP. Simulation of intelligence by machines in the areas of natural language processing, automated reasoning, computer vision, and robotics. Spring. Prerequisite: A grade of C or better in CMPT 102 or CMPT 201 or permission of the instructor. Cross-listed wit CMPG-720 Artificial Intelligence.

**CMPT 431. Multimedia. 3 Credits.**

An introduction to multimedia capabilities of computers, including the storage and manipulation of large media files, network protocols for multimedia distribution, digital rights management, encodings for video and audio files, and methods for analyzing multimedia data. Prerequisite: CMPT 102 or permission of the instructor.

**CMPT 438. Algorithms. 3 Credits.**

Algorithm analysis techniques, worse-case analysis, greedy algorithms, divide and conquer algorithms, dynamic programming algorithms, branch-and-bound, and NP-completeness. Students will design algorithms, prove them correct, implement them, and then verify their implementation. Fall. Prerequisites: A grade of C or better in CMPT 102 or CMPT 201 and CMPT 238 and CMPT 335.

**CMPT 439. Numerical Computation. 3 Credits.**

Numerical techniques, types of errors, and accuracy of numerical solutions. Introduction to MATLAB. Solution of non-linear equations. Solution of systems of linear algebraic equations. Interpolation. Polynomial approximation. Numerical integration and differentiation. Nonlinear optimization. Students will learn numerical methods, utilize them in software, and then use this software for solving practical problems. Fall. Prerequisite: A grade of C or better in CMPT 102 or CMPT 201 and MATH 186.

**CMPT 443. Computability Theory. 3 Credits.**

Turing-computable functions, and their relationship to recursive functions. Formal languages, regularity, finite and push-down automata and their simulation. Universality of programs and Turing machines. Unsolvability and an introduction to the theory of computational complexity. Fall. Prerequisite: A grade of C or better in CMPT 335 or MATH 243.

**CMPT 454. Compiler Design. 3 Credits.**

Introduction to automata and context-free grammars. Basic techniques of parsing and derivations. Generators, symbol tables, syntax-directed translation. Error detection, optimization, and data-flow analysis. Admission by permission of the Chair of the Department. This course is offered when demand warrants. A study of the principles and methods advocated for the development of large and complex software systems. Each student will be required to participate in a team project devoted to the specification, design and implementation of a sizable software system. Spring. Prerequisite: A grade of C or better in CMPT 335 or CMPT 360.

**CMPT 456. Software Engineering. 3 Credits.**

A study of the principles and methods advocated for the development of large and complex software systems. Each student will be required to participate in a team project devoted to the specification, design and implementation of a sizable software system. Spring. Prerequisite: CMPT 335 or CMPT 360 or permission of instructor. Cross-listed with CMPG-756 Software Engineering.

**CMPT 463. Topics in Computer Science. 3 Credits.**

Admission only by permission of the Chair of the Department. This course is offered when demand warrants.

**CMPT 464. Topics in Computer Science. 3 Credits.**

Admission only by permission of the Chair of the Department. This course is offered when demand warrants.



**CMPT 465. Neural Networks and Learning Systems. 3 Credits.**

This course provides the basic concepts of neural networks and other learning techniques including but not limited to: biological foundations of neural networks, basics of neural information processing, an artificial neuron and its activation function, multilayer feedforward neural networks and backpropagation learning, deep learning, Hopfield neural networks and associative memories, recurrent neural networks, support vector machines, validation of learning results, and clustering. Laboratory exercises provide experience with design and utilization neural and other machine learning algorithms and solving real-world classification, prediction, pattern recognition and intelligent data analysis problems. A course project will help students to develop their team-working skills and get a good experience in software project design. Cross-listed with CMPG-465 Neural Networks and Learning Systems.

**CMPT 466. Computer Networks. 3 Credits.**

This is an introductory course to computer networks. It teaches the fundamentals of networking systems, their architecture, function and operation and how those fundamentals reflected in current network technologies. Topics include application layer protocols, Internet protocols, network interfaces, local and wide area networks, wireless networks, bridging and routing, and network security. Prerequisites: CMPT 102 and CMPT 335 with grade C or higher.

**CMPT 467. Special Topic: Networks. 3 Credits.**

Admission by permission of the Chair of the Department. This course is offered when demand warrants.

**CMPT 468. Topics in Computer Science. 3 Credits.**

Admission by permission of the Chair of the Department. This course is offered when demand warrants.

**CMPT 469. Independent Study. 3 Credits.**

Individual study and/or research under faculty supervision.

**CMPT 475. Internship for Seniors. 3 Credits.**

Students participate in an off-campus training experience closely related to their area of computer science. Frequent meetings with the advisor plus a paper are required. Prerequisites: Senior status, 3.0 GPA, and permission of the student's advisor or the Chair.

**CMPT 490. Capstone. 4 Credits.**

The aim of the capstone project in the senior year of Computer Science majors is to familiarize them with the process of solving real-world computational problems as practiced in industry. This course requires students to develop a project based on the knowledge and skills acquired in earlier coursework and integrate their knowledge and skills as a practical design effort. The work should be typically performed as a team project. Spring. Prerequisite: a grade of C or better in CMPT 360 or CMPT 456 or permission of the Department Chair.

# Physics

Dr. Rostislav Konoplich  
Chair of the Department

## Lower Division Requirements

All physics majors must take the following courses in their freshman and sophomore years:

PHYS 101 & PHYS 191	Physics I and Physics I Lab	4
PHYS 102 & PHYS 192	Physics II and Physics II Lab	4
PHYS 209	Mathematical Methods in Physics	3
PHYS 233	Physics III	3
PHYS 234	Physics IV	3
PHYS 261	Intermediate Laboratory I	1
PHYS 262	Intermediate Laboratory II	1
SCI 100	Science Orientation Seminar	1
SCI 101	Science Orientation Seminar II	1
CMPT 101	Computer Science I	3
MATH 185	Calculus I	3
or MATH 187	Honors Calculus I	
or MATH 155	Calculus for the Life Sciences I	
MATH 186	Calculus II	3
or MATH 188	Honors Calculus II	
or MATH 156	Calculus for the Life Sciences II	
MATH 285	Calculus III	3
or MATH 287	Honors Calculus III	
MATH 286	Differential Equations	3
CHEM 101 & CHEM 103	General Chemistry I and General Chemistry Laboratory I	4
CHEM 102 & CHEM 104	General Chemistry II and General Chemistry Laboratory II	4

Students selected for the honors sequence will be enrolled in the honors sections of Physics I and II (Physics 101H and Physics 102H).

## Upper Division Requirements for the B.S. Major in Physics

PHYS 301	Computational Physics	3
PHYS 309	Mechanics I	3
PHYS 311	Atomic & Nuclear Physics	3

PHYS 312	Quantum Mechanics I	3
PHYS 314	Electromagnetic Waves	3
PHYS 341	Topics in Astrophysics	3
PHYS 350	Optics	3
PHYS 352	Modern Physics Lab II	2
PHYS 410	Advanced Theoretical Physics	3
PHYS 415	Statistical Mechanics	3
PHYS 440	Research Project in Physics	3
PHYS 443	Quantum Mechanics II	3
PHYS 445	Research Project in Physics	2
PHYS 446	Topics in Cosmology	3
PHYS 450	Seminar	1

This track is standard preparation for graduate studies in physics.

## Upper Division Requirements for the B.A. Major in Physics

PHYS 301	Computational Physics	3
PHYS 309	Mechanics I	3
PHYS 311	Atomic & Nuclear Physics	3
PHYS 314	Electromagnetic Waves	3
PHYS 350	Optics	3
PHYS 352	Modern Physics Lab II	2
PHYS 441	Senior Thesis	3
PHYS 446	Topics in Cosmology	3

The B.A. Physics major program is useful to those interested in careers in such fields as education, technical writing, and patent law. It also provides a full foundation for graduate studies in physics.

## Grade Requirements

For graduation a physics major must have a 2.00 cumulative index in all required physics courses and the elective science and engineering courses. A minimum grade of C is required in all major courses.

## The Concentration in Theoretical Physics

The concentration in Theoretical Physics offers students the opportunity to acquire a deep conceptual understanding of fundamental physics and provides a foundation for professional work not only in physics and related fields but also in such fields as astrophysics, biophysics, engineering and applied physics, geophysics, mathematical physics, computer science, finance, or medicine. This concentration is based on existing courses Quantum Mechanics I (PHYS 312), Quantum Mechanics II (PHYS 443) and Advanced Theoretical Physics (PHYS 410).

## The Cooperative 3-2 Program

A track II major may choose to complete the required Physics courses in three years leaving all science and free electives to the senior year. The final two years of the five year sequence may then be spent in Engineering. At the end of the fourth year the student receives the B.S. in Physics and at the end of the fifth year the B.S. in Engineering.

## Minor

### Requirement for a Minor in Physics

5 courses or 15 credits in approved physics courses.

## Bachelor of Science in Physics

### First Year

Fall	Credits	Spring	Credits
PHYS 101 & PHYS 191		4 PHYS 102 & PHYS 192	4
MATH 185, 187, or 155		3 MATH 186, 188, or 156	3
RELS 110		3 CMPT 101	3
SCI 100		1 ENGL 110	3
MLL		3 SCI 101	1
		MLL	3
		14	17

### Second Year

Fall	Credits	Spring	Credits
PHYS 233		3 PHYS 209	3
PHYS 261		1 PHYS 234	3
MATH 285 or 287		3 PHYS 262	1
CHEM 101 & CHEM 103		4 MATH 286	3
LLRN 102 or PHIL 213		3 CHEM 102 & CHEM 104	4
		Electives	3
		14	17

### Third Year

Fall	Credits	Spring	Credits
PHYS 301		3 PHYS 312	3
PHYS 309		3 PHYS 314	3
PHYS 311		3 PHYS 341	3
PHYS 350		3 PHYS 352	2
ENGL 150		3 PHIL 150	3
MUSC 150 or ART 150		3 RELS Catholic Studies	3
		18	17

**Fourth Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
PHYS 440		3 PHYS 410	3
PHYS 443		3 PHYS 415	3
PHYS 446		3 PHYS 445	2
RELS Global/Contemporary		3 PHYS 450	1
Social Sciences		3 HIST 150	3
		Social Sciences	3
			<hr/>
			15
			<hr/>

Total Credits: 127

**Bachelor of Arts in Physics**

**First Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
PHYS 101		4 PHYS 102	4
& PHYS 191		& PHYS 192	
MATH 185, 187, or 155		3 MATH 186, 188, or 156	3
RELS 110		3 CMPT 101	3
SCI 100		1 ENGL 110	3
MLL		3 SCI 101	1
		MLL	3
			<hr/>
			14
			<hr/>

**Second Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
PHYS 233		3 PHYS 209	3
PHYS 261		1 PHYS 234	3
MATH 285 or 287		3 PHYS 262	1
CHEM 101		4 MATH 286	3
& CHEM 103			
LLRN 102 or PHIL 213		3 CHEM 102	4
		& CHEM 104	
		Electives	3
			<hr/>
			14
			<hr/>

**Third Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
PHYS 301		3 PHYS 314	3
PHYS 309		3 PHYS 352	2
PHYS 311		3 PHIL 150	3
PHYS 350		3 RELS Catholic Studies	3
ENGL 150		3 Electives	3

MUSC 150 or ART 150	3	
	18	14

**Fourth Year**

<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
RELS Global/Contemporary		3 PHYS 441	3
Social Sciences		3 HIST 150	3
PHYS 446		3 Social Sciences	3
Electives		6 Electives	6
	15		15

Total Credits: 124

**Courses****PHYS 101. Physics I. 3 Credits.**

A calculus approach to the basic concepts of mechanics. Three lecture hours. Must also register for PHYS 191 lab. Prerequisite or Corequisite: MATH 155 or MATH 185, or MATH 187.

**PHYS 102. Physics II. 3 Credits.**

A calculus approach to the basic concepts of electricity and magnetism. Three lecture hours. Must also register for PHYS 192 lab. Prerequisite or corequisite PHYS 101 and MATH 156, or MATH 186, or MATH 188.

**PHYS 105. Principles of Physics I. 4 Credits.**

An introduction to the basic principles and concepts of Physics including mechanics, oscillations and waves. Three lecture hours.

**PHYS 106. Principles of Physics II. 4 Credits.**

An introduction to the basic principles and concepts of physics including, electricity and magnetism, optics and modern physics. Three lecture hours. Prerequisite: PHYS 105 or equivalent.

**PHYS 107. Introduction to Physics I. 4 Credits.**

An algebra based approach to the basic concepts of mechanics, oscillations and waves, fluid statics and dynamics with biological applications. Three lecture hours.

**PHYS 108. Introduction to Physics II. 4 Credits.**

An algebra based approach to the basic concepts of electricity and magnetism, electromagnetic waves, optics and elementary modern physics with biological applications. Three lecture hours. Prerequisite: PHYS 107 or equivalent.

**PHYS 151. Introduction to Physics Research. Credits.**

Elementary Research projects for beginning students in physics. Students learn how to pursue an open ended question under the guidance of a faculty advisor. Permission of department chair required.

**PHYS 152. Introduction Physics Research II. Credits.**

Elementary Research projects for beginning students in physics. Students learn how to pursue an open ended question under the guidance of a faculty advisor. Permission of department chair required.

**PHYS 191. Physics I Lab. 1 Credit.**

Physics I Laboratory. Three lab hours. Co-requisite: PHYS 101.

**PHYS 192. Physics II Lab. 1 Credit.**

Physics II Laboratory. Three lab hours. Co-requisite: PHYS 102.

**PHYS 195. Principles of Physics I Lab. 0 Credits.**

Principles of Physics I Laboratory. Three lab hours. Co-requisite: PHYS 105.

**PHYS 196. Principles of Physics II Lab. 0 Credits.**

Principles of Physics II Laboratory. Three lab hours. Co-requisite: PHYS 106.

**PHYS 197. Introduction to Physics I Lab. 0 Credits.**

Introduction to Physics I Laboratory. Three lab hours. Co-requisite: PHYS 107.

**PHYS 198. Introduction to Physics II Lab. 0 Credits.**

Introduction to Physics II Laboratory. Three lab hours. Co-requisite: PHYS 108.

**PHYS 201. Wave Theory of Light and Matter. 3 Credits.**

Intermediate level introduction to electromagnetic waves and the theory of light, geometrical and physical optics, introduction to quantum concepts and the wave nature of matter with applications to the solid state.

**PHYS 209. Mathematical Methods in Physics. 3 Credits.**

Complex algebra and analysis, vector analysis, matrices and eigenvalue problems.

Fourier series and introduction to linear spaces. Introduction to partial differential equations as applied to physics. Three lecture hours. Prerequisites: C or better in PHYS 102 and MATH 285 or MATH 287.

**PHYS 214. Electricity and Magnetism. 3 Credits.**

Electrostatics, Magnetostatics, Faraday's Law, Maxwell's equations using vector analysis. Spring. Pre-requisite: C or better in PHYS 102; MATH 285.

**PHYS 221. Physics of Digital Systems. 4 Credits.**

The basic physics and selected circuit applications of solid state devices such as the diode, transistor and op-amp as used in digital systems. The lectures will concentrate on the development of band theory and the diode equation from first principles while the lab will concentrate on digital circuit application using TTL and analog IC'S. Three lectures and one two-hour laboratory. Prerequisites: PHYS 101, PHYS 102 sequence.

**PHYS 233. Physics III. 3 Credits.**

Introduction to oscillations, mechanical waves, fluid dynamics, and thermodynamics.

Three lecture hours. Pre-requisite: C or better in PHYS 102.

**PHYS 234. Physics IV. 3 Credits.**

Gravitation, electromagnetic waves, optics, introduction to modern physics, and solid state physics. Three lecture hours. Pre-requisite: C or better in PHYS 102.

**PHYS 261. Intermediate Laboratory I. 1 Credit.**

Experiments in mechanical waves, fluids, and thermodynamics. Three lab hours.

**PHYS 262. Intermediate Laboratory II. 1 Credit.**

Experiments in electricity and magnetism, optics, and introductory modern physics. Three Lab hours.

**PHYS 301. Computational Physics. 3 Credits.**

An introduction to computational physics. Monte Carlo techniques. Numerical differentiation and integration. Searching, fitting and data analysis. Differential equations. Three lecture hours. Pre-requisites: C or better in PHYS 102 and MATH 285 or MATH 287.

**PHYS 309. Mechanics I. 3 Credits.**

Dynamics of particles and systems; Gravitation; Rotating Coordinates; Motion of rigid bodies, Lagrangian formulation. Coupled oscillators. Three lectures. Pre-requisite: C or better in PHYS 209 or with permission of department chair.

**PHYS 311. Atomic & Nuclear Physics. 3 Credits.**

Schrodinger wave theory for atomic structure. Magnetic field effects on atoms. Atomic and molecular spectra. Introductory nuclear physics. Three lectures. Pre-requisite: C or better in PHYS 209 or with permission of department chair.

**PHYS 312. Quantum Mechanics I. 3 Credits.**

Introduction to Quantum theory. One dimensional quantum systems. The harmonic oscillator. Central Potentials. Pre-requisite: C or better in PHYS 209 or with permission of department chair.

**PHYS 314. Electromagnetic Waves. 3 Credits.**

Electro-magnetic waves and their interaction with matter. Maxwell's Equations in free space and dielectric media. Pre-requisite: C or better in PHYS 209 or with permission of department chair.

**PHYS 323. Astronomy. 3 Credits.**

An intermediate level overview of the solar system and the physical properties of stars, stellar evolution, galaxies and the universe at large. Pre-requisite: PHYS 101 and PHYS 102.

**PHYS 341. Topics in Astrophysics. 3 Credits.**

Topics of current interest in astrophysics, including stellar structure and atmospheres, evolution and remnants, formation of stars and planetary systems, galactic structure and evolution of galaxies. Prerequisite: C or better in PHYS 209.

**PHYS 342. Topics: in Astrophysics. 3 Credits.**

Topics of current interest in astrophysics, including stellar structure and atmospheres, evolution and remnants, formation of stars and planetary systems, galactic structure and evolution of galaxies. Prerequisite: C or better in PHYS 209.

**PHYS 350. Optics. 3 Credits.**

Wave optics, light and matter, interference, diffraction, polarization, and advanced topics in Optics. Three lecture hours. Pre-requisites: C or better in PHYS 102 and MATH 285 or MATH 287.

**PHYS 351. Modern Physics Laboratory I. 2 Credits.**

Experimental verification of properties of atomic structure. One three-hour period.

**PHYS 352. Modern Physics Lab II. 2 Credits.**

Advanced experiments in atomic and nuclear physics. Properties of radioactivity. One three-hour period.



**PHYS 375. Internship for Juniors. 3 Credits.**

Students participate in an off-campus training experience closely related to one of the areas of physics. Frequent meetings with the advisor plus a paper are required. Prerequisites: Junior status, 3.0 GPA, and permission of the student's advisor or Chair.

**PHYS 410. Advanced Theoretical Physics. 3 Credits.**

Vector and tensor analysis, complex variables, integral transform and Green's function methods in theoretical physics, special functions and partial differential equations, group theory in quantum mechanics. Three lecture hours.

**PHYS 414. Electromagnetic Radiation II. 3 Credits.**

Dielectric and Magnetic materials, electromagnetic waves in free space and media. Dipole radiation.

**PHYS 415. Statistical Mechanics. 3 Credits.**

Statistical mechanics of many body systems in equilibrium. Thermal behavior and phase transitions in condensed matter. Boltzmann's equation and non-equilibrium phenomena.

**PHYS 432. Solid State Physics. 3 Credits.**

Lattices and crystal binding. Phonons and lattice vibrations. Thermal properties of insulators. Metals, free electron gas, energy bands. Semiconductors, mobility, life times, p-n junctions. Superconductivity, B.C.S. theory. Phase transitions Magnetothermal properties. Three lectures.

**PHYS 434. Research Problems in Physics. 2 Credits.****PHYS 435. Research Problems in Physics. 2 Credits.****PHYS 440. Research Project in Physics. 3 Credits.**

Introductory level student research projects in either experimental or theoretical physics carried out under the guidance of a faculty member.

**PHYS 441. Senior Thesis. 3 Credits.**

An independent study program in experimental or theoretical physics to provide an opportunity for the scientific development of advanced undergraduate physics majors. Minimum of six hours a week devoted to an organized study program is required. Permission of department chair necessary.

**PHYS 442. Senior Thesis. 3 Credits.**

An independent study program in experimental or theoretical physics to provide an opportunity for the scientific development of advanced undergraduate physics majors. Minimum of six hours a week devoted to an organized study program is required. Permission of department chair necessary.

**PHYS 443. Quantum Mechanics II. 3 Credits.**

Development of the formal structure of quantum mechanics. Time independent perturbation theory. Theory of scattering. Second quantization. Pre-requisite: C or better in PHYS 312.

**PHYS 445. Research Project in Physics. 2 Credits.**

Introductory level student research projects in either experimental or theoretical physics carried out under the guidance of a faculty member.

**PHYS 446. Topics in Cosmology. 3 Credits.**

Topics of current interest in cosmology, including cosmic distance ladder, geometry of the expanding universe, thermal history and cosmic microwave background, inflation and the primordial era. Prerequisite: C or better in PHYS 209 or with permission of department chair.

**PHYS 450. Seminar. 1 Credit.**

Single and sequential lectures on special topics in physics. Track I majors are required to present a research paper on either a theoretical or experimental topic in the spring semester of the senior year.

**PHYS 475. Internship for Seniors. 3 Credits.**

Students participate in an off-campus training experience closely related to their area of physics. Frequent meetings with the advisor plus a paper are required. Prerequisites: Senior status, 3.0 GPA, and permission of the student's advisor or the Chair.

# Pre-Health Concentration

Dr. Bruce Liby  
Pre-Health Professions Advisor

Br. Daniel Gardner  
Pre-Health Professions Advisor

Dr. Rani Roy  
Associate Provost

The Pre-Health concentration is designed to provide students with the necessary foundation for a career in the Health Professions. Current and transfer students may enroll, if eligible, after completing three full-time semesters of college level work. This designation will be on their official academic record as fulfillment of the requirements of the concentration. Students from any major and any School of the College may enter the Concentration.

To matriculate in the pre-health concentration, a student must earn an overall average GPA of 3.0 all courses with no more than two grades lower than a 3.0 in any of the Concentration courses. Students must have completed or be currently enrolled in Science 105, Introduction to Pre-Health Studies. Any Pre-Concentration student who, at any time, fails to meet all requirements concurrently will be dismissed from the concentration. To be in good standing in the concentration, students must take at least six credits in the concentration per academic year (including summer). Students who fail to do so will be dismissed from the concentration, but may reapply when this requirement is met. Although not a requirement of the major, all pre-requisites and co-requisites of the below courses must be taken.

As the pre-requisites for the various programs in the Health Professions can vary substantially, students may request, in advance, to substitute specific courses for some of the above requirements. Substitutions for any of the above courses will be considered on a case by case basis and must be approved in advance by the Pre-Health Advisor.

Individual requirements may be waived by the Pre-Health Advisor in special cases.

Students who have been dismissed from the Concentration may re-apply. To be successful, such students must demonstrate a greatly improved academic performance or profound extenuating circumstance.

## Pre-Health Concentration Requirements

All students enrolled in the Pre-Health Concentration must take the following courses:

SCI 105	Introduction to Pre-Health Studies	1
BIOL 111	General Biology I	4
BIOL 113	General Biology I Laboratory	0
BIOL 112	General Biology II	4
BIOL 114	General Biology II Laboratory	0
BIOL 217	Genetics	4
CHEM 101	General Chemistry I	3
CHEM 103	General Chemistry Laboratory I	1

CHEM 102	General Chemistry II	3
CHEM 104	General Chemistry Laboratory II	1
CHEM 319	Organic Chemistry I	3
CHEM 323	Organic Chemistry Laboratory I	2
CHEM 320	Organic Chemistry II	3
CHEM 324	Organic Chemistry Laboratory II	2
CHEM 433	Biochemistry I	3
or BIOL 323	Cellular Biochemistry/Physiology Laboratory	
PHYS 107	Introduction to Physics I	4
or PHYS 101	Physics I	
PHYS 197	Introduction to Physics I Lab	0
or PHYS 191	Physics I Lab	
PHYS 108	Introduction to Physics II	4
or PHYS 102	Physics II	
PHYS 198	Introduction to Physics II Lab	0
or PHYS 192	Physics II Lab	
MATH 155	Calculus for the Life Sciences I	3
or MATH 185	Calculus I	
MATH 156	Calculus for the Life Sciences II	3
or MATH 186	Calculus II	

Students pursuing a career in Physical Therapy, Physician Assistant, and other selected fields may substitute Anatomy and Physiology for Organic Chemistry, with the approval of the Pre-Health Advisor. The substitutions would be as follows:

1. Anatomy and Physiology I (**BIOL 207. Anatomy and Physiology I; BIOL 209. Anatomy And Physiology Lab I**) may replace Organic Chemistry I (**CHEM 319. Organic Chemistry I; CHEM 323. Organic Chemistry Laboratory I**).
2. Anatomy and Physiology II (**BIOL 208. Anatomy and Physiology II; BIOL 210. Anatomy And Physiology Lab II**) may replace Organic Chemistry II (**CHEM 320. Organic Chemistry II; CHEM 324. Organic Chemistry Laboratory II**).

The above substitutions are not appropriate for Post-Graduate study in the Medicine, Dentistry, Podiatry, Optometry, and Veterinary fields.

The following substitution does not require approval: **MATH 230. Elementary Statistics** or **PSYC 214. Statistics and Research Methods I** may replace **MATH 156. Calculus II**.

For additional information on Pre-Health programs at Manhattan College please go to the Center for Graduate School and Fellowship Advisement

# Environmental Science

Yelda Hangun-Balkir, Ph.D.

Program Director

Environmental issues represent some of the most important challenges facing the planet in the 21<sup>st</sup> century. As the nation's focus on the environment continues to grow, there is an ever-increasing demand for environmental science jobs. If you're seeking a career in this field, you can look forward to a far more robust job market than graduates of many other disciplines according to the Bureau of Labor Statistics.

The goal of the Environmental Science program is to provide a foundation for understanding issues and solving problems involving our natural environment. It is an interdisciplinary science program that focuses on the state of the environment and serious environmental problems that the world faces. The program provides students with a strong science background focused on the environmental issues. Students will be expected to take a variety of courses in numerous departments. Through a series of academic courses and co-curricular activities, you will get hands-on experience and obtain the critical thinking and problem-solving skills necessary in order to solve the complex, interdisciplinary environmental problems facing the local community and society at large. The Environmental Sciences Program offers Bachelor of Science degree and a Bachelor of Arts degree in Environmental Sciences.

Our interdisciplinary science program is supported by a team of academic departments. Professors work closely with Environmental Sciences undergraduates as their study becomes more specialized. Such individual attention leads to fruitful partnerships when students become involved in research and other student-centered learning activities. Through coursework, projects and activities, you will develop scientific research, writing, and presentation skills.

## Individual Attention and Mentoring

Students will receive individual attention during their entire undergraduate career. Each student plans a course of study in close cooperation with a faculty advisor, and the student's progress is closely coordinated with developing interests. Undergraduates are strongly encouraged to pursue independent research as an essential part of their educational program.

## Career Choices

According to Bureau of Labor Statistics, employment of environmental scientists is projected to grow faster than the average for all occupations. You will be prepared to enter government, academic, private or non-profit careers or to continue your education in a variety of scientific disciplines. Graduates would be trained to work in fields including environmental consulting, laboratory or field research, environmental education, medical school, environmental law, engineering, toxicology and waste management.

## Bachelor of Science in Environmental Science

### First Year

Fall	Credits	Spring	Credits
ENSC 101		3 CHEM 102	3
CHEM 101		3 CHEM 104	1
CHEM 103		1 BIOL 112	4
BIOL 111		4 BIOL 114	0
BIOL 113		0 MATH 156 or 186	3
MATH 155 or 185		3 SCI 101	1
SCI 100		1 RELS 110	3
ENGL 110		3 ECON/POSC/SOC/PSYC	3
	18		18

### Second Year

Fall	Credits	Spring	Credits
BIOL 223		4 ENSC 201	3
CHEM 319		3 CHEM 335	3
CHEM 323		2 MATH 230 (or MATH 336)	3
SOC 250		3 CMPT 155	3
Modern Languages		3 PHIL 213 or LLRN 102	3
		Modern Languages	3
	15		18

### Third Year

Fall	Credits	Spring	Credits
ENSC 301		3 ENSC 302	4
CHEM 302		5 PHYS 108	4
PHYS 107		4 PHIL 150	3
Free Elective		3 RELS Catholic Studies	3
	15		14

### Fourth Year

Fall	Credits	Spring	Credits
Major Elective		3-4 Major Elective	3-4
Major Elective		3-4 Free Elective	6
RELS Contemporary Studies		3 MUSC 150 or ART 150	3
ECON/POSC/SOC/PSYC		3 ENGL 150	3
HIST 150		3 Research	1
	15-17		16-17

Total Credits: 129-132

## Electives

CHEM 309	Physical Chemistry I	3
CHEM 433	Biochemistry I	3
CHEM 435	Advanced Inorganic Chemistry	3
CHEM 111	Nanoscience I	3
CHEM 320	Organic Chemistry II	3
CHEM 323	Organic Chemistry Laboratory I	2
CHEM 333	Nanoscience II	4
BIOL 217	Genetics	4
BIOL 225	Microbiology	4
BIOL 231	Evolution	4
BIOL 305	Plant Biology	4
BIOL 320	Animal Physiology	4
ENGS 204	Environmental Engineering Principles I	3
ENVL 517	Environmental Law	3
SOC 350	Advanced Topics in Geographic Information Systems (GIS)	3
SOC 334	Sustainable Development	3
POSC 223	Environmental Politics	3
PHP 418	Introduction to Environmental Health	3
ENVG 510	Hazardous Waste Management	3
ENVG 506	Water and Wastewater Treatment Processes	3

## Bachelor of Arts in Environmental Science

### First Year

Fall	Credits	Spring	Credits
ENSC 101		3 CHEM 102	3
CHEM 101		3 CHEM 104	1
CHEM 103		1 BIOL 112	4
BIOL 111		4 BIOL 114	0
BIOL 113		0 MATH 156 or 186	3
MATH 155 or 185		3 SCI 101	1
SCI 100		1 RELS 110	3
ENGL 110		3	
	18		15

### Second Year

Fall	Credits	Spring	Credits
BIOL 223		4 ENSC 201	3
CHEM 319		3 MATH 230 (or MATH 336)	3
CHEM 323		2 CMPT 155	3
SOC 250		3 LLRN 102 or PHIL 213	3

Modern Languages	3 ECON/POSC/SOC/PSYC 150	3
	Modern Languages	3
	15	18
<b>Third Year</b>		
<b>Fall</b>	<b>Credits</b>	<b>Spring Credits</b>
ENSC 301	3	ENSC 302 4
CHEM 302	5	PHYS 108 4
PHYS 107	4	PHIL 150 3
Free Elective	3	RELS Catholic Studies 3
	15	14
<b>Fourth Year</b>		
<b>Fall</b>	<b>Credits</b>	<b>Spring Credits</b>
Major Elective	3-4	Major Elective 3-4
Two Free Electives	6	RELS Contemporary Global 3
ECON/POSC/SOC/PSYC 150	3	MUSC or ART 150 3
HIST 150	3	Free Elective 3
		ENGL 150 3
	15-16	15-16

Total Credits: 125-127

## Electives (15-18) will be the same as for the BS in Environmental Science major.

### Courses

#### **ENSC 101. Intro to Environmental Science. 3 Credits.**

The course will introduce the field of environmental science and examine the environment from a scientific viewpoint. We will explore the concept of sustainability and how it relates to us, contemporary environmental issues related to health and disease, pollution, water resources, nonrenewable and renewable energy sources and global climate change. The course promotes critical thinking, problem solving, scientific and environmental literacy.

#### **ENSC 201. Sustainable Science and Technology. 3 Credits.**

ENSC 201 is intended for undergraduate students in environmental science, environmental studies, and related disciplines. In this course, you will learn about the history and practice sustainable science and technology, focusing on understanding a scientific approach to addressing interconnected environmental, social, and economic issues. To better learn to evaluate these topics following preventative approach elements of toxicology and comprehensive assessment developments will be explored. Prerequisites for this course include ENSC 101, Introduction to Environmental Science, and CHEM 101, General Chemistry I course. Students will not only examine case studies, engage in discussion of readings, and work on a semester long project, but have an opportunity to tailor this work to their interest and major subject of study using open-access technologies.



**ENSC 301. Environmental Science I. 3 Credits.**

Throughout the semester, students will study the science of air, water, soil and anthropogenic activities of Earth. The course will be designed to provide students with an understanding of the sources, reactions, transport and fates of naturally occurring and man-made systems. Major pollutants and their effects upon the environment will be studied.

**ENSC 302. Environmental Science II. 4 Credits.**

This course is the continuation of Environmental Science I (ENSC 301). During this course students will study the chemistry of the water and soil, and how anthropogenic activities affect this chemistry on planet Earth. Specifically, we will examine the sources, reactions, transport, effects, and fates of chemical species in water, and soil environments, and the effects of technology thereon. Three lectures and one three-hour laboratory period per week. Pre-requisite: ENSC 301.

# School of Continuing & Professional Studies-General Information

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Steven Goss, Ed.D., Dean

## Historical Note

In 1973, the College established the School of Continuing and Professional Studies (SCPS) to provide skills development courses for lifelong learning. SCPS evolved into an undergraduate degree completion program in 1997. This program offered professional students an alternate pathway to achieving their baccalaureate degree. Since then, SCPS has expanded its academic portfolio to meet the changing needs of adult learners. In 2012, SCPS launched its first ever master's degree, the M.S. in Organizational Leadership. A year later, the school followed with a B.S. in Organizational Leadership, featuring concentrations in general leadership studies and allied health administration. In 2015, SCPS offered the organizational leadership master's online, making the degree the College's first 100% online program. In recent years, SCPS has dedicated itself to strengthening the College's programming for second language learners, establishing the Camino Program in 2017. This program, the first associate degree at the College, provides native Spanish-speaking students an opportunity to complete their degree while improving their English language proficiency. The school also offers support to second language students through its Intensive English Language Program (IELP), a non-credit program started in 2017 to serve prospective undergraduate students who qualify for admission to the College but need support to meet the English proficiency requirement. IELP is one of the many programs offered through the school's non-credit division. The SCPS Non-Credit Division started in 2018, offering various courses for working adults. The purpose of the non-credit program is to provide adult learners with skills that are necessary for career success in the 21st century. Our accelerated, hybrid, cohort-based programs have made SCPS the school of choice for thousands of employees from corporations such as Con Edison, UPS, the MTA, and NYPD. These professionals have turned to the School of Continuing and Professional Studies to prepare themselves for leadership positions that not only impact their current roles, but the roles they may seek in the future.

## Mission Statement

The mission of the School of Continuing and Professional Studies is to prepare nontraditional students for success in emerging global, corporate, or industrial environments. SCPS is committed to creating and offering programs designed to serve the non-traditional student population with a particular focus on advancing their professional careers and/or fulfilling academic goals. The School of Continuing and Professional Studies is dedicated to offering programs in convenient and flexible formats.

## Admissions Requirements

Applicants for any SCPS undergraduate program are required to provide the following:

- Official High School transcript or GED report and, if applicable, college transcripts. Sealed or official electronic copies of college transcripts should be sent directly to Manhattan College.
- Current resume demonstrating at least two years of professional experience or comparable competency after completing high school.
- Two letters of recommendation. Letters should be written by individuals who can write about your personal and professional qualities, such as a supervisor, colleague, teacher, clergy, or military personnel. In both letters your references should clearly explain their relationship to you.
- Written personal statement (minimum of 500 words) sharing your educational, professional, and personal goals and a description of how your professional and life experiences make you a good fit for this program. You should also provide examples of how your experiences outside of your education have prepared you to be a student in the Continuing and Professional Studies program.

## Professional Studies Communication Courses

### **PSCM 326. Inter-Cultural Communication. 3 Credits.**

This course will introduce students to the cultural factors that affect workplace and professional communication in a variety of settings. Students will learn to identify differences in cultural communication patterns. The course also covers strategies for dealing with cultural differences at the organizational, team and interpersonal levels. (Cr. 3).

### **PSCM 371. Visual Communications. 3 Credits.**

This course explores the principles and practices behind the clear and efficient transmission of visual information and data. It provides the foundation for how to communicate effectively through the use of presentation development, infographics, and best practices in visual communication to serve as visual leaders within the organization.

## Professional Studies Allied Health Courses

### **PSAH 393. Hospital Organization & Management. 3 Credits.**

This course teaches concepts vital to organizational success, with applications to the health care industry. We cover: -Principles of planning, organization, control, motivation, directing, management in a very regulated environment. -Systems theory, goal setting, and goal achievement. -Group formation and guidance. -Departmentalization, delegation, and hospital governance. -Group management, informal and formal managers. -Leadership theory and one-way, two-way and diagonal communication. -Corporate cultural and organizational development. (Cr. 3).

**PSAH 395. The US Health Care System. 3 Credits.**

This course surveys the 21st Century health care system and forecasts possible futures for it. The class covers the following: History of US health care from 1850-2013 with emphasis on the recent past and future; the impact of managed care; what caused it, what are its strengths and weaknesses, how it has and is evolving; monopsony-fueled recent and near-future changes in delivery systems structure, reimbursement, delivery of care and career opportunities; how long-term and chronic care is changing, the impact of the boomer generation and the future shortage of funds to pay for this care; how medical crises are created by medical providers. The impact of pharmaceutical manufacturers of crises and pseudo-crises; the needs of special populations, e.g. homeless, and the sprawling growth of ambulatory health provisions; and the development of quality assurance from its health care start in the 1980s to present day. (Cr.3).

**Professional Studies Economics Courses****PSEC 231. Economics. 3 Credits.**

This module focuses upon the principles of economics as they need to be understood and used by managers and supervisors in all fields. In this era of 'downsizing' or 'rightsizing' brought on by international competition and globalization of every part of our American way of life, it is crucial that managers at every level understand and use the principles of economics to aid them in making sound decisions.

**Professional Studies Elective Courses****PSEE 101. Adult Development. 3 Credits.**

This module introduces adult learners to adult development theory and links these concepts to life through a process of individual reflection. Both classical and contemporary adult development theories are examined. These theories then provide the paradigm for self-analysis and life assessment.

**PSEE 141. The Psychology of Motivation and Leadership. 3 Credits.**

This course will explore issues which have been identified by research as impacting workplace motivation. It will introduce an approach to managing which has been found to enhance intrinsic motivation in employees. Readings and discussions will focus on creative strategies for intrinsic and extrinsic motivation.

**PSEE 201. Introduction to Computer Programming. 3 Credits.**

An introductory course in programming and computer science. Students will be introduced to the basics of hardware and software and will learn to develop computational logic. Students will build programming skills by writing codes using the Python programming language.

**PSEE 207. Public Speaking. 3 Credits.**

This course treats the issues, problems, and techniques in effective public speaking. Students will emerge with a heightened sense of self and a greater confidence in their own ability to communicate to others in business and social situations. The course will focus on how to organize ideas, how to make a speech, examples of good communication and bad communication, poor listening and good listening skills, protection of self, shyness, how to jog your memory and how to feel more secure and in command at business meetings.

**PSEE 233. Resiliency Development in the Workplace. 3 Credits.**

This course teaches students how to select the correct response when managing life's challenges. It also covers techniques for building stamina when faced with stressful situations. Attitude and behavior as well as physical and emotional health are assessed and explored while finding approaches to properly manage daily and event driven stress.

**PSEE 236. Essential Finance Skills for Emerging Leaders. 3 Credits.**

This course is an introduction to the major financial concepts, principles, and analytical tools of corporate finance. The course covers financial statement analysis, forecasting, the risk/return tradeoff, the time value of money concept, valuation, the cost of capital, and the capital budgeting process. The course assists students in understanding how to utilize these concepts, principles, and techniques so that they can make well-reasoned decisions.

**PSEE 238. Personal Finance. 3 Credits.**

Students explore personal financial planning, banking, consumer credit, explore housing alternatives, mortgages and sale of a home; discuss types and insurance and risk management; investment fundamentals, the range of investment vehicles, estate planning and retirement planning.

**PSEE 239. Essential Accounting Skills for Emerging Leaders. 3 Credits.**

This course covers activity-based costing, budgeting, flexible budgeting, cost-volume-profit analysis, cost estimating, and the costs of outsourcing. Students are also introduced to topics including standard costing, variance analysis, responsibility accounting, and performance evaluation. There is also some focus on cost terminology (the wide variety of costs), cost behavior, cost systems, and the limitations concerning the use of average costs. This course teaches students how to extract and modify costs in order to make informed decisions.

**PSEE 246. Managerial Marketing. 3 Credits.**

Through assigned readings, case studies, Web-site connections, class discussion, writing assignments and the team project, adult learners will be exposed to basic marketing theory and terminology. They will be given the opportunity to apply these principles and concepts to real world, domestic and international situations. This exploration provides adult learners with an appreciation of the role of marketing in organizational strategic planning; an awareness of how customer behavior and decision data are collected and analyzed in the marketing planning process; and the confidence to participate with other organizational members to 'connect with customers' in a variety of effective and meaningful ways.

**PSEE 291. Career Development. 3 Credits.**

The fast paced and ever-changing global environment demands the working individual to understand and adapt to numerous challenges in planning a successful career path within their present or future organization. Topics to be considered will be dual career issues, emotional intelligence, balance of professional and personal life, building a network, career development skills, assessment, and midlife career change.

**PSEE 300. Emotional Intelligence. 3 Credits.**

This course explores the role of emotional intelligence within the organizational setting. This course provides tools and theories to apply emotional intelligence to be an effective leader in today's organizations. This course affords students the strategies for emotion management and empathy development.

**PSEE 360. The History of Art. 3 Credits.**

In this course, students will study the art and architecture of the Western World. They will develop an understanding of basic aesthetic principles and an appreciation of the great works upon which modern culture is built. Through reading, discussion, and presentations in class by the teacher and students themselves, they will develop a basic understanding of art and architecture, an important foundation upon which they will build on in their future interactions with art here in New York City and on future vacations.

**PSEE 370. The History and Culture of Modern China. 3 Credits.**

This course attempts to introduce students to the basic elements of Chinese history and culture from 1900 until the present. This includes philosophy, religion, economics, science and technology, art, literature, and sociology. Certain key elements of early Chinese history and thought will also be included.

**PSEE 402. Public Policy. 3 Credits.**

Contemporary society is in the middle of a dynamic environment. This course examines the interrelated actions of business, government and society and how the needs of each are satisfied, or hope to be satisfied. We look at the role and importance of business and society, the ethics of business, how globalization presents challenges for business and how government influences business through the legal system and how corporations influence government. Also we examine the effects of business on the natural environment, how technology has changed business organizations and the business and its various stakeholders. Using various media, we apply the principles of this course to real-world examples. 3 credits.

**PSEE 403. Workplace Dispute Resolution. 3 Credits.**

An overview and practicum on the process of mediation. This course will outline the background of conflict resolution and the origins of alternative dispute resolution systems. The course will cover the concepts underlying mediation, present the structure of a mediation, practice mediating conflicts plus analyze the skills needed and challenges faced during mediation. 3 credits.

## **Professional Studies English Courses**

**PSEG 106. Introduction to Composition. 3 Credits.**

This course includes a basic review of grammar and practice exercises to improve and develop your writing skills. It is geared to upgrade your writing through use of academic language, accuracy, and creativity. The focus will be on a response to literature, research writing, and practice with the descriptive, narrative, expository, and persuasive essays.

**PSEG 110. Foundations for Professional Writing. 3 Credits.**

This module is an intensive writing workshop with occasional lectures by the facilitator. Students are expected to complete a variety of writing exercises and assignments, both in class and as homework, by compiling a portfolio of work to be submitted at the completion of the module. The aim is for students to write fluent, logical, and grammatically correct Standard English.

**PSEG 111. First Year Composition. 3 Credits.**

PSEG 111 is designed to assist students in developing the habits of writing, reading, and critical thinking needed for composing effectively within the academic community. The goal is to increase student understanding the writing process and provide a set of rhetorical strategies to fulfill assigned tasks. Review of grammar and research methods is included.

**PSEG 226. Organizational Communication. 3 Credits.**

This course investigates the role of communication in creating a productive organizational environment. It aids adult learners in developing and strengthening their communication skills focusing on interpersonal, group and presentation skills.

## **Professional Studies Environmental Studies Courses**

**PSEV 490. Environmental Issues. 3 Credits.**

This course will explore the significant environmental issues facing the nation and the world today and the search for solutions. The adult learner will investigate issues in Global Climate Change, Energy, Human Population, Air Pollution, and Sustainability and Protection of the Environment. Ethical issues will be discussed throughout the course as well as selected environmental science foundations to support intelligent discussion of the issues. Learning activities includes viewing videos, 'taking sides' discussions on various environmental issues, and performing 'labs'. A course paper will be required.

## **Professional Studies Law Courses**

**PSLW 365. Legal Aspects & Analysis of the Organization. 3 Credits.**

This module provides a general overview of the Business Law system including the Constitution, laws, regulations, case studies, common law, treaties and the interplay between Federal and state systems. Particular emphasis is placed upon contracts, agency, torts, professional liability, products liability, intellectual property, cyberlaw, business litigation, partnerships and corporations.

## **Professional Studies Leadership Studies Courses**

**PSLS 102. Theories and Reflection of the Adult Learner. 3 Credits.**

This foundational course is designed to build and/or enhance the requisite skills needed for academic success. Students will identify their individual learning styles and devise strategies for maximizing their effectiveness. The course also introduces students to theories on adult and career development.

**PSLS 111. Organizational Change. 3 Credits.**

Adult learners examine the formal and informal functions of organizational and analyze an agency or organization based on a systems model. Students will also analyze and solve organizational problems using a step-by-step method. This analysis will be applied to adult learners' work related Research projects.

**PSLS 151. Conflict Management in Complex Adaptive Systems. 3 Credits.**

This course will explore what conflict is and how it is identified. Understanding the reactions to and the behaviors of conflict will allow the student to explore strategic options to better manage their own conflict as well as those who work with or for them. This course will help the adult learner understand what a conflict competent organization with a working action plan. The course will utilize research, inquiries, videos and case studies to help the student apply the principles of a conflict competent leader.

**PSLS 195. Math Concepts for the Organizational Leader. 3 Credits.**

This course is a general overview of mathematical concepts used in quantitative reasoning. This course places quantitative skills and reasoning in the context of experiences that students will be likely to encounter. It emphasizes processing information in context from a variety of representations, understanding of both the information and the processing, and understanding which conclusions can be reasonably determined. Topics include the mathematics of elections, network theory, population growth models, financial mathematics, statistics and probability. This class meet once a week for four hours. Much of the course work, including discussions and assignments, are to be completed online and can be found on Moodle, <https://lms.manhattan.edu>.

**PSLS 275. Teams & Group Dynamics. 3 Credits.**

This module is a study of group behavior and how group functioning affects organizational effectiveness. Emphasis is placed on decision-making and conflict resolution. Adult learners develop strategies for efficient and productive group management and determine which tasks are handled by groups or by individuals.

**PSLS 280. Capstone Refresher. 1 Credit.**

Capstone Refresher will allow students who have re-matriculated to Manhattan College review and re-strategize any work completed in PSLS 287 or PSLS 285. This course is only for students who have completed PSLS 287 or PSLS 285 over 2 or more years.

**PSLS 287. Capstone Preparation Seminar. 1 Credit.**

The thesis is a major research effort designed to enhance knowledge in an area related to one's professional work. This in-depth seminar prepares students for research and execution of the final thesis. Among the topics covered are best practices in research, effective use of the library and databases, crafting, a useful thesis outline and draft guidelines.

**PSLS 300. Special Topic. 3 Credits.**

An Introduction to a topic, theme or issue related to leadership. The subject will vary from semester to semester. (Cr. 3).

**PSLS 351. Organizational Leadership. 3 Credits.**

Adult learners examine major leadership theories and research and explore their application to individual and group functioning in work and home settings. Leadership styles are covered through readings and class practice.

**PSLS 368. Leadership & Literature. 3 Credits.**

Through intense discussion each work of literature will be examined; particular attention will be given to issues which resonate with the modern-day business world and the leadership it demands. Students are expected to complete a weekly two-page typewritten reaction paper along with the formulation of questions for class discussion. A final paper will be assigned.



**PSLS 375. Organizational Ethics. 3 Credits.**

This module begins by assisting students in discovering and articulating who they are and what they believe by reviewing several religious traditions, philosophical thinkers and scientific theorists. In addition, the module adds the theory of business ethics, social responsibility, and an ethical decision-making framework. Within the context of domestic and international case studies, students analyze complex issues, apply principles, and view alternative approaches and perspectives.

**PSLS 386. Capstone Project Proposal. 1 Credit.**

This seminar is designed to provide a hands-on experience in research outlining and draft writing that will conclude with students submitting a Capstone Project proposal. The seminar will also provide students with a refresher on research and data collection essentials. 1 cr.

**PSLS 387. Research Project III. 0 Credits.**

Students will complete their and make an oral presentation.

**PSLS 399. Independent Research. 1-3 Credit.**

Individual study and/or research under faculty supervision. Repeatable.

**PSLS 401. Social Psychology of the Workplace. 3 Credits.**

This module presents an analysis of major contemporary social problems. Particular attention is given to the problems of poverty, racism, sexism, drug and alcohol abuse, and illiteracy and their impact on the contemporary workplace. Consideration is given to diverse sociological perspectives regarding the causes, consequences, and solutions to these problems.

**PSLS 407. Introduction to Management and Sustainable Development for Organizational Leaders. 3 Credits.**

This course is offered and delivered in an international setting, providing an introduction of development and management concepts, and the appropriate leadership skills needed in a worldwide context. The course covers strategies for dealing with cultural difference at the organizational, team, and interpersonal levels and introduces students to various management planning models and techniques.

**PSLS 450. Strategic Planning. 3 Credits.**

This module introduces students to various management planning models and techniques and applies these to business cases. It stresses the concepts of business planning and strategic management.

**PSLS 485. Research Project IIIA. 0 Credits.**

Students will complete their thesis and make an oral presentation.

**PSLS 487. Capstone Presentation. 1 Credit.**

The Capstone Project is a major research effort designed to enhance knowledge in an area related to one's professional work. This course is the culmination of a final oral presentation in class and the submission of the final written thesis. Pre-requisite: All core courses must be completed.

## Professional Studies Math Courses

### **PSMT 195. Modern Mathematics for the Organizational Leader. 3 Credits.**

This course is a general overview of mathematical concepts used in quantitative reasoning. This course places quantitative skills and reasoning in the context of experiences that students will be likely to encounter. It emphasizes processing information in context from a variety of interpretations, understanding of both the information and the processing, and understanding which conclusions can be reasonably determined. (Cr. 3).

### **PSMT 221. Statistical Research Methods. 3 Credits.**

This module is an introduction to research and its tools for the adult learner as both a consumer and producer of statistics and research. Specific emphasis is placed upon helping students to complete the Research Project and understand managerial decision-making.

## Professional Studies Psychology Courses

### **PSPY 249. Industrial Psychology. 3 Credits.**

This module is an exploration of the values and perceptions of selected groups affecting social and economic life through an analysis of policies and procedures relating to recruitment, selection, training, development, and compensation of employees.

### **PSPY 280. General Psychology. 3 Credits.**

A survey course that explores the theoretical perspectives and research methods employed in the scientific study of behavior and mental process. Particular attention is given to learning, memory, motivation, emotion, and human development.

### **PSPY 316. Ten Theories of Human Nature. 3 Credits.**

A course to help students understand how humanity has struggled to comprehend its nature by exploring the ideas of major philosophies and thinkers from ancient eastern traditions to theories of modern psychology. Students will critically examine each theory on four points - the nature of the universe, the nature of humanity, the ills of humanity, and the proposed cure for these ills. Participants will consider who we are, what motivates us, and how we can understand and improve the world.

### **PSPY 381. Applied Psychology for Managers. 3 Credits.**

Topic outline for this course includes: adjusting to modern life; theories of personality; stress and its effects; coping processes; social thinking and social influence; interpersonal communication; careers and work; psychology and physical health; the self; friendship and love; marriage and intimate relationships.

## Professional Studies Religion Courses

### **PSRL 217. Religions in the Workplace. 3 Credits.**

This course is an examination of major world religions and their impact in the modern workplace. In addition to studying the differing world views, beliefs, rituals and customs of different religions, this course will focus on how these differing Weltanschauungs affect the workplace in the 21st century, both on the international level in the global village and on the local level in our pluralistic, multicultural society.

**PSRL 274. Religion & Social Justice. 3 Credits.**

A study of the role of Catholic social movements in the economic, political, and cultural life of New York as interpreted through biblical insight and Roman Catholic social teaching. Topics include charities, the Catholic Worker, labor issues, Wall Street, inner-city churches, and the United Nations.

**PSRL 379. Religion and Popular Culture. 3 Credits.**

A general or topic-specific examination of the influences of popular culture or religion as well as of the religious dimensions of contemporary literary, musical, visual, and/or other prevalent social practices.

## **Professional Studies Science Courses**

**PSSC 300. Social Development Through Leadership. 3 Credits.**

This course investigates different sociological approaches of leadership within an international scope. Theoretical concepts will be examined and applied in a selected setting, treating government and non-government perspectives. The course will draw a connection between key leaders and the role they play in a sustainable development process. The goal is to understand the connection between global structures and local cultures responses. Attention will be devoted to a wide variety of social reactions ranging from inclusive (cultural diversity) to exclusive (nativism) responses.

**PSSC 344. Fundamentals in Human Nutrition. 3 Credits.**

This course is a dynamic overview of the relationship between human physiology, diet, and wellness. Following discussions of nutrient quality, food labels, and research techniques, carbohydrates, lipids and proteins are studied as fuels and components of bodily structure and function. Study of digestion, absorption, and regulation of metabolic pathways elucidates the relationship between dietary intake and consequent outcomes of healthy vs. unhealthy bodies. Finally choices and balance of dietary components are explored in relation to physiological pathways which lead to conditions like poor blood sugar control, hypercholesterolemia, obesity, and poor bone development.

**PSSC 394. Everyday Biology. 3 Credits.**

This course is an introduction to the foundational principles and uses of biology in present-day life. The course relates biology to health, chronic diseases, medicinal plants among other every day elements in the environment.

## **Professional Studies Spanish Courses**

**PSSP 101. Spanish I. 3 Credits.**

An introduction to the four basic skills with emphasis on speaking and comprehending spoken Spanish. The course also provides an introduction to the culture of Spanish-speaking peoples. For students with little or no background in Spanish or with only one year of high school Spanish.

# Allied Health

Steven Goss, Ed.D., Dean

## Vision Statement

As a concentration in organizational leadership, the B.S. in Allied Health and Healthcare Leadership (BSAH) provides adult learners the opportunity to complete an undergraduate degree in coursework for science-based administrative positions required of today's health professionals. The BSAH concentration is taught in a hybrid format that is flexible and conducive for working professionals. It is our goal to supply regional healthcare employers with competently trained administrators.

## Undergraduate Curriculum

Successful completion of this program requires that students earn a total of 126 credits. The curriculum consists of a combination of general education and allied health courses. The remaining credits may be earned through transfer (including CLEP) and/or elective courses.

## Advisement

Students will be assigned an academic advisor upon entry into the program. The academic advisor will meet with each assigned student three times annually: fall, spring, and summer. The advisor will assist students with their academic planning towards degree completion. Students will also be assigned an advisor to assist with their capstone project. The capstone advisor will guide the student through the capstone process as well as be available for one-on-one meetings.

## Program Learning Goals

*By the completion of the program, students will:*

- Evaluate the structure and needs of the U.S. healthcare system including the organization and management of American hospitals
- Demonstrate appropriate competency in oral and written communication and presentation skills
- Conduct research, drawing on and documenting a variety of sources deemed appropriate for academic work and synthesize findings in a coherent way
- Analyze the social, legal, and economic aspects of a problem/situation in order to devise an appropriate strategy for problem solving
- Develop skills to identify and coordinate ethical organizational behavior within the healthcare system
- Apply managerial accounting and finance skills to healthcare-related tasks and initiatives

## Allied Health Courses

### I. General Education (36-38 credits)

PSEG 110	Foundations for Professional Writing	3
PSEG 226	Organizational Communications	3
PSPY 280	General Psychology	3
PSCM 371	Visual Communications	3
PSLS 375	Organizational Ethics	3

### Mathematics

PSMT 221	Statistical Research Methods	3
PSMT 195	Math for the Organization Leader	3

### Science

BIOL 207	Anatomy & Physiology I	4
BIOL 208	Anatomy & Physiology II	4

### Religion Studies

PSRL 217	Religion in the Workplace	3
PSRL 379	Religion and Popular Culture	3
PSRL 274	Religion and Social Justice	3

### II. Courses in Allied Health Courses (27 Credits)

PSAH 393	Hospital Organization & Management	3
PSLS 351	Organizational Leadership	3
PSAH 395	U.S. Health Care System	3
PSEE 236	Managerial Finance	3
PSEE 239	Managerial Accounting	3
PSPY 249	Industrial Psychology	3
PSPY 381	Applied Psychology for Supervisors & Managers	3
PSLS 450	Strategic Planning	3
PSLW 365	Legal Aspects	3

### III. Open Electives (63 Credits)

<b>Total Credits</b>	<b>126</b>
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*Courses may be reviewed as transferred credits. Upon matriculation students are able to transfer 63 credits towards their Bachelor's degree after assessment from the Assistant Dean.*

## BSAH Academic Plan at a Glance

<b>First Year: Semester One</b>	<b>Credits</b>
PSEG 110	3
PSEG 226	3
PSRL 217	3
PSLS 375	3
<b>First Year: Semester Two</b>	<b>Credits</b>
PSMT 195	3
PSRL 274	3
PSAH 393	3
PSLS 351	3
<b>First Year: Semester Three</b>	<b>Credits</b>
Open Elective	3
Open Elective	3
Open Elective	3
Open Elective	3
<b>Second Year: Semester One</b>	<b>Credits</b>
PSPY 280	3
PSRL 379	3
PSAH 395	3
PSCM 371	3
<b>Second Year: Semester Two</b>	<b>Credits</b>
PSMT 231	3
BIOL 207	4
PSEE 236	3
PSPY 249	3
<b>Second Year: Semester Three</b>	<b>Credits</b>
Open Elective	3
Open Elective	3
Open Elective	3
Open Elective	3
<b>Third Year: Semester One</b>	<b>Credits</b>
BIOL 208	4
PSEE 239	3
PSPY 381	3
Open Elective	3
Open Elective	3
<b>Third Year: Semester Two</b>	<b>Credits</b>
Open Elective	3
Open Elective	3
PSLS450	3

PSLW 365	3
<b>Third Year: Semester Three</b>	<b>Credits</b>
Open Elective	3
Open Elective	3
Open Elective	3
Open Elective	3
<b>Fourth Year: Semester One</b>	<b>Credits</b>
Open Elective	3
Open Elective	3
Open Elective	3
Open Elective	3
Open Elective	3
<b>Total number of credits: 126</b>	
<b>Total number of credits to complete through Allied Health program: 63</b>	

*Additional 63 credits can be reviewed as transfer credits. Transfer credits are approved by the Assistant Dean and the Dean of School of Continuing & Professional Studies.*

# Camino Program

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Pamela A. Jimenez, Ed.D., Program Director

## Program Details

The Camino Program at Manhattan College is a two-year associate degree program in general studies designed to provide academic support and resources to native Spanish-speaking students. Students in this program reinforce their English skills while acquiring a degree. Students benefit from tutoring, study groups, and academic counseling to help them succeed at Manhattan College.

Camino students follow a 15-week semester. See the undergraduate calendar.

Upon successfully graduating with an associate degree, student have the opportunity to transfer into a bachelor's degree program at Manhattan College.

## Financial Aid

Camino students receive assistance in applying for federal and state aid to study in the Camino Program. In most cases, students who are eligible for full aid will study in the program tuition-free.

Students not eligible for full federal and state aid may need to apply for a loan and establish a payment plan with the College to meet tuition and fee costs.

## Program Goals

- Develop English language proficiency in both written and oral communication
- Gain the ability to work effectively in with groups and independently
- Conduct research, drawing on and documenting a variety of academic sources and synthesize findings in a coherent and organized manner
- Evaluate the impact of multicultural, religious and ethical perspectives in decision-making
- Identify and evaluate the social aspects of workplace issues and utilize problem-solving skills.

## Mission Statement

The mission of the Camino Program is to provide native Spanish-speaking students with an associate degree while improving their oral and written English language proficiency. The program is committed to providing a curriculum inspired by the Lasallian core principles of quality education, social justice, leadership, and equity. The program will achieve this by collaborating with diverse faculty, administrators, and staff who not only reflect the student body composition but are committed to justice for diverse students and communities.

## Advisement

As part of our commitment to Camino students, everyone is assigned an advisor upon entering the program. The program adapts the 'intrusive advising' model. The model



follows an action-oriented robust, year-round schedule that includes academic support, emotional and motivational counseling, employment counseling, and transfer guidance.

## Transfer Policy

Camino graduates may stay at the college to obtain their bachelor's degree or continue at another four-year college after graduation. We will assist the student with the transfer process. Please see below for the Camino transfer credit options:

School	Credits towards major	Credits remaining	Semesters Remaining
School of Continuing and Professional Studies	60	60	4
School of Liberal Arts	54-57	63-67	4
School of Liberal Arts - Communications	33	87	6
School of Education and Health	24-42	88-105	6-7
School of Science	24-49	85-109	6-7
School of Engineering	24-27	104-108	7
School of Business	45	75	7

## Camino Curriculum

### First Year

Fall	Credits	Spring	Credits
PSEG 106		3 PSRL 217	3
PSEE 141		3 PSLS 401	3
PSEG 226		3 PSEE 207	3
PSPY 280		3 PSCM 326	3
	12		12

### Second Year

Fall	Credits	Spring	Credits
PSRL 274		3 PSRL 379	3
PSLS 275		3 PSEE 360	3
PSEG 110		3 PSMT 195	3
PSEE 201		3 PSLS 368	3
	12		12

### Third Year

Fall	Credits
PSLS 375	3
PSEV 490	3
Elective	3

Elective	3
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	12
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Total Credits: 60

# Organizational Leadership

Steven Goss, Ed.D., Dean

## Vision Statement

The B.S. in Organizational Leadership (BSOL) provides adult learners the opportunity to study theories and concepts related to human psychology, communication, ethics, and business management. The BSOL undergraduate degree fosters students' skills and abilities in interpersonal development and effective leadership. Students in this degree complete their coursework in a hybrid format that is flexible and conducive for working professionals. It is our goal to graduate students with a strong sense of self-confidence and ability to effectively manage their careers and further academic pursuits.

## Undergraduate Curriculum

Successful completion of this program requires that students to earn a total of 120 credits. The curriculum for organizational leadership consists of a combination of general education and courses in the major. The remaining credits may be earned through transfer (including CLEP) and/or elective courses.

## Advisement

Students will be assigned an academic advisor upon entry into the program. The academic advisor will meet with each assigned student three times annually: fall, spring, and summer. The advisor will assist students with their academic planning towards degree completion. Students will also be assigned an advisor to assist with their capstone project. The capstone advisor will guide the student through the capstone process as well as be available for one-on-one meetings.

## Program Learning Goals

*By the completion of the program, students will:*

- Demonstrate appropriate competency in oral and written communication and presentation skills
- Work effectively in small and large group settings
- Conduct research, drawing on and documenting a variety of sources deemed appropriate for academic work and synthesize findings in a coherent way
- Apply theories and concepts of effective leadership
- Evaluate the impact of multicultural, ethical, and environmental perspectives in decision making
- Analyze the social, legal, and economic aspects of a problem/ situation in order to devise an appropriate strategy for problem-solving

## Organizational Leadership Courses (B.S.)

### I. General Education (45 credits)

PSEG 110	Foundations for Professional Writing	3
PSRL 217	Religions in the Workplace	3
PSLS 368	Leadership & Literature	3
Humanities Elective		3
2 Religious Studies Electives		6
PSMT 221	Statistical Research Methods	3
Math Elective		3
PSEV 490	Environmental Issues	3
Science Elective		3
PSEC 231	Economics	3
PSPY 249	Industrial Psychology	3
PSLW 365	Legal Aspects & Analysis of the Organization	3
PSEG 226	Organizational Communication	3
Social Science Elective		3
Total Credits		45

### II. Liberal Arts & Sciences Electives (15 Credits)

PSPY 280	General Psychology (Social Science Elective)	3
PSPY 381	Applied Psychology for Managers (Social Science Elective)	3
PSPY 316	Ten Theories of Human Nature (Social Science Elective)	3
PSEE 233	Resiliency Development in the Workplace	3
PSEE 141	The Psychology of Motivation and Leadership (Social Science Electives)	3
PSEE 207	Public Speaking (Social Science Elective)	3
PSEE 101	Adult Development (Social Science Elective)	3
PSEE 291	Career Development (Social Science Elective)	3
PSSP 101	Spanish I (Humanities Elective)	3
PSRL 274	Religion & Social Justice (Religion Elective)	3
PSRL 379	Religion and Popular Culture (Religion Elective)	3
PSEE 360	The History of Art (Humanities Elective)	3
PSEE 370	The History and Culture of Modern China (Humanities Elective)	3
PSSC 344	Fundamentals in Human Nutrition (Science Elective)	3
PSSC 394	Everyday Biology (Science Elective)	3
PSMT 195	Modern Mathematics for the Organizational Leader (Mathematics Elective)	3

*Liberal arts and sciences comprise the disciplines of the humanities, natural science, mathematics, and social science.*

**III. Courses in Organizational Leadership (33 Credits)**

PSLS 102	Theories and Reflection of the Adult Learner	3
PSLS 111	Organizational Change	3
PSLS 151	Conflict Management in Complex Adaptive Systems	3
PSCM 371	Visual Communications	3
PSLS 275	Teams & Group Dynamics	3
PSCM 326	Inter-Cultural Communication	3
PSLS 287	Capstone Preparation Seminar	1
PSLS 351	Organizational Leadership	3
PSLS 375	Organizational Ethics	3
PSLS 386	Capstone Project Proposal	1
PSLS 401	Social Psychology of the Workplace	3
PSLS 450	Strategic Planning	3
PSLS 487	Capstone Presentation	1
Total Credits		33

**IV. Open Electives (27 Credits)**

*Students may fulfill elective requirement by taking courses offered by the School or as transferred course credits.*

**Total Credits required to graduate: 120**

**BSOL Academic Plan at a Glance**

First Year	Credits
PSLS 102	3
PSEG 110	3
PSLS 151	3
PSLS 275	3
PSCM 371	3
PSEG 226	3
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	18
Second Year	Credits
PSLS 287	1
PSLS 111	3
PSLS 351	3
PSLS 375	3
PSEC 231	3
PSLS 401	3

PSLW 365	3
<hr/>	
	19
<b>Third Year</b>	<b>Credits</b>
PSLS 386	1
PSRL 217	3
PSMT 221	3
PSCM 326	3
PSPY 249	3
PSEV 490	3
PSLS 368	3
PSLS 450	3
PSLS 487	1
<hr/>	
	23

Total Credits: 60

*Upon matriculation students are able to transfer 60 credits towards their Bachelor's degree after assessment from the Assistant Dean.*

# SCPS Undergraduate Calendar\*

## 2020 Summer Semester

Month	Date	Day	Event
May	04	Monday	Summer 2019 Begins - Term I
May	04	Monday	Drop Period Opens - Term I
May	10	Sunday	Drop Period Closes - Term I
May	11	Monday	Course Withdrawal Opens - Term I
June	14	Sunday	Course Withdrawal Closes - Term I
June	21	Sunday	Last day of classes - Term I
June	22-28	Mon-Sun	Finals Week - Term I
June	29	Monday	Summer 2020 - Term II Begins
June	29	Monday	Drop Period Opens - Term II
July	05	Sunday	Drop Period Closes - Term II
July	06	Monday	Web Registration begins for Fall 2020
July	06	Monday	Course Withdrawal Opens - Term II
August	09	Sunday	Course Withdrawal Closes- Term II
August	16	Sunday	Last day of classes - Term II
August	17-23	Mon-Sun	Finals Week - Term II

## 2020 Fall Semester

Month	Date	Day	Event
August	31	Monday	Fall 2020 Semester Term I Begins
August	31	Monday	Drop Period Opens - Term I
September	06	Sunday	Drop Period Closes - Term I
September	07	Monday	Course Withdrawal Opens - Term I
October	11	Sunday	Course Withdrawal Closes - Term I
October	18	Sunday	Last day of classes - Term I
October	19-25	Mon-Sun	Finals Week - Term I
October	26	Monday	Fall 2020 Semester Term II Begins
October	26	Monday	Drop Period Opens - Term II
October	27	Sunday	Drop Period Closes - Term II
November	02	Monday	Course Withdrawal Opens - Term II
November	02	Monday	Web Registration Begins for Spring 2021
December	06	Sunday	Course Withdrawal Closes- Term II
December	13	Sunday	Last day of classes - Term II
December	14-20	Mon-Sun	Finals Week - Term II

## 2021 Winter Session

Month	Date	Day	Event
December	21	Monday	Winter Session Begins
January	15	Friday	Winter Session Ends

## 2021 Spring Semester

Month	Date	Day	Event
January	18	Monday	Spring 2021 Term I Begins
January	18	Monday	Drop Period Opens - Term I
January	24	Sunday	Drop Period Closes - Term I
January	25	Monday	Course Withdrawal Opens - Term I
February	28	Sunday	Course Withdrawal Closes- Term I
March	07	Sunday	Last day of classes - Term I
March	08-14	Mon-Sun	Finals Week - Term I
March	15	Monday	Spring 2021 Term II Begins
March	15	Monday	Drop Period Opens - Term II
March	21	Sunday	Drop Period Closes - Term II
March	22	Monday	Course Withdrawal Opens- Term II
April	06	Tuesday	Web Registration begins for Summer 2021
April	25	Sunday	Course Withdrawal Closes- Term II
May	02	Sunday	Last day of classes - Term II
May	03-09	Mon-Sun	Finals Week - Term II

## 2021 Summer Semester

Month	Date	Day	Event
May	10	Monday	Summer 2021 begins - Term I
May	16	Sunday	Add/Drop Ends Summer - Term I
May	17	Monday	Withdrawal begins - Term I
June	20	Sunday	Last day to withdraw from courses - Term I
June	27	Sunday	Last day of Classes - Term I
June-July	28-04	Mon-Sun	Finals Week - Term I
July	05	Monday	Summer 2021 - Term II begins
July	06	Tuesday	Web Registration begins for Fall 2021
July	11	Sunday	Add/Drop ends - Session II
July	12	Monday	Withdrawal begins - Term II
August	15	Sunday	Last day to withdraw from courses - Term II
August	22	Sunday	Last Day of Classes - Term II
August	23-29	Mon-Sun	Finals Week - Term II

\*Manhattan College reserves the right to make changes as circumstances require.



**REFUND OF TUITION**

- During the 1st Week of class - 100% refunded (Drop)*
- During the 2nd Week of class - 70% refunded (Withdrawal)*
- During the 3rd Week of class - 30% refunded (Withdrawal)*
- Thereafter withdrawal - 100% liable*

# Academic Support & Resources

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Department of Air & Space Studies (DAAS)

Center for Academic Success

Center for Career Development

Center for Graduate School & Fellowship Advisement

O'Malley Library

Specialized Resource Center

Study Abroad Opportunities

# DAAS

## Department of Air & Space Studies (DAAS) aka AFROTC

### About Air Force ROTC

Air Force Reserve Officer Training Corps (ROTC) is conducted at over 1000 colleges and universities throughout the United States in order to select and train men and women to become commissioned officers in the U.S. Air Force and U. S. Space Force. Most graduates who enter the Air Force or Space Force through ROTC are assigned positions consistent with their academic major. Others, who wish to do so, may qualify to become pilots and navigators. Men and women who complete graduation requirements for their major and ROTC, receive a commission as an active duty second lieutenants in the U.S. Air and Space Force. Additionally, officers who qualify may do graduate studies prior to beginning their military duties. While Air Force ROTC is taught at Manhattan College in Riverdale, it is available to many students attending college in the Greater New York area at qualified consortium locations.

### Air Force ROTC Course Content

The Department of Air and Space Studies offers 3- and 4-year programs to students. The course content consists of two parts: (1) academic class and (2) leadership lab class (LLAB). The academic classes are completed with the student's peer group (ex. freshman, sophomore, junior, senior); all lower division courses are one credit hour and upper division courses are three credit hours. The LLAB portion brings all four year groups together where students practice a wide array of activities to enhance leadership skills (ex. drill and ceremonies, group leadership projects, and physical fitness). LLAB is 1-credit hour. Anyone interested in the military, leadership, government, or national security issues is encouraged to register for the academic classes. Students who chose to be active cadets pursuing a commission are required to attend their respective academic class in addition to LLAB.

### Academic Classes

DAAS 101	Heritage & Values I	1
DAAS 111	Heritage and Values II	1
DAAS 201	Team and Leadership Fundamentals I	1
DAAS 211	Team and Leadership Fundamentals II	1
DAAS 301	Leading People and Effective Communication I	3
DAAS 311	Leading People and Effective Communication II	3
DAAS 401	National Security/Commissioning Preparation I	3
DAAS 411	National Security/Commissioning Preparation II	3

### Leadership Laboratory Classes

The Leadership Laboratory is a cadet-centered activity held in conjunction with all courses listed above and required for all Air Force ROTC cadets. It provides leadership and followership training experiences which will improve a cadet's ability to perform as an Air Force or Space Force officer.

DAAS 102	Leadership Lab 100 I	1
DAAS 112	Leadership Lab 100 II	1
DAAS 202	Leadership Lab 200 I	1
DAAS 212	Leadership Lab 200 II	1
DAAS 302	Leadership Lab 300 I	1
DAAS 312	Leadership Lab 300 II	1
DAAS 402	Leadership Lab 400 I	1
DAAS 412	Leadership Lab 400 II	1

### Scholarships

Highly qualified freshmen and sophomores can compete nationally for the In-College Scholarship Program. Express Scholarships may be available to students pursuing degrees the Air Force deems "critical" (Engineering and Foreign Languages).

Scholarships cover tuition and most fees, \$900 annually for textbooks, and include a monthly stipend (\$300-\$500). For High School seniors, four-year scholarships are available through [www.afrotc.com](http://www.afrotc.com) (<http://www.afrotc.com>) and applications are due by **February 1** each year.

### Advising

For more information about Air Force ROTC or about our scholarship programs, log on to [www.afrotc.com](http://www.afrotc.com) (<http://www.afrotc.com>), email us at [afrotc@manhattan.edu](mailto:afrotc@manhattan.edu), or contact our office at (718) 862-7901.

## Center for Academic Success

The Manhattan College Center for Academic Success is committed to providing student centered programs and initiatives designed to enhance the learning experience of all students. Students will work in tandem with qualified and caring professionals and peers to receive personal and academic support to ensure their undergraduate success. The Center for Academic Success (CAS) has two locations throughout the campus including the Writing Center and The Learning Center in Thomas Hall, and the Math & Engineering Center in Leo Hall.

The Center prides itself on its holistic approach to learning and is proud to offer various programs designed to support the entire student body. We provide tutoring designed to support students with their courses by providing them with content-specific assistance accessed through individual or on-line tutoring. All tutors employed through the CAS meet the highest standards of academic achievement and are certified through the College Reading and Learning Association. We also provide workshops focused on academic enhancement designed to teach innovative strategies and techniques to assist students with their own unique challenges and experiences.

The Manhattan College Supplemental Instruction Fellowship Program is another facet of the Center which targets traditionally difficult courses and provides regularly scheduled peer facilitated study groups. Supplemental Instruction is an academic assistance program designed to improve student academic performance and increase retention.

The Writing Center offers writing instruction to all members of the Manhattan College community. Assistance is available for writing assignments from any discipline as well as for any professional writing activities. Our cornerstone practice is one-on-one conferencing with trained writing consultants: we help writers identify problems and implement solutions at any point during their writing process. We forge intellectual partnerships to work on specific assignments, to increase confidence, and to improve overall writing performance. Various writing workshops will augment this one-on-one philosophy.

## Center for Career Development

The mission of the Center for Career Development (<https://inside.manhattan.edu/student-life/career-pathways/career-development/>) is to contribute to the educational and professional development of students by helping them discern their vision for what constitutes a meaningful and purpose-driven career. We accomplish this by providing comprehensive, person-centered career counseling, programs, and events that encourage students to consider all career pathways, including graduate school and employment opportunities. We honor the uniqueness of all schools, providing diverse professional opportunities across disciplines and industries. Our approach facilitates engagement by employers, alumni and all devoted to the professional success of our students.

CCD provides walk-in hours and offers various professional training programs and services throughout the year. Students and alumni can schedule individual career counseling appointments to assess their interests, values, skills and preferences. Decision-making tools and career assessments are used to develop person-centered counseling. Career counselors teach effective job search techniques; discuss opportunities in a variety of career paths; help tailor résumés and cover letters; strengthen personal branding and build strong interviewing skills.

Students and alumni can access the on-line, 24-hour job posting board, Handshake (<https://inside.manhattan.edu/student-life/career-pathways/career-development/students/job-board.php>), for full-time, part-time, internship (current students only) and temporary positions. For those seniors seeking full-time employment upon graduation, there is an active On-Campus Recruitment Program (<https://inside.manhattan.edu/student-life/career-pathways/career-development/students/recruiting.php>) available during the fall and spring semesters. Representatives from companies/organizations come to campus to interview students for career opportunities.

Additionally, CCD offers the Mentor Program (<https://inside.manhattan.edu/student-life/career-pathways/career-development/students/mentor-program-students.php>) for Manhattan College students to gain insight into their intended careers by being paired with professionals, generally Manhattan College alumni, in those career areas. Meeting with mentors several times a semester, visiting the work sites, talking with other employees at the company, sitting in on a meeting, or sometimes participating in a project, offers the students opportunities to think about a chosen career field early in their college career. The program is open to incoming freshmen in the School of Engineering and to sophomores and juniors in the Schools of Liberal Arts, Business, Education & Health and Science during the participating academic year.

Students can gain valuable work experience through the credit-based Internship Program (<https://inside.manhattan.edu/student-life/career-pathways/career-development/students/internships.php>). A student can apply for an internship after earning 54 academic credits, completing the basics in their major (at least 12 credits) and who are in good academic standing. School of Engineering programs are not included because they do not award credit for internships. Internships complement and broaden students' education through the practical application of the theoretical and technical knowledge gained in the classroom. For those interested in the no-credit internship, review COOP 401 (see below) and schedule an appointment with a career counselor from CCD.

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## Center for Graduate School and Fellowship Advisement

The mission of the Manhattan College Center for Graduate School and Fellowship Advisement is to ensure that our graduating students and alumni who desire to continue on to graduate or professional school are provided with the preparation and support to make that transition and to succeed at the graduate level. In addition, we provide every level of support to students and alumni applying to external fellowships. The Center offers individualized advising, centralized resources and information, and programming for students interested in graduate school, research, and fellowship opportunities.

The Center provides a comprehensive and seamless approach to advising on decisions about career pathways and life after Manhattan College. We work closely with the Center for Career Development to provide a warm engaging space where students and alumni can explore their future. Students are encouraged to think about their options for after graduation, considering both graduate school as well as industry opportunities. We help students and alumni identify interests, develop realistic goals, gain relevant and necessary experience, overcome challenges, and make informed decisions. We are also focused helping students understand undergraduate research experience in the context of graduate school, fellowships, and career pathways. We will work with students to determine whether or not graduate school fits in with their own professional development plans.

### Applying for Fellowships

The Center for Graduate School and Fellowship Advisement is committed to helping students understand the very competitive process of applying to external, national and international fellowships. We have a faculty committee that reviews student applications for fellowships requiring an institutional nomination, and we work to educate students about different fellowship opportunities. We can provide guidance on exploring fellowships, preparing applications, developing research proposals and preparing for interviews. We can help students explore and identify potential fellowship opportunities that will help them meet their professional development goals.

### Preparation for Law School

The Center for Graduate School and Fellowship Advisement works closely with the Faculty Pre-law Advisor, the Center for Career Development, and Alumni Relations to provide advising, resources, and opportunities for students interested in pursuing law school. There is no single major here at Manhattan College that is a prerequisite for applying to law school. In addition, there is no pre-law major or minor. Students that do well in the application process have strong analytic and problem solving skills, critical reading skills, writing skills, communication skills, research skills, task management skills and a dedication to public service and promotion of justice, according to the American Bar Association. Students are also encouraged to join and actively participate in student groups.



## Pre-Health Advising and Preparation for Medicine and Dentistry

CGSFA works closely with the Health Professions Advisory Committee (HPAC), a body of faculty members, to give guidance and support to students interested in careers in medicine, dentistry and allied health fields. We are available to help students investigate their career options in healthcare, and to discuss curricula, activities, internships, research, and application procedures in the health professions. We support candidates through all aspects of the application process, and we work to provide opportunities to prepare students to be competitive applicants to health professions schools.

### Health Professions Advisory Committee

The Health Professions Advisory Committee is a group of faculty members who give guidance to students interested in preparing for careers in medicine, dentistry and allied fields. This committee helps students become aware of the course requirements and experiences essential for admission to professional schools. The committee advises students on the selection of programs of study that will give both background in the sciences and a broad liberal education to prepare them for effective participation in the human community.

The minimum required courses for admission to professional schools are:

BIOL 111 & BIOL 112	General Biology I and General Biology II	4
BIOL 113 & BIOL 114	General Biology Laboratory I and General Biology Laboratory II	4
CHEM 101 & CHEM 102	General Chemistry I and General Chemistry II	8
CHEM 319 & CHEM 320	Organic Chemistry I and Organic Chemistry II	6
CHEM 323 & CHEM 324	Organic Chemistry Laboratory I and Organic Chemistry Laboratory II	4
PHYS 101 & PHYS 102 or PHYS 107 & PHYS 108	Physics I and Physics II Introductory Physics I and Introductory Physics II	8

Specific schools may require or recommend other courses. Applicants are required to obtain 6-9 credits in English and 6 credits in Calculus I and Calculus II or Statistics. We strongly recommend foundation courses in Psychology, Sociology, and Biochemistry for students interested in pursuing a medical degree. Students should see an advisor for specific course recommendations.

## **Pre-Health Concentration**

The Pre-Health Concentration is recommended for students that wish to gain entrance to health professions schools, including medical school, dental school, veterinary school, optometry school, physician assistant programs and other health profession schools.

While students are not required to be a part of the concentration in order to get a committee letter of evaluation from HPAC, students are strongly encouraged to consider enrollment in this concentration to be part of the competitive cohort that applies to health professions schools each year.

## O'Malley Library

The Mary Alice & Tom O'Malley Library supports the work of faculty and students through its collections, facilities, and services. Reference librarians are available to help with students' academic work, and the librarians teach information literacy and advanced research classes to students in all subject areas.

The library is open 24 hours a day during the academic year. The collection includes 450,000 books and more than 48,000 current journals, including all the journals of the most prominent scholarly publishers: Elsevier, Oxford University Press, SAGE, Springer Nature, Taylor & Francis, and Wiley. Through the Library website, students on or off campus can access more than 220 databases that provide access to journals, books, and reference materials.

Students and faculty of Manhattan College can also use libraries throughout New York City and Westchester County through the on-site arrangements established by WALDO, our local library network. Books and articles from libraries worldwide are available through our interlibrary loan service.

O'Malley Library has four computer labs with more than 100 computer workstations as well as conference rooms and a wide range of areas for individual and group study. An Internet Cafe is located outside the main library entrance.

The Library maintains the Manhattan College Archives as well as the De La Salle Christian Brothers Archives of the New York and Long Island-New England Districts, the District of Eastern North America, the Midwest District, the Christian Brothers Conference, and the Lasallian Research Collection.

For more information about library hours and services, please see <https://lib.manhattan.edu/home> (<https://lib.manhattan.edu/home/>)

## Specialized Resource Center

The Specialized Resource Center (SRC) serves all students with a special need or disability. The SRC is a resource for students, faculty and the college at large. Use of services is voluntary, strictly confidential and without fee. The mission of the center is to ensure educational opportunity for all students with special needs by providing access to full participation in campus life. This is accomplished by assisting students in arranging individualized support services. A sampling of auxiliary aids and/or academic adjustments offered by the SRC for students providing appropriate documentation based on their individual needs for no fee include: priority seating; alternative testing environments; readers, note takers and scribes; access to adaptive technology and liaison with faculty and other college departments. The SRC is located on the 3rd floor in Thomas Hall.

## Study Abroad Opportunities

Manhattan College encourages students to enhance their education through Study Abroad programs. In order to participate in such a program, a student must normally have a minimum cumulative index of 2.75. Students generally enroll in a semester abroad either in their sophomore or junior year, and occasionally in the first semester of senior year. Study Abroad for the second semester of senior year is discouraged as it may interfere with graduating on time.

The College sponsors its own faculty-led programs as well as exchange programs located in many countries around the world. Various short-term, faculty led programs are also available during January intersession and the summer sessions. Participation in all foreign study programs must be approved by the Assistant Dean of the School in which the student is enrolled and the Dean of Students, in consultation with the Director of Study Abroad. Further information is available through the Office of Study Abroad.

# Academic Policies & Procedures

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All students shall abide by the Manhattan College Community Standards and Student Code of Conduct which can be found at <http://manhattan.edu/community-standards-and-student-code-conduct> (<http://manhattan.edu/community-standards-and-student-code-conduct/>) .

For crimes of violence, including, but not limited to sexual violence, or crimes that meet the reporting requirements pursuant to the federal Clery Act, Manhattan College shall make a notation on the transcript of students found responsible through a judicial process pursuant to the Student Code of Conduct. It will be noted that they were 'suspended after a finding of responsibility for a Code of Conduct violation' or 'expelled after a finding of responsibility for a code of conduct violation.' For the student who withdraws from the College while such conduct charges are pending, and declines to complete the disciplinary process, institutions shall make a notation on the transcript of such students that they 'withdrew with conduct charges pending.' Appeals seeking removal of a transcript notation for suspension can be directed to the Dean of Students and will be heard, provided that such notation will not be removed prior to one year after the conclusion of the suspension. Notations for expulsion will not be removed. If a finding of responsibility is vacated for any reason, any such transcript notation shall be removed.

## Policies

### Graduation

Each student is expected to be familiar with the academic regulations of the College and the particular requirements for their educational program. The student has sole responsibility for complying with regulations and meeting degree requirements. General academic standards and regulations are set forth below.

Students should also consult the current Student Handbook, which explains College procedures, disciplinary regulations, residence student life and related matters. This handbook is available in the Office of the Dean of Students and the Office of the Director of Residence Life.

To be eligible for graduation a student must have satisfactorily completed all the courses required in the program for which they are registered. In following their program all students must successfully complete all prerequisite courses before moving to more advanced work. All students must obtain a minimum average of C (i.e., a cumulative scholarship index of 2.00, computed according to the method set forth in the College Catalog). Students are personally responsible for meeting the degree requirements prescribed in the Catalog at the time they entered Manhattan College.

### Grading

The grades used to indicate the quality of the student's performance in every course are as follows: A means excellent, B means good, C means satisfactory, D means poor but passing, F means failing. For the purpose of computing grade point averages, the corresponding numerical equivalents for letter grades will be used:

Grade	Quality Points
A	4.0
A-	3.67
B+	3.33
B	3.0
B-	2.67
C+	2.33
C	2.0
C-	1.67
D+	1.33
D	1.0
P	0.0
F	0.0

**W Withdrawal.** Indicates withdrawal from a course in which the student is regularly enrolled. The student is required to have the withdrawal notification form signed by the instructor of the course and the dean of the student's school. The deadline for withdrawal from a course will be the end of the twelfth week of the semester. In "W" courses, neither quality hours nor quality points are assigned.

**AW Academic Withdrawal** - Indicates a student has never attended a course that they were officially registered for.

An AW grade will function the same as a Drop.

**UW Unofficial Withdrawal** - Indicates a student has stopped attending a course that they were officially registered for.

A UW grade will function the same as an F grade.

**P Passing.** No quality points assigned.

**NC No Credit.**

**P/F Pass/Fail.** In Pass/Fail courses, neither grade influences the grade point average. Credit is awarded for a P grade; no credit for F.

Quality points and quality hours are assigned for every credit attempted at Manhattan except those taken on a Pass/Fail basis, and those for which designations of a W or an I have been assigned. The scholarship index is determined by dividing the total number of quality points earned by the total number of quality hours.

For all students, the cumulative scholarship index is computed at the end of each semester; for those who attend the summer or winter sessions, it is also computed at the end of each session.

## GPA Calculation

### Computing the Grade Point Index (GPA)

The following is the method by which a student's GPA is calculated:

1. Multiply the quality points equal to the grade by the number of credits for which the grade was earned

$$A=4.00 \text{ quality points} \times 3 \text{ credits} = 12.00 \text{ points}$$

2. Add the total quality points earned in a semester

3. Divide by the total number of credits for a semester

The total quality points, divided by the total credits equals the GPA for the semester. To compute a cumulative grade point average, include all MC courses taken to date and divide by the total number of credits for which grades other than W, P, NC, AUD, have been earned or given.

## Incomplete Grades

An "I" grade indicates that some requirement of a course has not been satisfied by the end of the term. In all cases, the incomplete work must be completed and submitted to the instructor no later than 45 days from the last day of the term's final examination period. The faculty member must submit the final grade no later than 50 days from the last day of the term's final examination period. An incomplete will be converted to a grade of F if the work is not completed on schedule and if the final grade is not submitted on schedule. Extensions for the completion of the work or the submission of the final grade will be granted by the Dean of the school only in highly unusual circumstances. All incomplete grades must be resolved before the student graduates. **A grade of "I" does not satisfy the grade requirement for any prerequisite course. The "I" grade must be resolved with an acceptable grade before a prerequisite course can be counted as being successfully completed and before the student is permitted to take any course requiring the prerequisite.**

## Repeating a Course

If a student repeats a course, both grades will be shown on the transcript and are included in both the semester and cumulative GPA, unless, the student applies for the grade replacement policy.

## Grade Replacement Policy (effective 2018-2019)

The Manhattan College grade course replacement policy primarily applies to any student who has not met the minimum required grade for their program of study. Secondly, a student who has earned a C or less in a course may be allowed to apply this policy to improve the course grade and cumulative GPA. When the student repeats the same course at Manhattan College the higher of the two grades is used in calculating the student's GPA. The lower grade will remain on the student's record but will not be used in the calculation of the cumulative GPA. No additional credits are earned. All grades earned will appear on the student's transcript. See requirements below:

### Grade Replacement Conditions

- Eligible students wishing to apply the course replacement policy may do so at any time during their undergraduate enrollment, but petitions will not be honored after the degree is awarded.



- Ordinarily, this applies only to the first time a course is repeated.
- Applies to 100 or 200-level courses taken at Manhattan College. The dean of the student's school will approve or deny the application.
- A student may petition to apply the same policy for a 300 or 400-level course. The dean of the student's school will approve or deny the student's petition.
- Ordinarily, it is expected that students repeat a course within a year after first taking it
- Applies to no more than 16 credits of the student's academic record.
- The grade of the original course will not be removed from the GPA calculation until after the new grade has been completed at the end of the term.
- Only the higher of the two grades is used in calculating the GPA.
- The lower grade remains on the student's transcript and will not be used in the calculation of the cumulative GPA. No additional credits are earned.
- All grades remain on the transcript.
- Grade replacement may not be used to replace a grade assigned as a result of academic dishonesty.
- Does not apply for courses which transfer credits have been awarded.
- Grades of "W" or "AUDIT" will not replace previous grades.
- G.I. Bill ® students and others receiving Veterans Administration benefits are advised that replacement of any grade other than an unsatisfactory grade must be reported to the V.A. and may result in the retroactive reduction of benefits for the semester for which the replaced grade was originally assigned. An unsatisfactory grade may be replaced without similar consequences. Notify the Veteran Certifying Official when applying to use this option.
- Federal and/or state regulations may supersede portions of this policy. For example, students with financial aid are required to follow federal regulations regarding repeating courses. Please consult with the Office of Financial Aid to check how this policy may impact your eligibility for financial aid.

**Note:** In the future, if you apply for admission to other colleges, universities, graduate, and professional schools, or if your record is evaluated by a national testing agency such as AMCAS or LSDAS, both MC grades will likely be included in the calculation of your GPA.

## Academic Warning

Students will be considered to be officially on warning when a statement to that effect has been issued from the Dean's office noting that there is some indication that the student is experiencing difficulty in maintaining the academic standards necessary for graduation. Such warning will usually include an offer of academic counseling.

## Academic Probation

The regulations of Manhattan College provide that students are subject to be placed on academic probation when their cumulative grade index falls below the norm for satisfactory academic progress (see above). Students may remove themselves from academic probation by achieving the cumulative grade index consistent with the norms for satisfactory academic progress by the end of the following regular semester. Students on

academic probation may be required to take a reduced course load and be restricted from participating in College activities.

## **Academic Suspension**

Students are subject to suspension from the College when dismissal is indicated and a judgment is made that a student's studies at Manhattan should be interrupted for a designated period of time, usually six months or one year, before reinstatement would be considered. Suspended students must present evidence of their ability to continue their studies successfully when applying for such reinstatement.

## **Academic Dismissal**

Academic dismissal is normally considered a permanent separation from the College (not just a school of the College), ordinarily imposed when there is an indication of poor probability of academic success. Students may be dismissed from the College if they fail to meet the satisfactory academic progress standards within one semester of being placed on probation or fail to observe the restrictions imposed during probation. Students may also be dismissed from the College when they receive failing grades in all credits attempted in any one semester. Academic Dismissal is noted on the student transcript.

A student may appeal a dismissal decision to the dean of the student's school within 14 days of the notification date. The decision becomes final after 14 days. After dismissal, a student may request an exception to the policy and the dismissal by applying for reinstatement to the dean of the school imposing the dismissal. All reinstatement decisions made by a dean will be reviewed and approved by the provost.

## **Withdrawal from the College**

### **Regular Withdrawal**

Students currently enrolled in Manhattan College who wish to withdraw from the College, effectively ending their status as matriculated students, must complete the required Manhattan College Withdrawal Form. An appointment should be made with the appropriate Academic Advisor to have an exit interview and to complete the required form. This form must be completely filled out or students will not be eligible for tuition adjustments and may be responsible for paying back any financial aid received from the College. Students will be considered withdrawn on the date that they officially notify the College. Students who withdraw from the College after the last day for course withdrawal will receive a grade of "F" for all courses during the session unless a waiver is granted by the Provost for medical, psychological or emergency reasons. In this case, the student will receive a grade of "W" for all courses during that session.

### **Administrative Withdrawal**

A student may be administratively withdrawn from the College:

1. If they fail to register for classes by the end of the add/drop period.
2. If they fail to attend classes by the end of the add/drop period.
3. If they have not returned to the College or fails to qualify to return to the College when the approved period of leave of absence has expired.

4. If they have not returned after academic or disciplinary suspension at the time specified and the period of suspension has not been extended.
5. If in extraordinary circumstances a student is unable or unwilling to request a voluntary leave of absence or a voluntary medical leave of absence and there is a clear need to protect the safety of the student and/or others or to protect the integrity of the College's learning environment.

## **Reinstatement Following Withdrawal**

A student who withdraws or is withdrawn from the College may apply for reinstatement. In order to return to the College from a withdrawn status, a student must make a request in writing to their Dean at least eight weeks before the beginning of the semester to which the student seeks to return. The College reserves the right to require, review and approve documentation that the student is qualified and ready to return to academic work.

In the case of a voluntary withdrawal for medical/psychological reasons or any administrative withdrawal under this policy related to a physical or mental health condition, the student must submit a written progress assessment from a treating health professional as part of the request for reinstatement. The Director of Counseling and Health Services may require a release from the student to discuss current treatment and follow-up needs with the treating health professional, in order to assess whether the student is qualified and ready to return to the College and whether the College can provide the follow-up care needed to maintain the student's enrollment. The Director of Counseling and Health Services approves the return of all students who have withdrawn or been withdrawn for medical or psychological reasons.

Students who are reinstated following withdrawal from College will comply with the degree requirements of the catalog in effect when they are reinstated.

## **Withdrawal from a Course**

After the Add/Drop period at the beginning of each semester, students are permitted to withdraw from a course without academic penalty until the twelfth week of the semester. The required course withdrawal form is available in the office of their Dean. Withdrawing from a course after the Add/Drop period and before the deadline for all withdrawals places a W on the transcript for that course. After the withdrawal deadline at the end of the twelfth week, the student will receive a grade of F for that course unless there are extraordinary circumstances (such as severe illness) that merit an exception. Students are cautioned to avoid a pattern of regularly accumulating W grades on their transcripts.

## **Course Requirements**

At the beginning of each semester or session, each instructor is expected in each course to state the objectives of the course, indicate the course requirements, and the criteria to be used in evaluating the performance of students. Each instructor is also expected to announce whether a final examination for the course will be given, and likewise, will outline the course requirements and indicate the criteria to be used in evaluating the performance of students.

## Attendance Policy

Students are required to fulfill all course requirements as detailed in the course syllabi for their registered courses. Implicit in these requirements is the completion of all course assignments and attendance in all classes.

A student who is absent from class cannot expect the course instructor to provide notes or allow makeup tests, quizzes, or laboratories. The student may incur an appropriate grading penalty for such absences if the penalty was described in the syllabus. Reasonable accommodations for absences are recommended but are solely at the discretion of the course instructor.

If the instructor believes that a student's failure to attend class is substantially affecting the student's course grade, then the instructor is strongly encouraged to report the situation to the dean of the school in which the student is matriculated. It is recommended that the Dean be contacted by the course instructor after the student incurs four hours of absences in a course. The Dean will address the situation with the student.

## Credit Hour

During the fall and spring semesters, each class shall meet for at least 50 minutes per week per credit hour. Thus, a three-credit course shall meet for at least 150 minutes each week through three 50 minute periods, two 75 minute periods or one 150 minute period. After the last scheduled class of each semester and during the final exam period scheduled by the Registrar, each class shall have at least 150 minutes of class contact time. This contact time may be used for a final exam or, as appropriate: final project or papers including reflective papers; presentations or other recitations; annotated anthologies; poster sessions; annotated portfolios; fact sheets; question banks; memorandum or briefs; or other instructor supervised activities.

## Credit for Off-Campus Courses

Once matriculated into a degree-granting program (major) at Manhattan College (College), a student may not take off-campus courses offered by another accredited institution for transfer to the College without prior written approval from the student's academic advisor and the student's dean. A maximum of **12** credits may be taken in off-campus courses. Each school may set limitations on what types of courses may or may not be approved for its students that are consistent with the College's overall requirements.

Credit for courses taken at other institutions by matriculated students of Manhattan College will be recognized under the following conditions:

1. Required courses in a major or in a minor may not be taken off-campus except in extenuating circumstances and with compelling reasons, and with the approval of the chair of the major program or the minor program, respectively.
2. Only courses from accredited two- and four-year colleges and from accredited universities will be considered.
3. Written approval to take such courses is obtained in advance from the Dean of the student's School. Online courses are acceptable if approved.

4. The required form and transcript are filed with the Registrar and the required fee is paid to the Bursar.
5. The grade received at the other institution is equivalent to or higher than the Manhattan College grade of C. Grades earned at other institutions will not be transferred to the student's record at Manhattan College.
6. Study-abroad courses do not count toward the 12-credit maximum.
7. The required nine (9) credits of Religious Studies courses – RELS 110, a 200-level course in Catholic Studies, and a 300-level course from Global Studies and Contemporary Issues – are at the core of the Lasallian heritage of the College. Generally, these courses will be taken on-campus. These courses are offered in both in-class and on-line formats by the College. A required RELS course may be taken off-campus if the RELS program does not offer enough openings in the course. Any exceptions will only be permitted for **one** of the three-credit RELS courses and as part of the overall 12 credits allowed. Any RELS course taken off-campus to meet the nine-credit hour requirement will require review for equivalency or substitutability by the dean of the School of Liberal Arts before approval by the student's dean.
8. Each School may adopt additional guidelines to meet specific accreditation or curricular requirements for its programs.

This policy will come into force starting the 2017-2018 academic year for all students enrolled at that time and subsequently.

## Leave of Absence

Students currently enrolled in Manhattan College who wish to leave the College in the following semester for personal, medical or psychological reasons, after which they intend to return, should request a leave of absence from the Dean of their School. With approval, a student can take a leave of absence not to exceed one year. Students requesting a leave of absence for medical or psychological reasons must have their requests reviewed by the Director of Counseling and Health Services.

If the request for a leave of absence is approved, a maintenance-of-matriculation registration must be completed and will be used to maintain the student's matriculation status active during the leave. In addition, the maintenance-of-matriculation registration permits the student, on their return to Manhattan College, to follow the degree program requirements in effect at the time the leave was granted. In special circumstances, a student may apply through their Dean's office for one (and only one) additional semester of leave by completing a maintenance-of-matriculation registration. If a student is not returning after the approved maintenance of matriculation is over, they must inform their Academic Advisor.

A student whose request is approved will be billed a maintenance-of-matriculation fee.

Generally, students who have been approved for a leave of absence do not need to apply for reinstatement to the College. In addition, any academic scholarships awarded by the College will remain available to them after a one-semester leave of absence, provided they continue to meet the eligibility requirements. Students taking a leave of absence who are recipients of federal Title IV financial aid must consult with Student Financial Services to determine the implications of that leave on their financial aid eligibility.

A leave of absence for medical or psychological reasons requires prior approval of the Director of the Counseling Center. When the leave of absence is granted for medical or psychological reasons, the student can return to Manhattan College only after the Director of Counseling and Health Services has indicated that the medical or psychological condition has been addressed and the student is capable of resuming their studies at Manhattan. To this end, the student will be required to submit a written progress assessment from a treating health professional attesting to the student's readiness to resume studies at Manhattan College. This documentation must address the diagnosis, prognosis and treatment plan for the semester of return. The Director of Counseling and Health Services may also require a release from the student to discuss current treatment and follow-up needs with the treating health professional, in order to assess whether the student is qualified and ready to return to the College. The director of counseling and health services approves the return of all students who have been granted a leave of absence for medical or psychological reasons.

If a student is approved for a leave of absence and later is suspended, dismissed or placed on probation as a result of academic issues or suspended or expelled as the result of a judicial decision, these sanctions take precedence over a leave of absence and stand as a matter of record.

## **Procedures**

### **Grades**

Final grades can be viewed on self-service at the end of each semester and at the conclusion of work in the Summer and January Intersessions. Mid-term grades are issued to all undergraduate students to indicate their standing in courses up to that time and to assist faculty and advisors in providing students the necessary guidance they might require. These mid-semester grades are not recorded on the permanent academic record.

### **Contested Grades**

If a student believes that their final grade in a course is not consistent with the grading criteria designated by the course instructor, the student should first discuss the matter with the course instructor. If the student and the instructor cannot resolve the matter in this discussion, the student may discuss the matter with the department chair. Copies of all graded tests, quizzes, and other assignments will be needed.

In the event that the student is not satisfied with the outcome of the discussions with the course instructor and the chair, the student may make a written request to the chair for formal consideration of the problem. This request must be submitted within three weeks after the beginning of the semester immediately following the regular Fall or Spring semester. Included in the request will be an outline of the student's specific complaints. The chair shall make a detailed investigation and shall notify the student and course instructor of their findings. The student may appeal the findings of the chair to the Dean of the school in which the course was offered. The Dean of the school will respond to the student in writing and will preserve the documentation of the process. When the department chair is the course instructor, the student may appeal to the Dean of the school in which the course was taught who will investigate the matter and notify the student and the department chair of their findings.

*Students should be aware that only the course instructor may change a grade.*

## Grade Changes

All course grades (except “I” grades) are intended to be final and permanent. It is expected that course instructors will determine and report final grades as accurately and precisely as the nature of the evaluation of student achievement and the grading system will permit. It is considered the instructor's direct and personal responsibility to ensure that grades are fair and reported correctly.

Notwithstanding all precautions, faculty members can make errors. When this occurs, the errors should be corrected so that students are not unfairly penalized. If a course instructor decides to request a grade correction, the appropriate forms must be completed and sent to the Dean of the school in which the course was taught. A copy of the change of grade form will be sent to the Dean of the school where the student is registered. Except in the case of contested grades, all requests for correcting grades must be submitted by last day of the fourth week of the semester of the following Fall or Spring semester. Only the course instructor can submit a grade change request. The Dean of the school where the course is taught may disapprove of the request, indicating in writing the reason why.

## Good Academic Standing

All students are required to maintain good academic standing as a condition of enrollment at Manhattan College. The guidelines vary, depending upon the student's grade level. Good academic standing is measured by reviewing a student's quantitative and qualitative progress. The quantitative measurement ensures that students are making progress toward their degree goals, while the qualitative measurement ensures that students are succeeding in their coursework.

- All undergraduate students are required to have a cumulative average of 1.80 at the end of freshman year, 1.90 at the end of sophomore year and then a 2.0 or higher by your junior year while earning a minimum number of credits to demonstrate good academic standing.
- All undergraduate students are required to maintain a 2.0 for any institutional aid; this does not include scholarship aid.
- All graduate students are required to have a cumulative average of 3.0 or higher while earning a minimum number of credits to demonstrate good academic standing.
- All undergraduate and graduate students will only have federal aid paid one time for courses they are repeating to improve a course grade.
- Each School at Manhattan College may implement additional guidelines for satisfactory academic progress in their programs.

*In additions to Manhattan College academic progress policy for all students, students who receive financial aid are subject to academic progress guidelines as outlined below:*

<b>Attempted Credits and Transfer Credits</b>	<b>Cumulative Grade Point Average</b>
1-26	1.8
27-59	1.9
60 and above	2.0

## **Change of Program**

Students wishing to change their degree program to another program at Manhattan should seek the advice of the Dean or Academic Advisor of the program they wish to enter. The Dean or Academic Advisor will examine the student's academic record to determine if the desired change in the degree program is advisable. Students wishing to change their program should do so before the end of their third semester at Manhattan. Students should take note that no part of their academic record will be altered when they change their degree program. All courses and grades remain on the academic record and constitute the student's academic history.

## **Transcripts**

Transcripts can be ordered by letter, on-line (<http://www.getmytranscript.com>), or in-person from the Office of the Registrar. To ensure prompt delivery of the transcript, requests should be made at least two weeks before the transcript is desired. The established fee for each transcript is five dollars. No transcript will be issued for students whose accounts are in arrears.



# Academic Dismissal

## Academic Dismissal

Academic dismissal is normally considered a permanent separation from the College (not just a school of the College), ordinarily imposed when there is indication of poor probability of academic success. Students may be dismissed from the College if they fail to meet the satisfactory academic progress standards within one semester of being placed on probation or fail to observe the restrictions imposed during probation. Students may also be dismissed from the College when they receive failing grades in all credits attempted in any one semester. Academic Dismissal is noted on the student transcript.

A student may appeal a dismissal decision to the dean of the student's school within 14 days of the notification date. The decision becomes final after 14 days. After dismissal, a student may request an exception to the policy and the dismissal by applying for reinstatement to the dean of the school imposing the dismissal. All reinstatement decisions made by a dean will be reviewed and approved by the provost.

# Academic Probation

## Academic Probation

The regulations of Manhattan College provide that students are subject to be placed on academic probation when their cumulative grade index falls below the norm for satisfactory academic progress (see above). Students may remove themselves from academic probation by achieving the cumulative grade index consistent with the norms for satisfactory academic progress by the end of the following regular semester. Students on academic probation may be required to take a reduced course load and be restricted from participating in College activities.

# Academic Suspension

## Academic Suspension

Students are subject to suspension from the College when dismissal is indicated and a judgment is made that a student's studies at Manhattan should be interrupted for a designated period of time, usually six months or one year, before reinstatement would be considered. Suspended students must present evidence of their ability to continue their studies successfully when applying for such reinstatement.

# Academic Warning

## Academic Warning

Students will be considered to be officially on warning when a statement to that effect has been issued from the Dean's office noting that there is some indication that the student is experiencing difficulty in maintaining the academic standards necessary for graduation. Such warning will usually include an offer of academic counseling.

# Attendance Policy

## Attendance Policy

Students are required to fulfill all course requirements as detailed in the course syllabi for their registered courses. Implicit in these requirements is completion of all course assignments and attendance in all classes.

A student who is absent from class cannot expect the course instructor to provide notes or allow makeup tests, quizzes, or laboratories. The student may incur an appropriate grading penalty for such absences if the penalty was described in the syllabus. Reasonable accommodations for absences are recommended, but are solely at the discretion of the course instructor.

If the instructor believes that a student's failure to attend class is substantially affecting the student's course grade, then the instructor is strongly encouraged to report the situation to the dean of the school in which the student is matriculated. It is recommended that the dean be contacted by the course instructor after the student incurs four hours of absences in a course. The dean will address the situation with the student.

# Academic Progress

## Academic Progress Requirements

All students are required to maintain good academic standing as a condition of enrollment at Manhattan College. The guidelines vary, depending upon the student's grade level and depending upon which form(s) of aid they are receiving. Good academic standing is measured by reviewing a student's quantitative and qualitative progress. The quantitative measurement ensures that students are making progress toward their degree goals, while the qualitative measurement ensures that students are succeeding in their coursework.

- All undergraduate students are required to have a cumulative average of 1.80 end of freshman year, 1.90 end of sophomore year and then a 2.0 or higher by your junior year while earning a minimum number of credits to demonstrate good academic standing.
- All undergraduate students are required to maintain a 2.0 for any institutional aid; this does not include scholarship aid.
- All graduate students are required to have a cumulative average of 3.0 or higher while earning minimum number of credits to demonstrate good academic standing.
- All undergraduate and graduate students will only have federal aid paid one time for courses they are repeating to improve a course grade.
- Each School at Manhattan College may implement additional guidelines for satisfactory academic progress in their programs.

*In additions to Manhattan College academic progress policy for all students, students who receive financial aid are subject to academic progress guidelines.*

View the SAP Policy (<https://inside.manhattan.edu/offices/financial-aid/policies.php#sap>)

Attempted Credits and Transfer Credits	Cumulative Grade Point Average
1-26	1.8
27-59	1.9
60 and above	2.0

# Change of Program

## Change of Program

Students wishing to change their degree program to another program at Manhattan should seek the advice of the Dean or Academic Advisor of the program they wish to enter. The Dean or Academic Advisor will examine the student's academic record to determine if the desired change in degree program is advisable. Students wishing to change their program should do so before the end of their third semester at Manhattan. Students should take note that no part of their academic record will be altered when they change their degree program. All courses and grades remain on the academic record and constitute the student's academic history.

# Credits

## Credit Hour

During the fall and spring semesters, each class shall meet for at least 50 minutes per week per credit hour. Thus, a three-credit course shall meet for at least 150 minutes each week through three 50 minute periods, two 75 minute periods or one 150 minute period.

After the last scheduled class of each semester and during the final exam period scheduled by the Registrar, each class shall have at least 150 minutes of class contact time. This contact time may be used for a final exam or, as appropriate: final project or papers including reflective papers; presentations or other recitations; annotated anthologies; poster sessions; annotated portfolios; fact sheets; question banks; memorandum or briefs; or other instructor supervised activities.

## Credit for Off-Campus Courses

Once matriculated into a degree-granting program (major) at Manhattan College (College), a student may not take off-campus courses offered by another accredited institution for transfer to the College without prior written approval from the student's academic advisor and the student's dean. A maximum of **12** credits may be taken in off-campus courses after matriculation. Each school may set limitations on what types of courses may or may not be approved for its students that are consistent with the College's overall requirements.

Credit for courses taken at other institutions by matriculated students of Manhattan College will be recognized under the following conditions:

1. Required courses in a major or in a minor may not be taken off-campus except in extenuating circumstances and with compelling reasons, and with the approval of the chair of the major or minor program.
2. Only courses from accredited two- and four-year colleges and from accredited universities will be considered.
3. Written approval to take courses with departmental or school course numbers is obtained in advance. First, the chair of the department offering the course at Manhattan must approve the off-campus course based on the equivalency or substitutability of the course. Second, the Dean of the student's school must approve the off-campus course based on the chair's assessment and other circumstances. On-line courses are acceptable if approved. Approval to take courses without departmental or school course numbers may be approved by the dean.
4. The required form and transcript are filed with the Registrar and the required fee is paid to the Bursar.
5. The grade received at the other institution must be equivalent to or higher than the Manhattan College grade of C.
6. Grades earned at other institutions will not be transferred to the student's record at Manhattan College.
7. Study-abroad courses do not count toward the 12-credit maximum.
8. The required nine (9) credits of Religious Studies courses – RELS 110, a 200-level course in Catholic Studies, and a 300-level course from Global Studies and



Contemporary Issues – are at the core of the Lasallian heritage of the College. Generally, these courses will be taken on-campus. These courses are offered in both in-class and online formats by the College. A required RELS course may be taken off-campus if the RELS program does not offer enough openings in the course. Any exceptions will only be permitted for **one** of the three-credit RELS courses and as part of the overall 12 credits allowed. Any RELS course taken off-campus to meet the nine credit hour requirement will require review for equivalency or substitutability by the dean of the School of Liberal Arts before approval by the student's dean.

1. Each School may adopt additional guidelines to meet specific accreditation or curricular requirements for its programs.

# Grades

## Final Grades

Final grades can be viewed on self-service at the end of each semester and at the conclusion of work in the Summer and January Intersessions. Mid-term grades are issued to all undergraduate students to indicate their standing in courses up to that time and to assist faculty and advisors in providing students the necessary guidance they might require. These mid-semester grades are not recorded on the permanent academic record.

## Contested Grades

If a student believes that their final grade in a course is not consistent with the grading criteria designated by the course instructor, the student should first discuss the matter with the course instructor. If the student and the instructor cannot resolve the matter in this discussion, the student may discuss the matter with the department chair. Copies of all graded tests, quizzes, and other assignments will be needed.

In the event that the student is not satisfied with the outcome of the discussions with the course instructor and the chair, the student may make a written request to the chair for a formal consideration of the problem. This request must be submitted within three weeks after the beginning of the semester immediately following the regular Fall or Spring semester. Included in the request will be an outline of the student's specific complaints. The chair shall make a detailed investigation and shall notify the student and course instructor of their findings. The student may appeal the findings of the chair to the Dean of the school in which the course was offered. The Dean of the school will respond to the student in writing and will preserve the documentation of the process. When the department chair is the course instructor, the student may appeal to the Dean of the school in which the course was taught who will investigate the matter and notify the student and the department chair of their findings.

*Students should be aware that only the course instructor may change a grade.*

## Grade Changes

All course grades (except "I" grades) are intended to be final and permanent. It is expected that course instructors will determine and report final grades as accurately and precisely as the nature of the evaluation of student achievement and the grading system will permit. It is considered the instructor's direct and personal responsibility to insure that grades are fair and reported correctly.

Notwithstanding all precautions, faculty members can make errors. When this occurs, the errors should be corrected so that students are not unfairly penalized. If a course instructor decides to request a grade correction, the appropriate forms must be completed and sent to the Dean of the school in which the course was taught. A copy of the change of grade form will be sent to the Dean of the school where the student is registered. Except in the case of contested grades, all requests for correcting grades must be submitted by last day of the fourth week of the semester of the following Fall or Spring semester. Only the course instructor can submit a grade change request. The Dean of the school where the course is taught may disapprove of the request, indicating in writing the reason why.

# Grading

The grades used to indicate the quality of the student's performance in every course are as follows: A means excellent, B means good, C means satisfactory, D means poor but passing, F means failing. For the purpose of computing grade point averages, the corresponding numerical equivalents for letter grades will be used:

Grade	Quality Points
A	4.0
A-	3.67
B+	3.33
B	3.0
B-	2.67
C+	2.33
C	2.0
C-	1.67
D+	1.33
D	1.0
P	0.0
F	0.0

**W Withdrawal.** Indicates withdrawal from a course in which the student is regularly enrolled. The student is required to have the withdrawal notification form signed by the instructor of the course and the dean of the student's school. The deadline for withdrawal from a course will be the end of the twelfth week of the semester. In "W" courses, neither quality hours nor quality points are assigned.

**AW Academic Withdrawal.** Indicates a student has never attended a course in which the student was officially enrolled. Neither quality hours nor quality points are assigned.

**UW Unofficial Withdrawal.** Indicates a student has stopped attending a course in which the student was officially enrolled. Quality hours and quality points are equivalent to an F grade.

**P Passing.** No quality points assigned.

**NC No Credit.**

**P/F Pass/Fail.** In Pass/Fail courses, neither grade influences the grade point average. Credit is awarded for a P grade; no credit for F.

Quality points and quality hours are assigned for every credit attempted at Manhattan except those taken on a Pass/Fail basis, and those for which designations of a W or an I have been assigned. The scholarship index is determined by dividing the total number of quality points earned by the total number of quality hours.

For all students, the cumulative scholarship index is computed at the end of each semester; for those who attend the summer or winter sessions it is also computed at the end of each session.

## GPA Calculation

### Computing the Grade Point Index (GPA)

The following is the method by which a student's GPA is calculated:

1. Multiply the quality points equal to the grade by the number of credits for which the grade was earned

$$A=4.00 \text{ quality points} \times 3 \text{ credits} = 12.00 \text{ points}$$

2. Add the total quality points earned in a semester

3. Divide by the total number of credits for a semester

The total quality points, divided by the total credits equals the GPA for the semester. To compute a cumulative grade point average, include all MC courses taken to date and divide by the total number of credits for which grades other than W, P, NC, AUD, have been earned or given.

# Graduation

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## Graduation Policy

Each student is expected to be familiar with the academic regulations of the College and the particular requirements of their educational program. The student has sole responsibility for complying with regulations and meeting degree requirements. General academic standards and regulations are set forth below.

Students should also consult the current Student Handbook, which explains College procedures, disciplinary regulations, residence student life and related matters. This handbook is available in the Office of the Dean of Students and the Office of the Director of Residence Life.

To be eligible for graduation a student must have satisfactorily completed all the courses required in the program for which they are registered. In following their program, a student must successfully complete all prerequisite courses before moving to more advanced work. All students must obtain a minimum average of C (i.e., a cumulative scholarship index of 2.00, computed according to the method set forth in the College Catalog). Students are personally responsible for meeting the degree requirements prescribed in the Catalog at the time they entered Manhattan College.

# Graduation

## Graduation Policy

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# Incomplete Grades

## Incomplete Grades

An “I” grade indicates that some requirement of a course has not been satisfied by the end of the term. In all cases, the incomplete work must be completed and submitted to the instructor no later than 45 days from the last day of the term’s final examination period. The faculty member must submit the final grade no later than 50 days from the last day of the term’s final examination period. An incomplete will be converted to a grade of F if the work is not completed on schedule and if the final grade is not submitted on schedule. Extensions for the completion of the work or the submission of the final grade will be granted by the Dean of the school only in highly unusual circumstances. All incomplete grades must be resolved before the student graduates. **A grade of “I” does not satisfy the grade requirement for any prerequisite course. The “I” grade must be resolved with an acceptable grade before a prerequisite course can be counted as being successfully completed and before the student is permitted to take any course requiring the prerequisite.**

# Leave of Absence

## Leave of Absence

Students currently enrolled in Manhattan College who wish to leave the College in the following semester for personal, medical or psychological reasons, after which they intend to return, should request a leave of absence from the Dean of their School. With approval, a student can take a leave of absence not to exceed one year. Students requesting a leave of absence for medical or psychological reasons must have their requests reviewed by the Director of Counseling and Health Services.

If the request for a leave of absence is approved, a maintenance-of-matriculation registration must be completed and will be used to maintain the student's matriculation status active during the leave. In addition, the maintenance-of-matriculation registration permits the student on their return to Manhattan College, to follow the degree program requirements in effect at the time the leave was granted. In special circumstances, a student may apply through their Dean's office for one (and only one) additional semester of leave by completing a maintenance-of-matriculation registration. If a student is not returning after the approved maintenance of matriculation is over, they must inform their Academic Advisor.

A student whose request is approved will be billed a maintenance-of-matriculation fee.

Generally, students who have been approved for a leave of absence do not need to apply for reinstatement to the College. In addition, any academic scholarships awarded by the College will remain available to them after a one-semester leave of absence, provided they continue to meet the eligibility requirements. Students taking a leave of absence who are recipients of federal Title IV financial aid must consult with Student Financial Services to determine the implications of that leave on their financial aid eligibility.

A leave of absence for medical or psychological reasons requires prior approval of the Director of the Counseling Center. When the leave of absence is granted for medical or psychological reasons, the student can return to Manhattan College only after the Director of Counseling and Health Services has indicated that the medical or psychological condition has been addressed and the student is capable of resuming their studies at Manhattan. To this end, the student will be required to submit a written progress assessment from a treating health professional attesting to the student's readiness to resume studies at Manhattan College. This documentation must address the diagnosis, prognosis and treatment plan for the semester of return. The Director of Counseling and Health Services may also require a release from the student to discuss current treatment and follow-up needs with the treating health professional, in order to assess whether the student is qualified and ready to return to the College. The director of counseling and health services approves the return of all students who have been granted a leave of absence for medical or psychological reasons.

If a student is approved for a leave of absence and later is suspended, dismissed or placed on probation as a result of academic issues or suspended or expelled as the result of a judicial decision, these sanctions take precedence over a leave of absence and stand as a matter of record.



**Involuntary Medical Leave**

If the College determines that a student should be placed on a leave due to medical or psychological reasons related to the health and safety of the student, Manhattan College reserves the right to place a student on an involuntary withdrawal from the student's academic program of study. This may occur when the student is not able to willing to take a voluntary leave and the College has made a reasonable determination that the student poses a direct threat to the health and/or safety of self and others.

Where Manhattan College believes that an involuntary withdrawal is to be considered, the Dean of Students will identify a team of professionals to make a reasoned determination. Included on that decision-making team will be a medical or mental health professional. The student will be informed of the College's concerns and the pending decision to consider an involuntary withdrawal.

The College reserves the right to notify parents or legal guardians if deemed appropriate under the circumstances and applicable law, including making arrangements for family members to pick the student up from the College's facilities, house the student or obtain health care assistance.

# Repeated Courses/Grade Replacement

## Repeating a Course

If a student repeats a course, both grades will be shown on the transcript and are included in both the semester and cumulative GPA, unless, the student applies for the grade replacement policy.

### Grade Replacement Policy (Effective 2018-2019 Year)

The Manhattan College grade course replacement policy primarily applies to any student who has not met the minimum required grade for his/her program of study. Secondly, a student who has earned a C or less in a course may be allowed to apply this policy to improve the course grade and cumulative GPA. When the student repeats the same course at Manhattan College the higher of the two grades is used in calculating the student's GPA. The lower grade will remain on the student's record but will not be used in the calculation of the cumulative GPA. No additional credits are earned. All grades earned will appear on the student's transcript. See requirements below:

### Grade Replacement Conditions

- Eligible students wishing to apply the course replacement policy may do so at any time during his/her undergraduate enrollment, but petitions will not be honored after the degree is awarded.
- Ordinarily, this applies only to the first time a course is repeated.
- Applies to 100 or 200-level courses taken at Manhattan College. The dean of the student's school will approve or deny the application.
- A student may petition to apply the same policy for a 300 or 400-level course. The dean of the student's school will approve or deny the student's petition.
- Ordinarily, it is expected that students repeat a course within a year after first taking it
- Applies to no more than 16 credits of the student's academic record.
- The grade of the original course will not be removed from the GPA calculation until after the new grade has been completed at the end of the term.
- Only the higher of the two grades is used in calculating the GPA.
- The lower grade remains on the student's transcript and will not be used in the calculation of the cumulative GPA. No additional credits are earned.
- All grades remain on the transcript.
- Grade replacement may not be used to replace a grade assigned as a result of academic dishonesty.
- Does not apply for courses which transfer credits have been awarded.
- Grades of "W" or "AUDIT" will not replace previous grades.
- G.I. Bill students and others receiving Veterans Administration benefits are advised that replacement of any grade other than an unsatisfactory grade must be reported to the V.A. and may result in the retroactive reduction of benefits for the semester for which the replaced grade was originally assigned. An unsatisfactory grade may be

replaced without similar consequences. Notify the Veteran Certifying Official when applying to use this option.

- Federal and/or state regulations may supersede portions of this policy. For example, students with financial aid are required to follow federal regulations regarding repeating courses. Please consult with the Office of Financial Aid to check how this policy may impact your eligibility for financial aid.

**Note:** In the future, if you apply for admission to other colleges, universities, graduate, and professional schools, or if your record is evaluated by a national testing agency such as AMCAS or LSDAS, both MC grades will likely be included in the calculation of your GPA.

# Transcripts

## Transcripts

Transcripts can be ordered by letter, on-line (<http://www.getmytranscript.com>), or in person from the Office of the Registrar. To ensure prompt delivery of the transcript, requests should be made at least seven days before the transcript is desired. The established fee for each transcript is five dollars.\* No transcript will be issued for students whose accounts are in arrears.

\*Other fees may apply.

# Withdrawal

## Withdrawal from the College

### Regular Withdrawal

Students currently enrolled in Manhattan College who wish to withdraw from the College, effectively ending their status as matriculated students, must complete the required Manhattan College Withdrawal Form . An appointment should be made with the appropriate Academic Advisor to have an exit interview and to complete the required form. This form must be completely filled out or students will not be eligible for tuition adjustments and may be responsible for paying back any financial aid received from the College. Students will be considered withdrawn on the date that they officially notify the College. Students who withdraw from the College after the last day for course withdrawal will receive a grade of "F" for all courses during the session unless a waiver is granted by the Provost for medical, psychological or emergency reasons. In this case, the student will receive a grade of "W" for all courses during that session.

### Administrative Withdrawal

A student may be administratively withdrawn from the College:

1. If the student fails to register for classes by the end of the add/drop period.
2. If the student fails to attend classes by the end of the add/drop period.
3. If the student has not returned to the College or fails to qualify to return to the College when the approved period of leave of absence has expired.
4. If the student has not returned after academic or disciplinary suspension at the time specified and the period of suspension has not been expended.
5. If in extraordinary circumstances a student is unable or unwilling to request a voluntary leave of absence or a voluntary medical leave of absence and there is a clear need to protect the safety of the student and/or others or to protect the integrity of the College's learning environment.

### Retroactive Withdrawal

Retroactive withdrawals from classes are generally not allowed. Under exceptional circumstances, a retroactive withdrawal may be approved if the issue precipitating the withdrawal has been documented and communicated to a student's advisor before the end of a semester. No retroactive withdrawals will be approved beyond 30 days after the end of the semester.

Medical Withdrawals approved within the 30-day deadline must have an official withdrawal date specified within the term and if no such date is provided, the default date will be one day before the last date of the semester.

### Involuntary Medical Leave

If the College determines that a student should be placed on leave due to medical or psychological reasons related to the health and safety of the student, Manhattan College reserves the right to place a student on an involuntary withdrawal from the student's academic program of study. This may occur when the student is not able or willing to take

a voluntary leave and the College has made a reasonable determination that the student poses a direct threat to the health and/or safety of self and others.

Where Manhattan College believes that an involuntary withdrawal is to be considered, the Dean of Students will identify a team of professionals to make a reasoned determination. Included on that decision-making team will be a medical or mental health professional. The student will be informed of the College's concerns and the pending decision to consider an involuntary withdrawal.

The College reserves the right to notify parents or legal guardians if deemed appropriate under the circumstances and applicable law, including making arrangements for family members to pick the student up from the College's facilities, house the student or obtain health care assistance.

### **Reinstatement Following Withdrawal**

A student who withdraws or is withdrawn from the College may apply for reinstatement. In order to return to the College from a withdrawn status, a student must make a request in writing to their Dean at least eight weeks before the beginning of the semester to which the student seeks to return. The College reserves the right to require, review, and approve documentation that the student is qualified and ready to return to academic work.

In the case of a voluntary withdrawal for medical/psychological reasons or any administrative withdrawal under this policy related to a physical or mental health condition, the student must submit a written progress assessment from a treating health professional as part of the request for reinstatement. The Director of Counseling and Health Services may require a release from the student to discuss current treatment and follow-up needs with the treating health professional, in order to assess whether the student is qualified and ready to return to the College and whether the College can provide the follow-up care needed to maintain the student's enrollment. The Director of Counseling and Health Services approves the return of all students who have withdrawn or been withdrawn for medical or psychological reasons.

Students who are reinstated following a withdrawal from College will comply with the degree requirements of the catalog in effect when they are reinstated.

### **Withdrawal from a Course**

After the Add/Drop period at the beginning of each semester, students are permitted to withdraw from a course without academic penalty until the twelfth week of the semester. The required course withdrawal form is available in the office of their Dean. Withdrawing from a course after the Add/Drop period and before the deadline for all withdrawals places a W on the transcript for that course. After the withdrawal deadline at the end of the twelfth week, the student will receive a grade of F for that course unless there are extraordinary circumstances (such as severe illness) that merit an exception. Students are cautioned to avoid a pattern of regularly accumulating W grades on their transcripts.

### **Course Requirements**

At the beginning of each semester or session, each instructor is expected in each course to state the objectives of the course, indicate the course requirements, and the criteria to be used in evaluating the performance of students. Each instructor is also expected to announce whether a final examination for the course will be given, and likewise will outline

the course requirements and indicate the criteria to be used in evaluating the performance of students.

# Administrative Officers & Staff

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## The President's Office

Brennan O'Donnell, Ph.D., President (2009-)

Veronica Boland, M.S., Executive Assistant to the President (2009-)

Barbara Herlihy, Administrative Coordinator (2011-)

Tamara Britt, J.D., General Counsel for Manhattan College (2017-)

Robert Walsh, M.A., Senior Advisor to the President for Strategic Partnerships (2018-)

Sheetal Kale, J.D., Director of Equity, Diversity and Chief Title IX Coordinator (2018-)

Rose Doyle, B.S., Executive Assistant to the General Counsel (2017-)

## Academic Affairs

Steven Schreiner, Ph.D., Provost and Vice President for Academic Affairs (2020-)

Rani Roy, Ph.D., Associate Provost (2012-)

Carlos Tonche, Jr., J.D., Registrar (2018-)

Carla Fraser, B.S., Associate Registrar (1999-)

Annie-Laurie McKenney, B.A., Assistant Registrar for Scheduling (2002-)

Joseph Priore, B.A., Registrar's Operations Specialist (2019-)

Soohong Kim, Ph.D., Director of Institutional Research, (2019-)

Edward Dee, Ph.D., Director of Assessment, (2020-)

Br. Daniel Gardner, M.A., Assistant Director for Graduate Fellowship (2017-)

Brendan Considine, M.P.A., Director of Grants Administration (2019-)

Irina DeBonis, M.B.A., Grants Coordinator (2020-)

Keith H. Brower, Ph.D., Dean of Arts (2014-)

Dianna H. Cruz, M.A., Asst. Dean and Academic Advisor for the School of Arts (2002-)

Angie Thrapsimis, M.A., Academic Advisor for School of Arts (2007-)

Janet McShane, Ph.D., Interim Dean of Science (2014-)

Darcy A. Lis-Beglane, M.A., Assistant Dean and Academic Advisor for School of Science (1983-)

Kelly Daggett, Ph.D., Director of Chemistry Labs, (2012-)

Donald Gibson, Ph.D., Dean of O'Malley School of Business (1991 -)

Janet Rovenpor, Ph.D., Assoc. Dean of O'Malley School of Business (1988-)



Rhonda Shuler, B.A., Senior Academic Advisor for O'Malley School of Business (2002-)

Aileen Farrelly, M.S., C.P.A., Assistant Dean and Academic Advisor for O'Malley School of Business (2011-)

Richard Ross, M.B.A., Director of External Graduate Programs for O'Malley School of Business (2019-)

Timothy J. Ward, Ph.D., Dean of Engineering (2008-)

Tiffany French, M. A., Assistant Dean of Engineering (2019-)

Charmaine Whitter-White, M.S., Academic Advisor/Engineering (2005-)

Joseph Berger, Supervisor for Technical Computer Support Group (1980-)

Karen Nicholson, Ph.D., Dean of Education and Health (2016-)

Loretta Wilkins, M.A., Assistant Dean and Academic Advisor for Education and Health (1998-)

Kayla Valentino, M.P.A., Program Director for Radiation Therapy Technology (2014-)

Tekeyah Sears, Ed.D., M.P.H., Director for the Allied Health Program (2018-)

Sara Silverstein, M.P.H., Clinical Coordinator for Radiation Therapy Technology (2018-)

William H. Walters, Ph.D., Executive Director for the O'Malley Library (2014-)

Amy Handfield, M.F.A., M.S.-L.I.S., Assistant Director for the O'Malley Library for Access Services (2012-)

Sarah Sheehan, M.S.L.S., M.Ed., Assistant Director for the O'Malley Library for Reference and Instruction (2016-)

Laurin Paradise, M.L.I.S., Reference and Instruction Librarian for the O'Malley Library (2017-)

Susanne Markgren, M.F.A., M.L.I.S., Assistant Director for the O'Malley Library, Technical Services (2016-)

Brendon Ford, Interlibrary Loan Manager and Systems Specialist for the O'Malley Library (2004-)

Amy Surak, M.A., Director for Archives and Special Collections (2002-)

Kimberly Jones Woodruff, M.S., Director for Instructional Design (2011-)

Blair Goodlin, Jr., Ph.D., Instructional Designer (2015-)

Steven Goss, Ed.D., Dean for the School of Continuing and Professional Studies (2020-)

Rosemary Osso, M.S., Assistant Dean for the School of Continuing and Professional Studies (2013-)

Suzanne Schneider, A.B.D., Recruitment Coordinator for the School of Continuing and Professional Studies (1996-)

Kimberly Gargiulo, M.A., Quality Assurance Manager for the School of Continuing and Professional Studies (2019-)

Jeffrey Vanderwerf, Ph.D., Director, Intensive English Language Program for the School of Continuing and Professional Studies (2016-)

Pamela Jimenez, M.S., Director for the Camino English Language Program (2017-)

Janelle Torris, M.S., Manager of the Camino English Language Program (2019 -)

Tiana Sloan, B.S., Director of Veteran Success Programs (2012-)

Joseph Ruggiero, B.A., Producer/Director for Communication (2019-)

Ricardo A. Dello Buono, Ph.D., Director for Study Abroad (2009-)

Erinn Kehoe, M.A., Assistant Director for Study Abroad (2019-)

Alexandra DeStefano, B.A., Study Abroad Exchange Partnership Manager (2020-)

Edgar Zavala, M.Sc., Director for Non-Credit Programs, (2018-)

Ashley Hernandez, B.A., C-Step Coordinator, Opportunity Programs (2017-)

Marisa Sarlo-Passafiume, MS.Ed., Assistant Vice President for the Center for Academic Success (2011-)

Andrew Burns, M.Sc., Director of Opportunity Programs (CSTEP & HEOP) (2017-)

Elena M. Caminito, M.A., Associate Director for the Higher Education Opportunity Program / Operating (1989-)

Sujay Ramos, Ed.M., Director / Center for Academic Success (2013-)

Acacia Mauriello, B.A., Retention Specialist for the Center for Academic Success (2017-)

Amani Tatum, B.A., Student-Athlete Coordinator for the Center for Academic Success (2018-)

Katherine Torode, M.S., Senior Student-Athlete Coordinator for the Center for Academic Success (2020-)

Qua-Asia Fawcett, B.S., Academic Support Manager for Center for Academic Success (2019-)

Anne Vaccaro, M.S., Director for Learning Disability Services (1992-)

Juanita Pacheco, B.S., Accommodations Administrator for Academic Services (2017-)

Anne Morrison, M.A., Assistant to Provost (2002-)

## **Information Technology**

Jake D. Holmquist, B.S., Chief Information Officer (1998-)

Kevin Clancy, M.B.A., Deputy Chief Information Officer (2014-)

Cynthia P. Duggan, Ph.D., Director for Web Applications (1994-)

Robert Moran, B.S., Director for Enterprise Architecture (2001-)

Melvin Lasky, M.S., Associate Director for Enterprise Architecture (2011-)

Michael T. Reinhart, M.B.A., Senior Assistant Director for Enterprise Applications (1995-)

Jason Caban, M.S., Associate Director for Enterprise Applications (2001-)

Stacey Frye, B.A., Network Engineer (2016-)

Kelvin Moreaux, M.S., Sr. Programmer / Analyst II (2006-)

Eileen McIntyre, M.B.A., Helpdesk Manager (1987-)

Ananda Das, M.S., Sr. Web Developer II (2005-)

Richard Musal, M.A., Director for Client Services (2003-)

John McCabe, B.S., Sr. Security Manager & Data Protection Officer (2012-)

Susanne Leavey, B.S., Information Technology Services Training Manager (2020-)

Michael Fulton, B.A., Web Application Programmer (2018-)

Quasi Bodkin, M.S., IT Support Specialist of Client Service Operations (2019-)

Yony Fernandez, B.A., Jr. Web Programmer (2017-)

Luis Salazar, M.S., System Network Administrator (2018-)

Magdalen Michalczyk, M.S., System Administrator (2017-)

## **Enrollment Management**

Colette Geary, Ph.D., Interim Vice President for Enrollment Management (1997-)

Denise Scalzo, M.A., Director for Financial Aid (2015-)

Mercy Alonso, M.A., Sr. Associate Director for Financial Aid Administration (2004-)

Adeline J. Newman, B.S., Associate Director for Financial Aid Administration (2017-)

Allyson Fucci, M.S., Sr. Assistant Director for Financial Aid Administration (2014-)

Werner Haberman, B.A., Assistant Director for Customer Services & Student Employment Coordinator (2017-)

Caitlin Twomey, B.A., Assistant Director for Financial Aid Operations and Financial Aid Analyst (2016-)

William Puelo, M.B.A., Assistant Director for Financial Aid & Student Employment (2020-)

Tara Fay-Reilly, M.S., Director for Undergraduate Admissions (2018-)

Jacqueline Santiago, B.S., Assistant Director of Undergraduate Admissions (2019-)

Evelyn Orellana, B.A., Sr. Assistant Director for Admissions (2016-)

Nicholas Marter, B.A., Assistant Director for Admissions (2018-)

Elizabeth Allen, B.A., Assistant Director for Admissions (2018-)

Siraj Bah, M.P.A., Assistant Director for Admissions (2018-)

Colette Cook, B.S., Assistant Director for Admissions (2019-)

Gianni Greene, B.S., Admissions Counselor (2019-)

Dmitry Satsuk, M.A., Director for International Admissions, Financial Aid (2017-)

Kevin Taylor, M.B.A., Director for Graduate Admissions (2020-)

Doina Lawler, M.B.A., Assistant Director for Graduate Admissions (2016-)

Deanna Cruz, M.B.A., Assistant Director for TAP and Veteran Certification (2012-)

## **Student Life**

Richard T. Satterlee, Ph.D., Vice President, Student Life (2010-)

Karla Ward, B.S., Executive Assistant to Vice President, Student Life (2014-)

Esmilda Abreu-Hornbostel, Ph.D., Assistant Vice President & Dean of Students (2020-)

Emmanuel Ago, Ed.D., Assistant Vice President for Student Life (2011-)

A.J. Goodman, M.S., Assistant Dean of Students (2013-)

Hayden Greene, M.A., Director for Multi-Cultural Affairs (2016-)

Fiona Delaney, M.S., Associate Director for Orientation and New Student Programming (2006-)

Jahangir Ahmed, M.P.A., Dir. for Fitness, Wellness & Recreation (2018-)

Charles Clency M.S., Director for Residence Life (2018-)

Pierre Campbell, M.Ed., Assistant Director for Housing Operations (2019-)

Toni Baisden, M.A., Assistant Director for Residence Life, Student Conduct (2014-)

Micah Thomas, M.A., Area Coordinator/Residence Life (2019-)

Sharon Phelan, M.A., Assistant Director for Operations, Residence Life (2014-)

Marilyn Carter, M.S., Director for Commuter Services and Outreach (1988-)

John Bennett, M.A., Executive Director for Student Engagement (2009 -)

Michael Steele, M.B.A., Assistant Director for Student Engagement, (2010-)

Deanna Hewlett, M.S., Recreation Coordinator for Student Engagement (2018-)

Sharon Jimenez, Coordinator for Student Engagement (2013-)

Jessica Aviles, M.S., Director for Event Services, (2014-)

Andrew Goodman, B.A., Director for Campus Events (1990-)

Andrew Bauer, M.A., Director for Performing Arts, (2012-)

Debra L. Damico, M.A., Director for International Student Scholar Services (1984-)

Rachel Cirelli, M.Ed., Director for Career Development (2014-)

Sharon Teta D'Amelia, M.S., Assistant Director for Career Development (2011-)

Caitlin Duggan, B.A., Associate Director for Employer Relations (2018-)

Christopher Cerutti, M.A., Career Counselor for Career Development (2018-)

David Belson, M.Ed., Career Counselor for Career Development (2018-)

Br. Ralph Bucci, F.S.C., Recruitment Coordinator (2018-)

Jennifer McArdle, M.A., Director for Counseling/Health Services (2000-)

Christin Nedumchira, Psy.D., Staff Psychologist for Counseling/Health Services ( 2013-)

Briana Azzarelli, L.M.S.W., Staff Counselor for Counseling/Health Services (2019-)

Nicol Zambrano, M.A., Staff Counselor (2017-)

Carol Ciancutti, M.H.C., Alcohol & Other Drug Counseling, (2019-)

Carl Franzetti, M.D., College Physician (2003-)

Anne Mavor, M.S.N., Director for Health of Health Services (2018-)

Carolyn McKay, M.S.N., Nurse Practitioner, (2019-)

Michele Reyes, B.S., Assistant Director for Health Services (2008-)

Lois Harr, M.A., Assistant Vice President / Director for Campus Ministry and Social Action (1998-)

Rev. Thomas Franks, O.P.M., Cap., M.Div. / College Chaplain (2017-)

Conor Reidy, M.P.A., Campus Minister (2013-)

Kathleen Von Euw, M.P.A., Assistant Director of Community Engagement & Partnerships(2014-)

Jacqueline Martin M.S., Coordinator for Social Action & Campus Ministry (2018-)

Peter DeCaro, B.S., Director for Public Safety (2016- )

David Erosa, M.S., Associate Director for Public Safety (2008-)

Anthony Paliotta, B.S., Assistant Director for Public Safety (2020-)

Angelica Vazquez, M.P.A., Assistant Director for Operations / Public Safety (2016-)

Marianne Reilly, M.A., Director for Intercollegiate Athletics (2016-)

Anthony Vecchione, M.A., Deputy Director for Athletics (2015-)

Kathryn Mirance, M.S., Assistant Director for Athletics Finance SWA (2016-)

Whitney Swab, B.S., Associate Director for Athletics, Marketing, Fan and Donor Engagement (2017-)

Kelly Carroll, M.S., Assistant Director for Sports Communication (2017-)

Salvatore Lamonica, B.A., Assistant Director for Athletic Facilities & Events (2018-)

Douglas Straley, M.S., Associate Director for Athletics/Director for Sports Medicine and Athletic Performance (2003-)

Jaclyn Rettig, B.S., Assistant Director for Sports Medicine (2017-)

Lea Georgatos, B.S., Athletic Trainer (2019-)

Samantha Gigante, M.B.A., Assistant Athletic Trainer (2009-)

Kevin Ross, M.A., Director for Athletic Communications Media Relations (2014-)

Charles Lippolis, M.S., Coordinator for One Card Office & Special Projects (2011-)

## **Business and Finance**

Matthew McManness, M.S., Vice President for Finance (2015-)

Anne Marie Colon, Executive Assistant to the Vice Presidents for Finance & Facilities (2013-)

Lisa Juncaj, B.A., Director for Business Systems (1995-)

Christina Cardinale, B.S., Assistant Director for Student Accounts/Bursar Svcs. (2001-)

Nancy D. Hesselbacher, M.B.A., Student Account Analyst (2011-)

Debra McGuinness, B.S., Student Accounts Coordinator (2013-)

Dennis Lonergan, B.B.A., Assistant Vice President for Finance & Controller (2006-)

Denise Fox, M.B.A., Associate Controller (2012-)

Catherine DeLoughry, B.S., Assistant Controller (2014-)

Ramon Jacques, A.A.S., I/A Technical Supervisor (2001-)

Marian O'Connor, M.S., Grants Accountant (2012-)

Judy Cases, Accountant (2001-)

Eileen Duarte, B.B.A., Assistant Controller, Payroll Operations Mgr. (2010-)

Joanne Gans, B.A., Payroll Manager (1998-)

Kristine Ianniello, Assistant Payroll Manager (2019-)

Kenneth Waldhof, B.S., Director for Business & Conference Services (2013-)

Elena Mastrangelo, B.S., Associate Director for Purchasing Operations (2002-)

Michele Famularo, B.P.S., Associate Director for Business Manager (2014-)

Heaven Sepulveda, B.S., Conference Services Manager (2020-)

Rosemary Jimenez, Telecommunications Coordinator (1989-)

Donald Durney, Assistant Director for Mailroom and Receiving (1995-)

## Human Resources

Barbara A. Fabé, B.A., Vice President for Human Resources (1988-)

Vicki M. Cowan, M.A., PHR, Assistant Vice President for Human Resources and Affirmative Action Officer (1989-)

Eileen Armstrong, Director for Benefits & Compensation (2005-)

Patricia Stone, B.S., Human Resources Manager (1996-)

## Facilities Management

Gregory Cowart, M.A., Project Manager (2012-)

Richard E. McKeown, B.S., Director for Physical Plant (1997-)

Victor Schneider, B.S., Assistant Director for Physical Plant (1998-)

## Mission

Br. Jack Curran, F.S.C., Ph.D., Vice President for Mission (2013-)

Jamie Walsh, B.S., Executive Assistant to the Vice President for Mission (2019-)

## College Advancement

Thomas Mauriello, M.S., Vice President for College Advancement (2006-)

Stephen White, M.S., Assistant Vice President for Advancement (2007-)

Elizabeth Plaushin, J.D., Director for Planned Giving (2019 -)

Kathleen Muskopf, M.A., Director for Principal Gifts (2007-)

Kin Lazzaro, B.S., Director of Development Operations/Annual Giving (2019=)

Kevin Courtney, B.A., Director for Capital Campaign (2016-)

Frederick Lash, M.A., Major Gifts Officer (2017-)

Joseph Gallagher, B.A., Major Gifts Officer (2017-)

Elizabeth O'Keefe Cleary, B.A., Major Gifts Officer (2018-)

Barbara A. Higgins, M.A., Coordinator for Research (1975-)

Nicholas Lakoumentas, M.B.A., Manager for Prospect Research (2013-)

Kristen Farrell, M.A., Director for Institutional Giving & Special Programs (2018-)

Louis Calvelli, M.S., Director for Alumni Relations (2017-)

Bernadette Bauer, B.A., Assistant Director for Alumni Relations (2018-)

Olympia Manole, B.S., Alumni Relations Coordinator (2015-)

Claudia Cardona, B.A., Manager for Advancement Series (2015-)

Barry Moskowitz, M.A., Development Writer (2018-)

Adriana Carvalho, M.S., Executive Assistant to the Vice President/Advancement (2018-)

Lydia E. Gray, M.A., Assistant Vice President for College Advancement, Executive Director, Marketing and Communications (1980-)

Patricia Gunn Doherty, Director for Special Events & Commencement (1992-)

Kristen Cuppek, M.A., Director for Publications and Editorial Services (2002-)

Tracy Turner B.A., Senior Graphic Designer (2020-)

Peter McHugh, M.S., Director for Media Relations & Strategic Communications (2013-)

Tracy Guyton, B.A., Director for Web Communications (2017-)

Laura V. Meoli-Ferrigon, B.A., Senior Digital Media Producer (2018-)

Gail A. Conklin, Events Manager for Special Events and Commencement (1993-)

Christine Loughran, B.S., Assistant Director for Web Communications (2015-)

Cecilia Donohoe, M.A., Assistant Director for Editorial Services (2019-)

*Dates in parentheses indicate years of service in the College and not necessarily appointment to the current position.*



# Admissions

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An application for admission to Manhattan College may be submitted using the Common Application (<https://www.commonapp.org/>), Coalition for College Application (<https://www.coalitionforcollegeaccess.org/>), or a paper Manhattan College Application (<https://manhattan.edu/admissions/undergraduate/apply.php>), which can be found on the College's website. An application fee of \$75 is required. In some cases, a student may be financially eligible for a fee waiver from the College Board or NACAC, issued by their high school counselor.

## Freshman Admissions

### Course Selection and Performance

In reviewing applications for admission, the following items are considered by the Committee on Admissions.

Most emphasis is placed upon student course selection on the secondary level and grades earned in those subjects.

All applicants must have completed a minimum of 16 units in academic subjects which should include the following

Subject	Required Units	Recommended Units
English	4	4
Modern or Classical Language	2	3
Science (Lab Sciences)	2	4
Mathematics*	3	4
Social Studies	3	4
Electives	2	

At the discretion of the Committee on Admissions, quantitative requirements may be modified for applicants with strong records who show promise of doing well in college work.

\* This includes algebra, geometry, intermediate algebra/trigonometry (sequence I, II and III).

## SAT and/or ACT Scores

The Committee on Admissions requires all U.S. applicants for freshman admission to submit SAT or ACT scores. The Committee on Admissions will pilot a test-optional policy for fall 2021 to eliminate some of the challenges students have faced due to COVID-19.

Students applying for the fall 2021 semester will choose whether or not to submit their SAT/ACT test scores. If a student does submit their test score, only a student's highest scores will be considered for admission and scholarship eligibility. While these scores are an important part of an application, they are considered in combination with other requirements. SAT or ACT scores allow the Committee to see how well applicants do

in areas fundamental to predicting college readiness, using a third-party tool that is not influenced by local grading practices. In that regard, they are helpful. However, we are aware that tests have limitations, and place higher emphasis on high school curriculum and grade point average.

The Committee on Admissions will accept both the SAT (pre- spring 2016), the redesigned SAT. The Committee will use concordances (how scores from one version translate into the other one), released by the College Board to ensure that neither score is advantaged over the other, even if the numeric scores are slightly different. It is recommended that students submit the optional essay component of the redesigned SAT exam.

## Recommendations

Grades and examination scores alone do not adequately evaluate a student's ability to be successful in college. Therefore, appropriate character references are considered important when reviewing candidates for admission. One letter of recommendation from a teacher or guidance counselor is required. Applicants may submit up to three academic letters. Students are also permitted to submit an additional character reference.

## Essay or Personal Statement

Applicants must submit a brief personal statement or college essay, using either the Manhattan College essay topic or one of the Common Application essay topics listed below:

1. Some students have a background, identity, interest, or talent that is so meaningful they believe their application would be incomplete without it. If this sounds like you, then please share your story.
2. The lessons we take from failure can be fundamental to later success. Recount an incident or time when you experienced failure. How did it affect you, and what did you learn from the experience?
3. Reflect on a time when you challenged a belief or idea. What prompted you to act? Would you make the same decision again?
4. Describe a problem you've solved or a problem you'd like to solve. It can be an intellectual challenge, a research query, an ethical dilemma - anything that is of personal importance, no matter the scale. Explain its significance to you and what steps you took or could be taken to identify a solution.
5. Discuss an accomplishment or event, formal or informal, that marked your transition from childhood to adulthood within your culture, community, or family.

This essay should be no longer than 650 words.

## The General Equivalency Diploma (G.E.D.)

Accepted in lieu of a high school diploma for admission to some programs of the College.

Please note that the Committee on Admissions requires students to submit a record of any high school coursework taken even if a student is submitting G.E.D. scores.

## Committee on Admissions

In rare instances, the Committee on Admissions will consider waiving the above requirements for admission. Please contact the Office of Admissions for further information.

## Campus Visit

A visit to the Manhattan campus is strongly recommended to all prospective students. Information sessions and campus tours are offered daily Monday through Friday at 10 a.m. and 2 p.m. Students may register by calling the Admissions Office at 718-862-7200.

In the fall, additional information sessions are offered on Saturday mornings. In addition, students are welcome to arrange appointments outside of these times by coordinating their visit with the Office of Admission.

Interviews are recommended but not required as part of the admissions process. Students may arrange to have an interview with a member of the admissions staff by contacting the Office of Admission in advance to setup an appointment. Students are encouraged to submit an application before setting up an official interview.

## Early Decision

For those students who consider Manhattan College their top choice, the Early Decision Program affords them the opportunity to apply and receive a decision earlier in the admissions cycle. The Early Decision Program is binding, if a student is accepted under this program they must enroll at Manhattan College and withdraw all applications for admission to other institutions.

Students who wish to be considered for the Early Decision Program must complete a Manhattan College Early Decision Agreement form, which is signed by the student, parent and school counselor. Students must also submit a completed application for admission and all supporting documents to the College by November 15. Students will be notified of a decision by mid-December.

If the Admissions Committee determines that they need to evaluate updated academic information in order to make an enrollment decision, a student's application would be rolled over into the regular decision pool, at which point the student would be released from the binding agreement.

## Scholarship Applicants

All applicants will be considered automatically for merit-based scholarships.

## Admissions Process

Manhattan will consider for admission any qualified student upon completion of the junior year. Students must present required academic credentials and qualifications for admission. It is important to note that students must continue to demonstrate progress at the same academic level in their senior year and that all secondary school graduation requirements must be met, and a diploma issued, in order to enroll. Students must submit an official final transcript with a graduation date in order to matriculate at the College.

## Notification of Admission

Applications will be reviewed on a rolling admission basis. When a student has filed a completed application (high school transcript, test scores, college essay and recommendations) with the Office of Admissions, the Committee will act upon it. Students will be notified of their admissions decision via mail. In many cases, before a decision is made, students will be asked to submit copies of their senior grades in January. All acceptances are contingent upon the successful completion of senior year of high school and proof of graduation.

## College Credit

Students completing college-level work completed in high school may be awarded transfer credit. Students must submit an official, seal-bearing transcript from an accredited college/university demonstrating satisfactory achievement. In some cases students may be asked to submit a catalogue description and syllabus for courses in order to determine the appropriateness of the coursework as it relates to the students intended program of study.

Each transcript should be sent to the Office of Admissions and will be considered by the Academic Dean and/or Academic Advisor in the School the student has been accepted into.

A student's assigned Assistant Dean and/or Academic Advisor will work with students receiving college credits from high school to make any changes necessary in their programs of study.

## Advanced Placement

Advanced Placement Examinations given by the College Entrance Examination Board may be considered for Manhattan College credit. Official scores from these exams should be sent to the Office of Admissions as soon as they become available. Credit may be awarded for an exam score of four or five at the discretion of the Dean of the school the student has been accepted into.

A student's assigned Assistant Dean and/or Academic Advisor will work with students receiving advanced placement credits to make any changes necessary in their programs of study.

## College Proficiency Examination Program (CPEP)

Manhattan College is a participant in the New York State College Proficiency Examination Program (CPEP) and subscribes to its policy of credit by examination regardless of the individual's background or formal preparation. For further information, contact:

CPE Program  
Cultural Education Center  
Albany, New York 12230

## College Level Examination Program (CLEP)

Newly matriculated students may apply for CLEP credit for examinations taken prior to matriculation. Students enrolled in the college will not be given credit for CLEP tests. The

minimum CLEP score for credit will be 50. A higher minimum score for “level 2” credit for foreign languages will be required. The college will follow the American Council on Education (ACE) guidelines for awarding credit. Individual departments should examine the minimum score and number of credits for CLEP examinations. For further information, contact:

College Board  
P.O. Box 6600  
Princeton, NJ 08541

## International Baccalaureate

Manhattan College welcomes applicants with International Baccalaureate credits or the International Baccalaureate diploma. Manhattan will grant credit for higher-level examination scores of 5, 6 or 7 if the examination is in an appropriate academic area. The Dean of each school will make the decision on appropriate academic level in consultation with individual departments.

## Student Status

Qualified persons may be admitted to either matriculated or non-matriculated status.

1. **Matriculated Students:** students who have completed the equivalent of a regular college preparatory program in high school or beyond and meet the normal entrance requirements of the program for which they have applied. They are considered to be candidates for a Manhattan College degree in the program for which they are enrolled at the college. In order to be matriculated, applicants must present to the Office of Admissions an application for admission with all supporting documents to indicate that they are qualified for matriculation to the college. Only the Office of Admissions can allow applicants to matriculate.
2. **Non-matriculated Students:** students who are academically qualified persons following one or more regular courses without the intention of earning a degree at Manhattan College. Applicants wishing to enroll as non-matriculated students must apply to the Office of Admissions and present evidence that meets requirements for admission. In exceptional circumstances, the Committee on Admissions may invite a candidate who does not qualify for matriculated status to enter the college as a non-matriculated student for a limited period of time. The student must, in turn, demonstrate adequate preparation and motivation to pursue the program of studies for which they have applied. Non-matriculated students may not pursue more than 9 credits at Manhattan College. The student's program will be prescribed by the Dean of the school in which the student will be registered. Qualified non-matriculated students who wish to pursue more than 9 credits\* at Manhattan must apply formally to the Admissions Office for matriculation.

- \* With the recommendation of the Dean or Provost, non matriculating students may receive permission to register for more than 9 credits of coursework. In such cases however, permission must be granted in writing from the Office of Admissions.

Non-matriculated students may fall into either one of the following categories:

1. **Non-degree Students:** students who are matriculated at another institution and wish to follow a course or courses for credit at Manhattan College. All such students must present to the Office of Admissions official correspondence noting good standing, together with an authorization to follow courses from a responsible official of the college at which they are matriculated.
2. **Auditors:** non-matriculated students may audit one or more course with the clear understanding that no college credit will be earned. All persons must apply to the Office of Admissions and present evidence that they are qualified to follow the courses which they request.

## International Students

An international student is categorized as a foreign-born person who is not a citizen, national, or permanent resident of the United States, nor individuals who have been granted asylum or refugee status. Applicants who have applied for residency or citizenship must provide all application materials necessary to be considered for international admission until residency or citizenship has been granted. Students who are currently granted classification as Deferred Action for Childhood Arrivals (DACA) and students who currently reside in the United States on expired visas (undocumented students) are not considered as international students.

Persons in F-2 status may apply for admission to the College as non-degree or degree-seeking students. An F-2 dependent may study part-time in any approved program at an SEVP-certified school. An F-2 dependent is a spouse or minor child of the F-1 student who meets all of the following conditions:

- Has been issued a Form I-20, 'Certificate of Eligibility for Non-immigrant Student Status';
- Holds F-2 immigration status; and
- Has been admitted to the United States in F-2 status or applied for and been granted a change of status to F-2 in the United States by U.S. Citizenship and Immigration Services (USCIS).

An F-2 dependent may enroll in a combination of online and in-person classes that is less than a full course of study as defined by regulations. At Manhattan College, full-time undergraduate equivalency is 12 credit hours or more per semester. Full-time graduate enrollment is 9 credit hours or more per semester.

## International Freshman Admissions

International applicants are reviewed on a case-by-case basis. Applicants must complete a full sequence of university-preparatory studies that would qualify for admission to post-secondary studies in their home country. In general, students who present a minimum 2.5 cumulative grade point average from university preparatory studies are considered for admission. This requirement is equivalent to the twelve-year program of elementary, middle, and high school in the United States.

## International Transfer Students

Manhattan College welcomes international students with academic credit from other institutions. In general, students who present a minimum 2.5 cumulative grade point average from previous university-level coursework are considered for admission. University-level coursework completed at approved, accredited international institutions will be considered for transfer credit on a course-by-course basis. Academic performance at international institutions will be converted to a 4.0 scale for U.S. equivalency.

## Application Requirements for International Students

1. Complete the online international student application for admission. The \$75 application fee is required. Manhattan College does not grant application fee waivers to international students.
2. Submit secondary (high school) records or national exams if applicable:
  - a. Transcript of courses with grades/marks; (with English translations as applicable.)
  - b. Students with British system O-level examinations must present a minimum of 5 passes with credit.
  - c. To meet admission deadlines, students who apply before completing the final term of secondary school will be admitted contingent upon satisfactory completion of secondary school. After completion of secondary school, documentation of graduation and/or completion of official examination results are required.
- Proof of English Proficiency (Submit one of the following):
  - a. IBT TOEFL of 80 or higher;
  - b. IELTS score of 6.5 or higher;
  - c. SAT score of 500 or higher in Verbal;
  - d. Successful completion of English Composition I and/or II courses at a US regionally accredited college or university
  - e. Duolingo English test of 105 or higher;
  - f. Successful completion of International Baccalaureate Diploma;
  - e. Successful completion of level 112 or higher at an accredited ELS English Language Center;
  - g. Successful completion of the IELP Level 6.

## Conditional Admission

Students are eligible for conditional admission if they have completed and submitted all required admission materials with the exception of required proof of English proficiency.

## International Student Visa Requirements

To receive the I-20 form international applicants must submit the following documents:

- Official bank documents to provide evidence of adequate financial support (in U.S. dollars) for one year of study at Manhattan College
- Certificate of Financial Responsibility
- Copy of valid passport

- Complete a Transfer Recommendation Form and furnish a copy of a valid visa and I-20 from the last school attended in transferring to Manhattan College from an institution in the U.S.

## **Intensive English Language Program (IELP)**

The Intensive English Language Program (IELP) provides academically qualified undergraduate students who do not meet English proficiency requirements conditional admission to Manhattan College. In addition to intensive language coursework, the Program includes tutoring, peer mentoring, and integration into campus life.

Students who wish to participate in this program must submit a completed application, \$75 application fee, essay, all secondary and post-secondary school transcripts translated into English, and an affidavit of financial support. Students may submit TOEFL or IELTS scores, however, they are not required for admission to the program.

The mission of the IELP is to bring non-native speakers up to college-level proficiency in English speaking, listening academic reading, and academic writing. Courses in this program are designed prepare students for the rigors of a college level curriculum with a particular focus on critical reading, speaking and presenting, listening, comprehension and grammar / vocabulary.

Students are tested upon arrival to campus and are placed into the appropriate course level based on their writing and speaking ability. Manhattan College offers two sections in beginner, intermediate and advanced level course curriculums. Students must successfully complete Level 5 for full admission into an undergraduate program and Level 6 for full admission to a graduate program.

## **Transfer Admission**

All of the below credentials must be on file in the Admissions Office before an application is reviewed for admission. With the information provided, the Committee on Admissions will make a preliminary evaluation of a student's record.

Generally, students transferring to Manhattan are expected to have a minimum 2.50 cumulative average at the institution where they are currently enrolled. Admissions standards will vary depending upon the space availability in the specific program. The applicant will be notified by mail of their acceptance or rejection. All acceptances for students who have work in progress at another college or university are conditional upon successful completion of work in progress with a minimum index of 2.50.

1. Official final high school transcript
2. Official college transcript(s) from all colleges attended
3. A list of courses presently being taken
4. Applicants must submit a brief personal statement or college essay
5. SAT and/or ACT Score Report (Applicants applying with less than 15 college level credits)
6. (If Applicable) A.P. and/or I.B Score Report



## **Additional Requirements**

### **Transfer Applicants to the Department of Radiological and Health Professions**

After an initial academic review, applicants to the Nuclear Medicine Technology, Radiation Therapy Technology or Radiologic Technology program may be required to interview with the program coordinator for their area of interest. Space is limited in these programs and students are encouraged to apply prior to May 1<sup>st</sup> for the fall semester (and before Nov. 15<sup>th</sup> for the spring term).

## **Transfer Credit Policy**

Within a few weeks of receiving an acceptance decision, students will also be informed of the number of transfer credits granted. Credit will be granted only for specific work when completed at accredited institutions whose quality and course content have been approved by the college. Ordinarily, transfer students must earn fifty percent (50%) of the credit necessary for graduation at Manhattan College. This will normally take four semesters of study in-residence. "P" grades may be accepted for credit but only if they represent a "C" or better as defined by the regulations of the institution of origin. Grades earned at other institutions will not be transferred to the student's record at Manhattan College. Additionally, there shall be no grades entered in the student's record for A.P., CLEP or I.B. credits.

## **Transfer Scholarship Opportunities**

All accepted transfer students will be considered for academic scholarships during the application evaluation process. Qualified students will receive a scholarship notification letter in the mail within a few weeks of receiving their initial acceptance decision.

Transfer students who receive one of our Presidential, Dean's or Chancellor's Awards have demonstrated exemplary scores with college level course work. To be eligible for renewal of their merit scholarship, recipients must maintain a minimum grade point average of 3.0 while in attendance at Manhattan College.

## **Certificate Program Admission: Radiological and Health Professions**

### **(Nuclear Medicine Technology and Radiation Therapy Technology)**

All of the below credentials must be on file in the Admissions Office before an application is reviewed for admission. With the information provided, the Committee on Admissions will make a preliminary evaluation of a student's record. Space is limited in these programs and students are encouraged to apply prior to May 1<sup>st</sup> for the fall semester (and before Nov. 15<sup>th</sup> for the spring term).

Generally, students entering one of the certificate programs are expected to have a minimum 2.50 cumulative average at the completion of their undergraduate degree program. Admission standards will vary depending upon the space availability in the specific program. The applicant will be notified by mail of their acceptance or rejection. All acceptances for students who have work in progress at another college or university are conditional upon successful completion of work in progress with a minimum index of 2.50.

1. Official college transcript(s) from all colleges attended
2. A list of courses presently being taken (if applicable)
3. 350-500 Word Essay – Explain short and long term career goals
4. Resume
5. Interview with the Program Coordinator
6. A \$75 application fee is required

### **Credit Policy**

Credit will be granted only for specific work when completed at accredited institutions whose quality and course content have been approved by the college. Grades earned at other institutions will not be transferred to the student's record at Manhattan College. Additionally, there shall be no grades entered in the student's record for A.P., CLEP or I.B. credits.

## **Veteran Admission**

For all branches excluding the Air Force, if the only coursework completed (aside from high school) is that work listed on the Joint Services Transcript, you should apply to the college following the freshman applicant guidelines.

Applicants that have served in the Air Force and have a CCAF/Air Force University or Joint Services Transcript and anyone that has completed college level coursework online or at a college campus prior to/during/after your military service, will apply to the college following the transfer applicant guidelines.

While a majority of the coursework from the Joint Services Transcript will not be transferrable, we do require that you submit the document for review. The letter of recommendation can be completed by a commanding officer, high school teacher, employer or college professor.

After an acceptance decision is made, students should submit the DD214 and Certificate of Eligibility to the Admissions Office as soon as possible. The Office of Financial Aid Administration, is responsible for arranging any V.A. benefits. Veterans should bring a copy of their DD 214 form to the office with their letter of acceptance. The eligibility for the V.A. benefits is for the semester or session for which they are in attendance. To continue to be eligible for these benefits in subsequent semesters, veterans must report to the Office of Financial Aid Administration to renew the certification of attendance at the beginning of each semester for which they are registered.

The following information is important:

- a. Veterans are paid benefits for actual credit hours in attendance. Twelve semester hours is considered full time for V.A. benefits.
- b. Any change of status—withdrawing from a course, non-attendance in a particular semester, failure to register for a subsequent semester—must be reported by the student to the Office of Financial Aid Administration immediately.

## **Readmit Students**

Any student who unofficially or officially withdraws from the College must be readmitted through the Office of Admissions. Credits earned at other institutions after leaving Manhattan College will be evaluated according to existing school policies.

Students returning after an official leave of absence will be readmitted by the Dean's Office that initially granted the leave. Only students making satisfactory progress will be granted an official leave of absence. With approval, a student can take a leave of absence not to exceed one year. Students transferring to another school within the College must first seek clearance from the original Dean.

## **Programs of Credit by Examination**

Credit by examination will be awarded only for courses in consonance with the prescribed or elective courses applicable to the degree. Such credit is awarded and will be so identified on the student's record after they have registered and are attending class. The academic Dean concerned determines courses which are equivalent to the examinations taken.

Total credit by examination to entering, as well as to enrolled students, in any or all programs in which the college participates, may not exceed one-fourth of the total number of credit hours normally required for the degree. No grades are assigned to courses credited.

# Board of Trustees

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Chairman and CEO, American Express

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Helen Hollein, Manhattan College  
Professor Emeritus of Chemical Engineering

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Retired Partner, PricewaterhouseCoopers LLP

Michael Regan  
Retired Vice Chair & CAO, KPMG LLP

# Academic Calendar\*

## 2020 Fall Semester

Month	Date	Day	Event
August	31	Monday	Classes Begin
September	07	Monday	Late Registration & Add/Drop ends
September	07	Monday	Labor Day – No Classes
September	15	Tuesday	Senate Meeting
October	12	Monday	Fall Break – No Classes
October	13	Tuesday	Monday Schedule
October	20	Tuesday	Mid-Term Grades Due
October	20	Tuesday	Senate Meeting
November	02	Monday	Web Registration Begins - Spring 2021
November	17	Tuesday	Senate Meeting
November	20	Friday	Last day to withdraw from courses
November	25 - 27	Wed-Fri	Thanksgiving Holiday – No Classes
December	11	Friday	Last Day of Classes
December	14 - 19	Mon-Sat	Finals Week– Winter Recess Begins after Last Examination
December	21	Monday	Fall 2020 Online Grading closes

## 2020-2021 Winter Intersession

Month	Date	Day	Event
December	21	Monday	Classes Begin
December	24 - 31	Thu-Thu	Christmas Break-College Closed
January	01	Friday	New Year's Holiday - College Closed
January	15	Friday	Last Day of Winter Intersession

## 2021 Spring Semester

Month	Date	Day	Event
January	20	Wednesday	Classes Begin
January	26	Tuesday	Late Registration & Add/Drop Ends
February	02	Tuesday	Deadline to submit incomplete work to Faculty for Fall 2020
February	08	Monday	Deadline for Faculty to submit grades for Fall 2020 'I' Grades
February	16	Tuesday	Senate Meeting
March	11	Thursday	Mid - Term Grades Due
March	15 -19	Mon-Fri	Spring Break
April	01 - 05	Thurs-Mon	Easter Holiday - No Classes

April	06	Tuesday	Web Registration begins for Fall 2021
April	07	Wednesday	St. De La Salle Day: The Feast of St. John Baptist de la Salle, Patron of Teachers
April	07	Wednesday	Monday Schedule
April	20	Tuesday	Senate Meeting
April	21	Wednesday	Last day to withdraw from courses
May	07	Friday	Last Day of Classes
May	08 - 09	Sat-Sun	Reading Days
May	10 - 15	Mon-Sat	Finals Week
May	16 - 20	Sun-Thurs	Senior Days
May	17	Monday	Summer Session I Begins
May	18	Tuesday	Spring 2021 Online Grading closes at 12 noon
May	19	Wednesday	Spring Commencement (GM & SCPS Division)
May	21	Friday	The One Hundred and Seventy-Ninth Commencement (Undergraduate)
June	29	Tuesday	Deadline to submit incomplete work to Faculty for Spring 2021
July	05	Monday	Deadline for Faculty to submit grades for Spring 2021 incompletes

## 2021 Summer Sessions

Month	Date	Day	Event
May	17	Monday	Summer Session I begins (7 and 14 week sessions)
July	02	Friday	Summer Session I ends
July	06	Tuesday	Summer Session II begins
August	23	Monday	Summer Session II ends

*\* Manhattan College reserves the right to make changes as circumstances require.*

## Special Sessions

The College provides special sessions in January, May, and during the summer. These special sessions are scheduled primarily for the benefit of students matriculated at Manhattan College but are also open to properly qualified applicants from other accredited institutions. By attending a special session a student may lighten his/her course load for subsequent periods of instruction, make up for deficient credits, or elect extra credits to diversify and enrich his/her academic program. A student may be required to attend a special session if his/her scholastic performance is poor, or if his/her record contains D or F grades in required, prerequisite or sequential courses. The College will normally not accept credits taken at another institution for required, prerequisite or sequential courses.

All special session courses are the same in the length of periods as those described in the Catalog for the normal academic semesters. Final examinations will be given in each



course. Members of the regular teaching staff of the College constitute the special session faculty.

Students from other colleges must present written authorization from the Dean or other qualified officials of their college to enroll in a special session.

Special sessions are held in January, May, June, and July. These short but intensive programs permit a full-time or part-time college student the opportunity to gain additional credits for self-growth, enrichment, and to accelerate the completion of the degree process.

Schedules for special sessions are available in November and April. The enrollment of a minimum number of students will be required for offering any course in the intersession or summer session.

# Faculty/Senate

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## Faculty

### Regular Teaching and Administrative Faculty

**BRENNAN O'DONNELL***President**Professor of English*

B.A., Pennsylvania State University; M.A., Ph.D., University of North Carolina at Chapel Hill. (2009-)

**STEVEN SCHREINER***Provost and Vice President for Academic Affairs**Professor of Electrical Engineering*

B.S., Western New England University; M.S., Ph.D., Vanderbilt University. (2020-)

**WALAA ABDALLAH***Assistant Professor of Chemical Engineering*

B., S., M.S., Manhattan College; Ph.D., Columbia University. (2020-)

**MAHMOUD ABDELSALAM***Assistant Professor of Computer Science*

B.S., Arab Academy for Science and Technology; M.S., Ph.D., University of Texas at San Antonio. (2019-)

**MITCHELL ABOULAFIA***Professor of Philosophy*

B.A., State University of New York, Stony Brook; M.A, Ph.D., Boston College. (2011-)

**JAMES PATRICK ABULENCIA***Associate Professor of Chemical Engineering*

B.S., Manhattan College, Ph.D., Johns Hopkins University. (2007-)

**MAEVE ADAMS***Associate Professor of English**(On leave Fall 2020, Spring 2021)*

B.A., Smith College; M.A., University of Kent; M.A., Ph.D., New York University. (2013-)

**MEHNAZ AFRIDI***Associate Professor of Religious Studies, Director of the Holocaust, Genocide and Interfaith Education Center*

M.A., Syracuse University; Ph.D, University of South Africa. (2011-)

**ANKUR AGRAWAL***Associate Professor of Computer Science*

B.S., Purbanchal University, Nepal; Ph.D., New Jersey Institute of Technology. (2013-)

**KEVIN J. AHERN***Associate Professor of Religious Studies**(On Leave Spring 2021)*

B.A., Fordham University; M.A., Ph.D., Boston College. (2013-)

**IGOR AIZENBERG**

*Professor of Computer Studies, Chair of the Department*

M.S., Uzhgorod National University, Ukraine; Ph.D., Dorodnicyn Computing Center of the Russian Academy of Sciences, Russia. (2016-)

**MAHMOUD AMIN**

*Associate Professor of Electric and Computer Engineering*

B.S., M.S., Helwan University, Cairo; Ph.D., Florida International University. (2012-)

**SAMIUL AMIN**

*Associate Professor of Chemical Engineering*

B.S., Rutgers University; M.S., The Johns Hopkins University; Ph.D., North Carolina State University. (2017-)

**SALWA AMMAR**

*Professor of Management, Suarez Chair of Business*

B.S., University of Salford, U.K.; M.S, Ph.D., University of Florida. (2009-)

**AMIRA ANNABI**

*Associate Professor of Economics and Finance*

B.A., Institut Supérieur de Gestion, Tunisia; M.Sc., Ph.D., HEC Montreal. (2012-)

**ARSHIA ANWER**

*Assistant Professor of Communication*

B.A., M.A., Osmania University College for Women, India; M.A., Ph.D., Duquesne University. (2016-)

**ABU MALLOUH ARAFAT**

*Assistant Professor of Computer Science*

B.S., The Hashemite University, Jordan; M.S., Amman Arab University, Jordan; Ph.D., University of Bridgeport. (2018-)

**ADAM ARENSEN**

*Professor of History, Director of Urban Studies*

A.B., Harvard College; M.A., M.Phil., Ph.D., Yale University. (2014-)

**POONAM ARORA**

*Professor of Management, Chair of the Department*

B.B.A., John Cabot University; M.B.A., Kellogg School of Management, Northwestern University; Ph.D., Columbia University (2010-)

**EHSAN ATEFI**

*Assistant Professor of Mechanical Engineering*

B.S., Amirkabir University of Technology, Iran; M.A.Sc., Iran University of Science and Technology; Ph.D., The University of Akron. (2017-)

**ROKSANA BADRUDDOJA**

*Associate Professor of Sociology*

*(On leave Fall 2020)*

B.S., University of Illinois, Urbana-Champaign; M.B.A., American University; M.A., Ph.D., Rutgers University. (2013-)

**JASON BARHORST, MAJ., USAF***Assistant Professor of Aerospace Studies*

B.S., University of New Mexico, CO; M.S., Air Force Institute of Technology. (2017-)

**LINA BAROUDI***Assistant Professor of Mechanical Engineering*

B.S., Damascus University; M.S., M.Phil., Ph.D., The City College of New York. (2016-)

**BR. ROBERT C. BERGER, F.S.C.***Associate Professor of Religious Studies*

B.S., Manhattan College; M.S.Ed., Monmouth College; M.Div., Princeton Theological Seminary; D.Min., Drew University. (1988-)

**MARVIN BISHOP***Professor of Mathematics**(On Leave Spring 2021)*

B.S., City College of New York; M.S., New York University; Ph.D., Columbia University. (1983-)

**CORY BLAD***Professor of Sociology, Chair of the Department*

B.A., University of New Hampshire; M.A., Northeastern University; Ph.D., University of Tennessee. (2009-)

**NATALIA BOLIARI***Associate Professor of Economics and Finance*

B.S., Middle East Technical University, Turkey; M.A., Ph.D., Carleton University, Canada. (2009-)

**DAVID W. BOLLERT***Visiting Associate Professor of Philosophy*

B.A., Michigan State University; M.A., Northern Illinois University, St. John's College, Santa Fe; Ph.D., Boston College. (2005-)

**KEITH BROWER***Professor of Modern Languages and Literature*

B.A., Salisbury University; M.A., Ph.D., The Pennsylvania State University. (2014-)

**JEANETTE BROWN***Visiting Assistant Professor of Environmental Engineering*

B.S., University of Maryland; M.S., Manhattan College. (2002-)

**COURTNEY BRYANT***Assistant Professor of Religious Studies*

B.A., University of Maryland; M.Div., Duke University; Ph.D., Vanderbilt University. (2018-)

**JOAN F. CAMMARATA***Professor of Spanish*

B.A., Fordham University; M.A., M.Phil., Ph.D., Columbia University. (1982-)

**JOSEPH F. CAPITANI***Professor of Chemistry*

B.S., Manhattan College; Ph.D., University of North Carolina, Chapel Hill. (1984-)

**GERARDO L.F. CARFAGNO***Assistant Professor of Biology*

B.A., Dartmouth College; Ph.D., University of Illinois at Urbana-Champaign. (2014-)

**RICHARD F. CARBONARO***Professor of Chemical Engineering*

B.S., M.E., Manhattan College; Ph.D., Johns Hopkins University. (2004-)

**CHRISTINA CERCONE***Visiting Assistant Professor of Civil & Environmental Engineering*

B.S., M.S., Manhattan College; Ph.D., Lehigh University. (2016-)

**BRIAN CHALK***Associate Professor of English*

B.A., James Madison University; M.A., New York University; Ph.D., Brandeis University. (2010-)

**BRIDGET T. CHALK***Professor of English*

B.A., Villanova University; M.A., Ph.D., Brandeis University. (2009-)

**PAMELA S. CHASEK***Professor of Political Science, Chair of the Department*

B.A., Middlebury College; M.A., University of Miami; M.A., Ph.D., Johns Hopkins University. (2000-)

**JEFFREY M. CHERUBINI***Associate Professor of Kinesiology, Chair of the Department*

B.A., Fordham University; M.A., San Diego State University; Ph.D., Temple University. (2003-)

**MAHBUBOOR CHOUDHURY***Assistant Professor of Civil & Environmental Engineering*

B.S., M.S., Bangladesh University of Engineering and Technology; Ph.D., Carnegie Mellon University. (2019-)

**JAWANZA ERIC CLARK***Associate Professor of Religious Studies*

B.A., Morehouse College; M.A., Yale University; Ph.D., Emory University. (2012-)

**WILLIAM C. CLYDE***Professor of Economics and Finance*

B.S., DePauw University; M.S., New York University; Ph.D., Edinburgh University, Scotland. (2010-)

**ANTONIO CORDOBA***Associate Professor of Modern Languages and Literature*

B.A., University of Seville; M.A., University of North Carolina, Chapel Hill; Ph.D., Harvard University. (2012-)

**LYDIA CRAFTS***Assistant Professor of History*

B.A., Williams College; M.A., University of Texas; Ph.D., University of Illinois, Urbana-Champaign. (2020-)

**ASHLEY J. CROSS**

*Professor of English*

B.A., Swarthmore College; M.A., Ph.D., Brown University. (1996)

**ANIRBAN DE**

*Professor of Civil Engineering, Chair of the Department*

B.C.E., Jadavpur University, Calcutta, India; M.S., Illinois Institute of Technology; Ph.D., Rensselaer Polytechnic Institute, Troy, NY. (2002-)

**MARK DEBONIS**

*Associate Professor of Mathematics*

B.S., BIOLA University; Ph.D., University of California, Irvine. (2009-)

**REBECCA DELKER**

*Visiting Assistant Professor of Biology*

B.S., University of California, San Diego; Ph.D., Rockefeller University. (2020-)

**RICARDO A. DELLOBUONO**

*Professor of Sociology*

B.A., West Chester University; M.A., University of Maryland; Ph.D., Boston College. (2009-)

**SEBAHATTIN DEMIRKAN**

*Associate Professor of Accounting and CIS*

B.S., Bogazici University, Istanbul; M.B.A., Ph.D., University of Texas at Dallas. (2018-)

**KOAH DINH**

*Visiting Assistant Professor of Mathematics*

B.S., University of Minnesota; M.S., Minnesota State University; Ph.D., University of Tennessee. (2020-)

**KERRYANNE DONOHUE-COUCH, P.E.**

*Visiting Instructor of Civil and Environmental Engineering*

B.S., Manhattan College, M.S., University of Florida, Advanced Certificate in Secondary Education, Pace University (2011-)

**WINSOME A. DOWNIE**

*Assistant Professor of Political Science*

B.A., Barnard College; M.A., M.Phil., Ph.D., Columbia University. (1978-)

**PAUL DROUBIE**

*Assistant Professor of History*

B.S., University of Minnesota; M.A., University of Illinois; Ph.D., University of Illinois. (2008-)

**ALLISON ECUNG, MAJ., USAF**

*Assistant Professor of Aerospace Studies*

B.S., United States Air Force Academy, CO; M.I.R., Auburn University. (2019-)

**JENNIFER C. EDWARDS**

*Professor of History, Chair of the Department*

*(On Leave Fall 2020, Spring 2021)*

B.A., University of Massachusetts, Amherst; M.A., Ph.D., University of Illinois at Urbana-Champaign. (2007-)

**MOHAB EL-HAKIM**

*Assistant Professor of Civil & Environmental Engineering*

B.S., Alexandria University, Egypt; M.S., Ph.D., University of Waterloo, Ontario. (2016-)

**WAFI ELMANNAI**

*Assistant Professor of Electrical & Computer Engineering*

B.S., Ben Alshor College, Libya; M.S.S., Ph.D., University of Bridgeport. (2018-)

**BAHAREH ESTEJAB**

*Assistant Professor of Mechanical Engineering*

B.S., Shiraz University, Iran; M.S., University of Kentucky; Ph.D., Virginia Tech. (2018-)

**KIMBERLY FAIRCHILD**

*Associate Professor of Psychology*

B.A., The College of New Jersey; M.S., Ph.D., Rutgers University (2007-)

**JIANWEI FAN**

*Professor of Chemistry*

B.S., M.S., Shanghai Teacher's University; M.Phil., Ph.D., City University of New York. (1992-)

**KEVIN J. FARLEY**

*Professor of Environmental Engineering*

B.E., M.E., Manhattan College; Ph.D., Massachusetts Institute of Technology. (1995)

**ROSEMARY C. FARLEY**

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B.Mus., Oberlin Conservatory of Music; M. Mus., Manhattan School of Music. (2016-)

**JACOB ROESCH**

*Adjunct Instructor of Art History & Digital Media Arts*

B.A., Hope College; M.F.A., Rochester Institute of Technology; Ed.M., Teacher's College, Columbia University. (2007-)

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**NASRIN ROUZATI**

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B.S., M.S., University of Mississippi, Oxford; Ph.D., Durham University, Durham, UK. (2007-)

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**RICHARD SCHNEIDER***Adjunct Instructor of Civil Engineering*

B.S., Manhattan Collge; M.S., Stevens Institute of Technology; M.B.A., Baruch College. (2005-)

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B.M., Mannes College of Music. (2020-)

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**THURMAN R. SOLANO***Adjunct Instructor of Physics*

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**DAVID CLINTON WILLS**

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**SUSAN M. WITTNER**

*Adjunct Instructor of Marketing*

B.E., Manhattan College; M.B.A., New York University. (2011-)

## **Faculty Emeriti**

**FARAJ ABDULAHAD**

*Associate Professor Emeritus of Economics and Finance*

B.S., Al-Hikma University, Baghdad; Ph.D., Boston College. (1970-2012)

**DEBORAH ADAMS**

*Assistant Professor Emeritus of Kinesiology*

B.A., California State University, Fresno; M.A., California State University, Long Beach; Ph.D., Oregon State University. (1993-2017)

**CARL W. ALBERNI**

*Associate Professor Emeritus of Accounting*

B.B.A., Loyola University, Los Angeles; M.B.A., University of California at Los Angeles, Ph.D., University of Missouri; C.P.A., California; C.M.A., Institute of Management Accounting. (1984-1995)

**LEO M. ALVES**

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B.S., St. Norbert College; Ph.D., University of Chicago. (1978-2017)

**MICHAEL E. ANTOLIK**

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**VINCENT W. ANTONETTI***Professor Emeritus of Mechanical Engineering*

B.M.E., The City College of New York; M.S.M.E., Columbia University; Ph.D., University of Waterloo; Professional Engineer, New York State. (1987-1996)

**VICTOR G. BADDING***Professor Emeritus of Chemistry*

B.S., Canisius College; Ph.D., University of Notre Dame. (1965-2001)

**RAYMOND C. BARILE***Professor Emeritus of Chemistry*

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**KATALIN A. BENCSATH***Professor Emeritus of Mathematics and Computer Science*

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**J. CARL BENNETT***Professor Emeritus of Physical Education*

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**ROBERT E. BERLIN***Associate Professor Emeritus of Mechanical Engineering*

B.S. (M.E.), The City College of New York; M.S., Rensselaer Polytechnic Institute; M.S., New York University; D.P.H., Columbia University; Professional Engineer, New York State. (1982-1996)

**ROBERT J. BORRMANN***Professor Emeritus of Electrical Engineering*

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**WILLIAM A. BROWN***Associate Professor Emeritus of Civil Engineering*

B.C.E., Manhattan College; M.S., Virginia Polytechnic Institute; Ph.D., New York University; Professional Engineer, New York State, New Jersey and Connecticut. (1956-2013)

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(1962-2016)

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## College Senate

### Officers

Caroline Shea, Speaker

Gerardo Carfagno, First Deputy Speaker

Tim Ward, Second Deputy Speaker

Parveen Rampersaud, Secretary

### Faculty

Mohab El-Hakim

Heidi Furey

Jimena Gonzalez Ramirez

Amy Handfield

Ian Levy

William Merriman

Mehdi Omidvar

Angel Pineda

Fengyun Wu

Danielle Young

### Students

Julian Beckerle

Sebastian DeGuisto

Guiliana DeLuca  
Sedraya Fletcher  
Luis Garcia  
Xavier Kyle  
Isabel Quinones

## Administration

Emmanuel Ago  
William Clyde  
Karen Nicholson  
Richard Satterlee

## Alumni

Michael McEneney

## Staff

Margaret McKiernan  
Syrita Newman

## Faculty Council

### The Council for Faculty Affairs

#### Officers

##### ***Ira Gerhardt, Chair***

*Terms concluding in 2019:*

Quentin Machingo, Natalia Boliari, Sarah Scott, Parisa Saboori, Bernadette Lopez-Fitzsimmons, Daniel Savoy, Heidi Laudien.

*Terms concluding in 2020:*

Kashifuddin Qazi, Kimberly Fairchild, Lauren Trabold, Br. Robert Berger, James Patrick Abulencia, Sr. Remigia Kushner.

*Terms concluding in 2021:*

Ira Gerhardt, Margaret Groarke, Bryan Wilkins, Matthew Volovski, Shawn Ladda, Musa Jafar.

## Standing Committees of the Faculty

(The President and the Executive Vice President and Provost are ex officio members of all faculty committees except the Grievance Committee and the Committee on Termination of Service.)

Curriculum Committee for School of Arts.: Ashley Cross, Chair; Jennifer Edwards, Margaret Groarke, Rebecca Kern, Kelly Marin, Eoin O'Connell, Richard Emmerson.

Curriculum Committee for School of Business: Salwa Ammar, Ahmed Goma, Hany Guirguis, Patrick Jeffers, Yassir Samra.

Curriculum Committee for School of Education: Corine Fitzpatrick, Lawrence Hough, Elizabeth Kosky, Sr. Remigia Kushner, Tedd Keating, William Merriman.

Curriculum Committee for School of Engineering: Ann Marie Flynn, Bahman Litkouhi, Moujalli Hourani, Mohammad Naraghi, Richard Schneider, Robert Sharp, Gordon Silverman, Tim J. Ward.

Curriculum Committee for School of Science: Jianwei Fan, Carol Hurwitz, Michael Judge, Val Kolesnikov, Bruce Liby, Darcy Lis-Beglane, Constantine Theodosiou.

Committee on Faculty Research Projects and Grants: Samiul Amin, Jeffrey White, Simion Tomoiaga, Lawrence Udeigwe, John Gormley, Nuwan Jayawickreme.

Committee on Publications Board: Thom Gencarelli, Heidi Furey.

Committee on Promotion and Tenure: Kathryn Weld, Robert Sharp, Corine Fitzpatrick, Bahman Litkouhi, Mehmet Ulema, Ashley Cross, Claudia Setzer, Sr. Remigia Kushner, Shawn Ladda, Michael Judge, Charles Geisst.

Committee on Sabbatical Leave: Dongh Lee, Roksana Badruddoja, Rebecca Kern, Helene Tyler, Mahmoud Amin, Ankar Agrawal, Mary Michel.

Committee on Summer Grants: Adam Arenson, Elizabeth Kosky, Marc Waldman, Peyman Honarmondi, Angel Pineda.

Committee on Faculty Welfare: Gwendolyn Tedeschi, Bruce Shockey, Thom Gencarelli, Jeff Horn, Bahman Litkouhi, Kathryn Weld..

Judiciary Committee on Student Affairs: Evelyn Scaramella, Jeff Cherubini, Joan Cammarata, Musa Jafar, Paul Droubie, Yongwook Kim, Ahmed Hussein, Daniel Young, Evangelia Ieronymaki, Maria Maust-Mohl, Rebecca Kern, Deidre O'Leary, MaiomiaoZhang, Jawanza Clark, Janet McShane, Kevin Ahern, Samiul Amin.

Athletics Committee: Musa Jafar, Patrice Tiffany, Shawn Ladda, Zella Moore, Br. Patrick Horner, Ehsan Atefi.

Faculty Grievance Committee: Marc Waldman, John Leylegian, Meg Toth.

Committee on Termination of Service: Patrice Tiffany, Lisa Rizopolous, Helene Tyler, Sr. Joan Harnett.

Committee on Faculty Technology: Shawna BuShell, Bryan Wilkins, Kashifuddin Qazi, Amy Handfield, Meg Toth, Jonathan Keller, Simion Tomoiaga, Mohab El-Hakim, Mehdi Omidvar, Christie Gonzales, Fiona MacLachlan.

# Degrees Conferred

## *COMMENCEMENT EXERCISES 2019-2020 Year*

15-May-2020

**TBD**

13-May-2020

**TBD**

# Financial Services

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Tuition & Fees

Student Accounts and Bursar Services

Financial Aid Administration



# Tuition and Fees

The uncertainty of present-day costs makes it necessary for the College to reserve the right to increase tuition and fees whenever necessary. In applying for admission, students and their families should anticipate future annual increases. Such changes will be formally announced in advance.

## Undergraduate Tuition and Fees 2020-2021

### A. Full Time Students

Full time students register for 12 or more credits per semester.

#### Tuition Charges per Semester

Fee	Amount
All students 2020-2021	\$20,800

#### Program Fees per Semester

Fee	Amount
Liberal Arts	\$780
Education & Health	\$780
O'Malley School of Business	\$930
Science	\$1,000
Engineering	\$1,560
Overcredit Charges*	\$1,070 per credit hour

\* See section on Overcredits for more detail.

### B. Part Time Students, 2020-2021

Part time students in day, evening or special (January and Summer) sessions register for less than 12 credits per semester.

Fee	Amount
Tuition Charges per Credit Hour	\$1,070

### C. School of Continuing and Professional Studies (SCPS), per Semester, 2020-2021

Fee	Amount
SCPS Tuition Per Credit	\$720
SCPS Information Services Fee	\$60
SCPS Information Services Fee (Resident additional)	\$180

## D. Intensive English Language Program (IELP), per Semester, 2020-2021

Fee	Amount
IELP Tuition per semester	\$3,500
IELP Orientation Fee (one-time)	\$360
IELP Information Services Fee	\$220
IELP Student Engagement Fee per semester	\$290
IELP Health Center Fee per semester	\$80

## E. Room and Board Fee, per Semester, 2020-2021

### Room and Board Standard Room Occupancy with the following plans:

Fee	Amount
Double Room/Unlimited Plan + \$50 DDs + \$25 JDs/Sem*	\$8,690
OV Plan-4 Meals/wk +\$640 DDs +160 JDs/Sem	\$8,190
Single Room Surcharge	\$2,735
12-Month Housing (add-on to Standard plan)	\$3,790

\* Mandatory plan for all incoming freshman

## F. One-Time Fees

Fee	Amount
Application	\$75
Student Acceptance Deposit Commuter	\$350
Student Acceptance Deposit Resident	\$650
Resident deposit includes Damage Deposit (Refundable upon completion of contract and absence of damage to dormitory facilities)	\$300

## G. Other Fees

Fee	Amount
Comprehensive Fee - New Students - per semester	\$1,130
Comprehensive Fee - Continuing Students - per semester	\$710
Student Health Insurance **	\$2,550
Non-matriculation - per registration	\$210
Monthly Payment Plan Charge (per semester)	\$50
Late payment charge (per month overdue balance)	1%
Returned Check Charge	\$25
Physical Education May Camp	\$1,320
Transcript - per copy	\$5

Off-Campus Course	\$170
Room Reservation Deposit (advanced each Spring term to secure plan in dorm)	\$400
Study Abroad/ Away Fee	\$610
Electronic Portfolio Fee (Task Stream)	\$40

#### Undergraduate Cost of Attendance 2020-2021

Manhattan College establishes a full cost of attendance (COA) budget that includes tuition, fees, room and board, books, transportation and personal, miscellaneous expenses. Only the amounts for tuition and fees and on-campus residence will appear on your billing statement, but the other expenses are calculated into the student expense budget for the purpose of establishing need and awarding aid.

#### Annual Cost of Attendance\* - Commuter, 2020-2021

Fee	Amount
Tuition	\$41,600
Program Fee (average)	\$2,020
Comprehensive Fee - New Student	\$2,260
Books	\$1,200
Miscellaneous	\$1,200
Transportation	\$1,200
Room and Board Allowance	\$2,500
Total Budget	\$51,980

#### Annual Cost of Attendance\* - Resident, 2020-2021

Fee	Amount
Tuition	\$41,600
Program Fee (average)	\$2,020
Room and Board	\$17,380
Comprehensive Fee - New Student	\$2,260
Dorm Damage Deposit	\$300
Books	\$1,200
Miscellaneous	\$1,200
Transportation	\$900
Total Budget	\$66,860

## H. Camino Program, per Semester, 2020-2021

Fee	Amount
Camino Tuition per semester	\$5,045
Camino Comprehensive Fee per semester	\$710

- \* *Note: COA is an estimate listed for new students entering 2020-2021 using the average of all schools program fees as a representative model. School of enrollment determines the program fee. Consult catalog for the appropriate charge. Adjustments are made for less than full-time status, overcredit charges, and room and board plan selected. Please refer to the Student Accounts and Bursar Services website for a complete COA listing for new and continuing students.*
- \*\* *Student Health Insurance will be assessed annually to all full-time students, international students, resident students and students participating in intercollegiate athletics. The charge can be waived if proof of existing comparable coverage is submitted timely and approved by the insurance provider.*

# Student Account Policies and Procedures

## Payment Responsibilities and Agreement Notice

Enrolled students agree to be in accordance with all policies and procedures related to their financial obligation to the College. The enrolled student assumes liability for any debt incurred during his/her attendance at Manhattan College and agrees to reimburse Manhattan College the fees of any collection agency, which may be based on a percentage at a maximum of 33.33% of the debt, and all costs and expenses, including reasonable attorneys' fees, we incur in such collection efforts. The terms of payment, withdrawal and adjustment set forth in this catalog are incorporated upon enrollment.

Students are required to notify in writing to the College any change in address or other contact information. All changes in billing address must be provided immediately in writing even after such time as a student completes his/her program and has loans outstanding to the school. Failure to comply with the policies on address changes that result in the loss or delay of contact are the sole responsibility of the student.

Payment to the College is always the responsibility of the student regardless of the source of funding for tuition. Inquiries regarding accounts receivable and/or cashing can be directed to the Office of Student Accounts and Bursar Services by phone at (718) 862-7961 or e-mail [studentaccounts@manhattan.edu](mailto:studentaccounts@manhattan.edu).

Account access is available at [www.manhattan.edu/myaccount](http://www.manhattan.edu/myaccount) (<https://self-service.manhattan.edu/>) with official Manhattan College login credentials. Students and designated authorized users can view the billing account detail transactions and up-to-date account balances. Other student information services available to view via self service include financial aid awards, class schedules, grades, unofficial transcripts, and personal information such as address, phone number, and e-mail address.

## Safeguarding Policy

This is an official notice of Manhattan College's policy regarding the safeguarding of customers' information established by the Federal Trade Commission (FTC). Manhattan College is subject to the provisions of the Gramm-Leach Bliley Act (GLBA, 16 CFR 314) which recognizes the College and other higher education institutions as a financial institution.

Manhattan College adheres to very strict privacy and safeguarding rules, keeping sensitive information safe. Manhattan College is in compliance with specific requirements related to the administrative, technical and physical safeguarding of customer information. Manhattan College also requires its service providers to implement and maintain such safeguards.

## Tuition Liability for Fall and Spring Terms

Only students who have satisfied their current account for the term will be eligible for online pre-registration for an upcoming term. Billing statements with a tuition deadline date will be emailed to students in early July for the Fall term and by mid-December for the Spring term. Follow-up billing statements for outstanding balances continue monthly thereafter, but it is the student's responsibility to access the Student Account Suite,

studentaccounts@manhattan.edu, for account updates. No student will be permitted to enroll for an academic term until all outstanding accounts with the College have been satisfied. Liability for tuition and fees is not contingent on completing courses, course attendance, receiving grades, receiving passing grades or status of financial aid awards. Students who register after the tuition deadline for a term or make adjustments which result in increased liability after the tuition deadline for a term must make payment to the College upon those transactions.

## **Registration/Payment for Interession Terms**

Summer preregistration is available online. Students are encouraged to review their account balance on the Student Account Suite to view the charges. Payment reminders will be sent approximately one week before the payment deadline. In order to enroll in person for an interession term (January/Summer), payment must accompany a request for registration or be provided in advance. There is no option to register without prepayment after preregistration concludes and for the winter session.

## **Payment of Tuition and Fees**

Acceptable forms of payment are cash, personal check, bank check, money order, credit card, and bank wire via Western Union. Checks must be payable to Manhattan College and routed to the Office of Student Accounts and Bursar Services. The student's identification number should be included on all payments. The College reserves the right to dictate form of future payments in cases where insufficient funds are presented and/or in cases of continued delinquent account status. Payment can be made in person at the Student Accounts and Bursar Services Office in Miguel Hall, Room 100 or mailed. The College accepts MasterCard, Visa, Discover and American Express credit cards. Secure, online credit card payments and ACH automatic check withdrawals may be processed by accessing the Student Account Suite, studentaccounts@manhattan.edu, with the student or designated authorized users login credentials.

## **Method of Financial Aid Payments**

Financial aid will be credited directly to the student tuition account. Although initial tuition bills will list pending aid to assist in financing calculations, actual disbursements are subject to eligibility requirements, completion of necessary applications, and verification of applications. Institutional awards, Federal Direct Stafford Loans, Federal Direct PLUS Loans, Federal Pell, SEOG, ACG, SMART, TEACH, and New York State TAP will be disbursed to the student account in two disbursements; one-half at the scheduled start of the Fall term and the other half at the scheduled start of the Spring term. If a student earns eligibility for any federal aid (Pell, Direct Loans) for interession terms, awards will be applied at the start of those terms. Private loans will also be applied in accordance with the authorized enrollment periods. Federal Work Study is not applied to the tuition account. FWS awards become active upon application and when a work position is secured. Paychecks are issued to students semi-monthly and are based on actual hours worked.

## Non-Payment Penalties

Students can avoid late payment charges by paying their tuition and fees by the published deadline. A late penalty of 1% of the outstanding balance of any student account will be assessed at the end of each month until the account is settled. Accounts not paid in full may be referred to a collection agency, which can result in additional collection and/or legal costs.

Indebtedness to the College may automatically terminate current enrollment and indefinitely suspend future enrollment. The College reserves the right to request prepayment before allowing registration for future terms. In addition, students with an outstanding obligation to the College will also be barred from online account access via Self Service, receiving grade reports, parking decals, transcripts, and participating in commencement until all account balances have been paid.

## Policy on Returned Items

If for any reason a check, eCheck, eRefund does not clear for payment, a returned ACH and/ or check charge of \$25 is charged to the student's tuition account. Payment for the amount of the returned item and the \$25 return item charge must be paid immediately by cash, credit card, certified bank check or money order. Personal checks and ACH withdrawal will no longer be accepted as a payment option. Account restrictions will also bar electronic payments via eCheck after an item is returned. *The College will request that future payments be made in form of cash, credit card, certified bank check or money order. The College reserves the right to cancel or deny enrollment for a particular term due to payment with insufficient funds.*

## Monthly Payment Plan

Manhattan College partners with TouchNet to offer semester based 5-month installment plans (Fall & Spring only), referred to as the Monthly Payment Plan (MMP) for matriculated students enrolling at least part time. The cost to enroll is \$50.00 per term. The monthly payment plan allows for convenient adjustments and will automatically notify you via email anytime your installments increase or decrease based on changes in tuition and fees or revisions in financial aid items. For more information, you can refer to the Payment Options tab on the Student Accounts Website ([manhattan.edu/studentaccounts](http://manhattan.edu/studentaccounts)). (<https://inside.manhattan.edu/offices/bursar/payment-options.php>)

## Employer Deferment

Students expecting reimbursement from their employer may defer payment of tuition and applicable fees upon approval of our Application for Deferral. Upon approval, a student's account is charged the deferral fee (listed on application) and any portion of tuition/fees not covered by the employer will be payable in advance. The application will require certification of the employer's reimbursement on company letterhead. Please contact the Office of Student Accounts and Bursar Services for the current terms and fees and to seek eligibility for a **regular student deferral** if there is no employer reimbursement. The cost of an employer deferral is \$100 (subject to change) which is charged to the student account and payable immediately.

## Regular Student Deferment

Students who need additional time to secure tuition financing will have the opportunity to apply for a tuition deferment, with an approved source of funding. If approved, a deferment can extend your tuition payment deadline by approximately six weeks. Applications must be filed by the tuition deadline date. The cost of a deferral is \$100 (subject to change) which is charged to the student account and payable immediately. The deferment fee and extended deadline date will be listed in the signed and approved application.

## Overcredit Charges

Students who exceed the annual (Fall and Spring) number of credits listed under the current degree requirements in their field of study for their class status will be charged at the per credit tuition rate for the school in which they are registered. Course requirements for each year by field are listed in the Manhattan College catalogue. Academic Advisors and Assistant Deans are available to help students with course selection but they are unable to advise students on overcredit charges nor give a reminder and/or warning of the College's overcredit policy.

Students on full or partial scholarships are not exempt from overcredit charges if they take credits in excess of those prescribed in a particular academic year for the regular full-time program outlined in the catalogue.

## Schedule Changes

Students who make changes to their academic schedules [withdraw from a class(es)] may result in:

1. Recalculation of financial aid for that semester and/or future semester.
2. TAP decertification (loss of TAP grant).
3. Student's course load in future semesters may be increased resulting in overcredit charges, or requiring the student to take courses during the summer or intersessions both at additional cost.

## Refund and Liability Policies

If a student withdraws from a term, takes a leave of absence after the start of term, or is dismissed from Manhattan College, then the school may be required to return all or some portion of federal funds awarded to the student. The student may be eligible for a refund for a portion of the tuition, fees, and room and board paid to the College depending on the refund/liability schedule and the determined official withdrawal date. Students **must** complete an official "Withdrawal from College" form.

Failure to attend class and/or failure to notify the Office of the Dean and Office of the Registrar does not constitute an official withdrawal. Also, failure to make or complete payment does not constitute official withdrawal. Students who never attend or stop attending classes and fail to file the official paperwork mandated by College policy are responsible for 100% of tuition and fees.



## Official Date of Withdrawal

The date used for refund/liability purposes will be the date that the paperwork was completed, not the last date of attendance. Drops or withdrawals received by mail will be effective as of the official postmarked date.

## Obligation to Outside Funding Sources Upon Withdrawal

If a student received financial assistance from an outside agency then some portion of the refund may have to be returned to the issuing grant/scholarship agency or lender. Students who receive Federal Title IV funds will be subject to the refund policy listed in that section.

## Adds, Drops and Withdrawals from Individual Courses

Adds/Drops and Withdrawals from individual courses must be officially requested with proper forms and processed by the Office of the Dean and the Office of the Registrar. No add/drop of courses will be permitted after the published and posted deadlines.

Add/Drops processed during the published dates (usually the first calendar week of the term) will qualify for a schedule change which may affect tuition and fee charges. After the deadline, withdrawal from a course is the only option for a student. In this case, a student is liable for tuition in accordance with his/her original enrollment at the end of the add/drop period. There is no refund made to students who withdraw from an individual course(s).

## Refund of Tuition/Liability of Tuition- Traditional 15 week term

Refund of tuition charges only will be made in accordance with the following schedule:

Duration	Refund/Liability
During the 1st week	100% refund no liability
During the 2nd week	80% refund 20% liability
During the 3rd week	60% refund 40% liability
During the 4th week	40% refund 60% liability
During the 5th week	20% refund 80% liability

After Week 5 there is no refund, and 100% liability of tuition.

## Refund of Tuition/Liability of Tuition- SCPS, IELP Degree Programs & 7-week Session:

Refund of tuition charges only will be made in accordance with the following schedule:

Duration	Refund/Liability
During the 1st week	100% refund no liability
During the 2nd week	70% refund 30% liability
During the 3rd week	30% refund 70% liability

After Week 3 there is no refund, and 100% liability of tuition and fees.

## Room and Board Liability

Charges will be prorated per calendar week up to 5 weeks, as authorized by the Office of Residential Life.

## Circumstances for Appeal

Voluntary and involuntary withdrawals or leaves of absence will be subject to the refund/liability schedule as listed in this catalog. Since the College incurs the cost of a student's enrollment, specific circumstances that pertain to the withdrawal will not be considered for review except in cases of terminal illness or death of an immediate family member. Appeals of only these two severe cases can be forwarded to the Director of Student Accounts.

## Tuition Insurance Plan

Manhattan College has partnered with **GradGuard** to offer an optional insurance plan, Tuition Protection Plan by Allianz Global Assistance, which helps protect you in cases of accident or illness. Your participation in Tuition Protection Plan is completely voluntary; it represents a contract between you and the Allianz Global Assistance. Manhattan College does not benefit from your participation.

## Enrollment Instructions

Should you decide to participate in the Tuition Protection Plan, you can learn more and obtain a quote by calling 877-232-0765 or go to [www.gradguard.com/manhattan](http://www.gradguard.com/manhattan) (<http://www.gradguard.com/manhattan/>). Sign-up is required prior to the first day of classes. For the 2018-19 year, August 27 is the first day of classes in the fall and January 15 is the first day of classes in the spring.

## What the Plan Covers

The coverage complements our refund policy-providing reimbursement for eligible tuition payments, room and board fees and other nonrefundable expenses if you withdraw for a covered illness or injury at any time during the plan period.

## Adjustment of Institutional Aid

The College's refund policy exists for calculating liability for institutional tuition charges. Therefore, if any charges are prorated as a result of voluntary or involuntary withdrawal, the College must in turn prorate any institutional grants based on the percentage charged to the student as listed in the above policy.

## Outside Scholarships and External Funding

Students must notify Student Accounts and Bursar Services of any external funds/resources they will receive regardless of amount. Students can use the External Resources form or forward copies of their notice of award. The terms “outside”, “external” or “private” sources applies to any fund, scholarship or benefit awarded and administered by an organization other than Manhattan College. Resources can include: high schools, civic or religious organizations, state or federally funded sources not listed in this catalog, or tuition benefits from an employer. Federal regulations require that these awards be treated as educational resources for determining the student’s eligibility for financial aid.

To ensure proper accounting of the external resource, funds should be sent directly to Student Accounts and Bursar Services to be applied to the student account.

For many students, the receipt of nominal external resources will not necessitate a financial aid award revision. In some cases, however, a student’s demonstrated financial need is already being met in full with federal, state and/or institutional resources before considering an external resource.

In this situation, the College’s policy is that such resources will be used first to reduce unmet need, then loan eligibility, then work study eligibility (Federal Pell Grant is not affected by the receipt of external resources). However, the College reserves the right to reconfigure its institutional award offer(s) if the outside funding is such that would result in an overage of the College’s intended funding level of institutional aid. If a student receives no need-based financial assistance, then the combination of all merit aid and outside resources may not exceed the allowable cost of attendance.

## Adjustment of Federal Aid

### Return of Title IV Federal Aid

When a student withdraws during a term, the amount of federal financial aid earned by the student is determined on a pro-rata basis up to the end of 60% of the term. The amount of federal Title IV aid earned is based upon the period of enrollment completed. A percentage is computed by dividing the number of days completed (as of the date the student officially withdraws) by the total number of days in the term as determined by the Office of Student Accounts and Bursar Services. Scheduled breaks of more than four consecutive days are excluded. The percentage is then applied to the aid received to determine earned and unearned aid. If and when any aid is determined to be unearned, it must be returned to the appropriate financial aid program(s). Returns to aid programs must be made in the following order: Unsubsidized Federal Stafford Loan, Subsidized Federal Stafford Loan, Federal PLUS Loan, Federal Pell Grant, Federal SEOG, and NY State Grant. Once a student has completed more than 60% of the term, the student is considered to have earned 100% of aid and no adjustment to aid is made.

## Refunds of Credit Balances

Refunds are subject to the review of the Office of Student Accounts and Bursar Services. Institutional awards can never be refunded to the student. Credit balances resulting from private scholarships, federal financial aid, and alternative loan programs are subject to specific guideline review and approval by a financial aid counselor and a student account

representative. Refunds will be routed through the approval process when the credit amount actually exists on the student's account, after the census date for each term (first week of each term, or the add/drop period). In the event of an overpayment of personal funds paid to the College by check, refunds will be subject to a ten day holding period while original funding is cleared by the bank. Credit balances resulting from excess payments will be refunded to the student's name unless PLUS loans indicate otherwise. .

## **Processing of Refunds**

Checks will be mailed to the current home address of the student, if the student does not elect to receive an eRefund, or the Parents name and address on the PLUS loan system.

# Financial Assistance

Manhattan College provides the maximum financial aid available to qualified students to make their attendance at Manhattan financially possible.

To this end, the College administers a wide range of scholarship and financial aid programs designed to enable the student to pursue his/her studies to graduation. The basis of selection is ability and/or need. Students are advised that program guidelines and funding levels, especially State and Federal, are subject to change without enough advance notice to be corrected in this publication. Students are advised to refer to the website of the Office of Student Financial Services for current information.

Meeting the complete costs of college requires a cooperative effort from several possible sources of funds: student and family, Manhattan College, state and federal government agencies and independent sources of aid. Manhattan College attempts to meet a significant portion of need but is unable to meet full need due to financial limitations.

## New Students

Students admitted to the College and demonstrating financial need will receive financial aid assistance offered in the form of a financial aid award notice from the Office of Admissions and Financial Aid. Most financial assistance is based on an assessment of your financial need. Need is the difference between your total cost of attendance (tuition, fees, room and board, books, miscellaneous/personal expenses, and transportation) and what your family can reasonably be expected to pay toward those expenses (determined by the EFC result of FAFSA). If a student's need for assistance changes from one year to the next, his/her financial aid may change.

## Continuing Eligibility

All financial aid is renewable on a yearly basis provided the student remains eligible; must renew the FAFSA annually and comply with any FAFSA verification requests or other requests by financial aid administrators, is enrolled in a matriculated program, is in good academic standing, continues to demonstrate need (for need-based aid) and has not defaulted on student loans. Please check aid eligibility requirements listed under each type of financial aid.

## Application Procedures

Students who wish to apply for any type of need-based financial assistance through Manhattan College must file a Free Application for Federal Student Assistance (FAFSA college code is 002758) as early as possible after October 1st preceding the academic year for which they wish to be considered for aid. Incoming freshmen should file by February 1st to ensure timely handling of their admissions application. FAFSA applications must file on the web at [www.fafsa.ed.gov](http://www.fafsa.ed.gov) (<http://www.fafsa.ed.gov>). Continuing students must file by the April 15th deadline and file using completed federal taxes. Financial aid will be awarded on a "first come first serve basis" to all students that have pre-registered for the upcoming semester by the published deadline.

The Federal Student Aid Program performs a needs analysis service that computes the expected family contribution (EFC) toward educational costs. Manhattan College then

determines financial need based on the total cost of attendance at the college. Manhattan College deducts the family contribution as determined by the FAFSA from the Total Cost of Attendance to calculate financial need. All attempts are made to help meet some of this need (also known as the Gap) with a combination of the gift (scholarships and grants from Manhattan College, federal and state grant programs and outside scholarships), loans (Federal Stafford and Perkins) and work programs (Federal Work-Study and Campus Employment). Any special circumstances should be submitted in writing to the Student Financial Services Office.

## **Notification of Awards**

Applicants will be advised of all possible awards via a Financial Aid Award Notice when all pertinent forms and applications are complete. Award notices are provided to incoming applicants on a rolling basis. Students already in attendance will begin to receive their Award Notices between late May and mid-June.

The financial aid awards on your award notice are “estimated” until full eligibility is determined. A financial aid award may be reduced or canceled. The most common reasons for an award adjustment include changes in enrollment (change to part-time status, residency status, not maintaining Satisfactory Academic Progress, or over-awards due to receipt of additional aid and/or scholarships from other sources.) An award may also be adjusted due to changes or inaccuracies in the information on which your award is based. If your financial aid has been disbursed, you may be responsible for partial or full repayment of funds regardless of the reason for the adjustment.

Students are advised to visit the Student Financial Services Office to discuss any changes in family circumstances. A student should never withdraw from a class or a semester without visiting the Student Financial Services to discuss the impact on future financial aid.

## **Verification of Financial Aid Data & Applications**

FAFSA Verification is a process mandated by the federal government requiring the Student Financial Services office to verify that information reported on the FAFSA application is true and accurate. At a minimum, the government will randomly select thirty percent of a college's population for this process. Applicants are selected or flagged by the government at random and through computer edits. The verification flag will be noted as an asterisk next to the EFC number on the Student Aid Report (SAR) that is received upon completion of the FAFSA. The student is also notified of selection in Part I of the SAR. In addition to those flagged by the government, Manhattan College may flag students randomly or as a result of our own computer edits.

After making the enrollment deposit, prospective students will receive a letter indicating they have been selected for verification and requesting that an institutional verification form be completed and returned with signed copies of student and parent signed federal income tax returns along with other requested documents. Returning students will receive a paper and/or electronic notification of selection for verification as part of the financial aid award renewal package process.

Items to be verified may include tax filing status, household composition and status of individuals listed in the household, proof of number enrolled in post-secondary studies, adjusted gross income and taxes paid from signed federal tax returns, income, and wage

statements, proof of non-filing, proof of earned and unearned income, untaxed income, and benefits, child support documentation, the documented value of investments, and other documents requested by the college.

Selected students are required to provide documentation as specified within 10 business days of receipt of the notice. Within two to six weeks of receipt, a financial aid counselor will analyze the data and take any of the following actions:

- complete the process with no changes and inform the student
- complete the process after making necessary corrections and issue a revised award letter if there are changes in financial aid
- request additional information needed to complete verification

Although tuition bills may show pending aid, no financial aid will be credited to the account until verification has been completed. Institutional aid will not be considered final until the process is complete. Students will be responsible for payment penalties. If there is some unforeseen delay in providing documents to the college, a student may wish to take advantage of the tuition deferral option or make alternate payment arrangements.

Some states also validate the financial data of their state grant recipients. It is important to provide information to those sources as requested.

## **Institutional Aid**

All forms of institutional assistance (scholarships, awards, need-based grants, athletic awards) are awarded under the assumption of full-time, undergraduate enrollment and residency status requested at the time of the admissions application. Specialized institutional scholarships and grants, including but not limited to Athletic scholarships, Performing Arts scholarships, Lasallian Leaders, RA grants, Quadrangle awards, and other department and/or donor-specific funds are awarded and renewed at the discretion of the committees and directors therein; renewal is contingent upon a student satisfactorily meeting all eligibility requirements and the annual availability of such funds.

Institutional awards are only given for a maximum of four years (eight semesters). Institutional awards and/or assistance of any type may be subject to reduction if the total of all institutional aid exceeds the total cost of tuition and fees charged to the student account.

In addition, students who are packaged as a Resident student upon acceptance into the College who later change their residency status to a Commuter are subject to a 20% reduction in all institutional aid.

## **Need-Based Aid**

Manhattan College awards need-based aid to students who demonstrate financial need. As with all types of need-based aid, these awards are renewed annually and adjusted in line with changes on the FAFSA. These awards are given for a maximum of four years (eight semesters). Need-based aid recipients must maintain satisfactory academic progress, full-time enrollment, residency status requested at the time of the admissions application, file FAFSA annually and on time, and comply with any verification requests.

Overcredits, most study abroad courses, intersession, and/or summer courses are not included with these grants and/or awards:

**MC Grant-in-Aid**

Mission related, need-based awards for full-time undergraduate students at the discretion of the Admissions and Financial Aid Committee.

**Science Scholar's Award**

Based on academic achievement and demonstrable financial need for students who intend to enroll in the School of Science only. The award is granted at the discretion of the Admissions and Financial Aid Committee upon admission to the College. This award cannot be renewed/granted if a student chooses a major outside of the School of Science after initial acceptance.

**Education Scholarship**

Based on academic achievement and demonstrable financial need for students who intend to enroll in the School of Education and Health only. The award is granted at the discretion of the Admissions and Financial Aid Committee upon admission to the College. This award cannot be renewed/granted if a student chooses a major outside of the School of Education and Health after initial acceptance.

**Business Scholar's Award**

The Business Scholar's Award is based on academic achievement for students who intend to enroll in the School of Business only. The award is granted at the discretion of the Admissions and Financial Aid Committee upon admission to the College. This award cannot be renewed/granted if a student chooses a major outside of the School of Business after initial acceptance.

**Engineering Award**

Based on academic achievement for students who intend to enroll in the School of Engineering only. The award is granted at the discretion of the Admissions and Financial Aid Committee upon admission the College. This award cannot be renewed/granted if a student chooses a major outside of the School of Engineering after initial acceptance.

**Merit Scholarships & Awards**

Manhattan College awards academic merit-based aid to students who meet the academic criteria at the time of acceptance to the College. All academic scholarships (non-need based) require a minimum enrollment of 12 credits, residency status requested at the time of the admissions application, and a cumulative GPA requirement of 3.0 while in attendance at Manhattan College for full renewal. These awards are given for a maximum of four years (eight semesters). Overcredits, most study abroad courses, intersession, and/or summer courses are not included with these scholarships and/or awards:

**Presidential Scholarship**

Non-need based scholarship awarded to extraordinary applicants. Eligibility is based on exceptional SAT/ACT scores, secondary school GPAs, and rank in class. The award is granted at the discretion of the Admissions Committee upon admission to the College.

**Dean's Award**



Dean's Awards are offered to academically gifted students who fall slightly below Presidential Scholarship requirements, on a non-need basis. The award is granted at the discretion of the Admissions Committee upon admission to the College.

**Chancellor's Award**

Chancellor's Awards are awarded to students with high academic performance, leadership ability, volunteer and community service work, and extra-curricular involvement. Amounts will vary, on a non-need basis. The award is granted at the discretion of the Admissions Committee upon admission to the College.

**Founder's Award**

Achievement, non-need based awards given to full-time undergraduate students. The award is granted at the discretion of the Admissions Committee upon admission to the College.

**GPA Requirements for Dean's Award and Presidential Scholarship**

A student must maintain an overall GPA of 3.0 for renewal of their academic scholarship. If the GPA falls below a 3.0 then the renewal amount will be based upon the chart below.

GPA	Renew Amount
3.0	100%
2.9	"Probation"
2.8-2.899	80%
2.7-2.799	60%
2.6-2.699	40%
2.5-2.599	20%
Below 2.5	0%

*The preceding chart is subject to change. If such a change occurs, it will be formally announced in advance.*

**Need Programs**

**Manhattan College Grant-in-Aid:** Manhattan College awards grants-in-aid to accepted students who demonstrate financial need. As with all types of grant aid, these awards are renewed annually and adjusted in line with changes on the FAFSA. These awards are given for a maximum of four years (eight semesters). Grant recipients must maintain satisfactory academic progress. Full-time enrollment is necessary to receive a grant.

**Other Manhattan College Programs**

**Manhattan College Campus Employment Program:** Manhattan offers its own campus work program to students who need employment to meet college expenses but are not eligible for Federal Work-Study. Although the program is not need-based, a FAFSA (and other application requirements described above) is required annually so the college can meet federal requirements to assure there is no remaining need that can be met by the

federal government. Students' total aid including campus employment may not exceed the total cost of attendance.

**Athletic Grants:** The Manhattan College Athletics department may fund athletic grants to students who, by the possession of certain athletic skills, can add to the community spirit and morale of the campus. The College firmly states that recipients must come to Manhattan as students, with their first interest in studies. They must meet the same entrance requirements as other students and must maintain satisfactory academic progress. Manhattan adheres to and endorses the principles and policies of the Eastern College Athletic Conference and the National Collegiate Athletic Association. Athletic grants are counted as educational resources for determining the student's eligibility for financial aid.

**Resident Assistant Grants:** Awarded to students selected to serve as Resident Assistants in the dormitories. The Offices of Residence Life and Dean of Students select the recipients by application and interview during the Spring semester. Resident Assistants receive a grant in the amount of room and board charges with an ultimate meal plan.

**Tuition Remission:** An institutional non-need based program available to eligible Manhattan College employees, spouses of employees, and dependent children of employees. Eligibility is authorized and determined by the Human Resources Department. The amount of Tuition Remission a student will receive in a given academic year must be taken into consideration when determining a student's eligibility for federal and state aid programs. The College strongly encourages remission recipients to complete a FAFSA annually. Students receiving Tuition Remission are not eligible to receive other institutional grants or scholarships. It is the sole responsibility of the employee/student to review human resources policies and submit the remission forms by the published tuition deadline along with any fees not covered.

**Tuition Exchange Scholarship:** An institutional grant (tuition only) awarded to the dependents of eligible employees at a Tuition Exchange member institution of higher education. Contact the Office of Admissions and Financial Aid for more information.

## Veterans Administration (VA) Educational Benefits

All recipients of veterans' educational benefits must meet with the certifying officer after proceeding with an application for admission to Manhattan College, please forward your Certificate of Eligibility to Manhattan College's VA Certifying Official, Addie Newman, located in Thomas Hall, 3rd floor (718) 862-7382. The College will receive direct payment from the Department of Veterans Affairs.

The Yellow Ribbon GI Education Enhancement Program (Yellow Ribbon Program) allows institutions of higher learning (degree-granting institutions) in the United States to voluntarily enter into an agreement with the Department of Veterans Affairs (VA) to fund tuition expenses that exceed the highest public in-state undergraduate tuition rate. This tuition-benefit program includes both undergraduate and graduate study and either full- or part-time enrollment. Because of Manhattan College's reasonable tuition rates, this program allows eligible veterans to participate at little or no cost. This significant commitment upholds a long history of Manhattan College support for our veterans and their academic and career endeavors.

## Yellow Ribbon Benefit at Manhattan College

- Up to \$25,162.14 per year per student not to exceed the cost of tuition for the 2020/2021 academic year.
- The Department of Veterans Affairs will match at the same amount and up to 50% of the difference between the student's tuition benefit and the total cost of tuition and fees.
- Participation in Yellow Ribbon may preclude the student from eligibility for any other institutional awards.
- The Yellow Ribbon award amount is based on per-credit-hour tuition and allowable fees.
- Continuing eligibility is contingent upon good academic standing and remaining entitlement with the VA.

## Yellow Ribbon Eligibility Requirements

Only individuals entitled to the maximum benefit rate (based on service requirements) may receive Yellow Ribbon benefits from Manhattan and the VA. We strongly encourage you to review the eligibility criteria directly with the VA at 1-888-GIBILL1 (1-888-442-4551) or online at the VA web site. Upon completion of the application, you will receive a Certificate of Eligibility advising you if your service meets the requirements for the Yellow Ribbon Program.

## Endowed and Special Category Scholarships

Unless otherwise noted, the following private, endowed scholarships are awarded as part of the existing financial aid package. Where no specific criteria is listed, the College reviews, in most cases, financial need, academic achievement, and participation in extracurricular activities on campus when awarding endowments or replacing institutional awards.

### Liberal Arts

**Archbold Charitable Trust Scholarship:** Founded in 1991 by a gift from The Adrian and Jessie Archbold Charitable Trust to provide tuition assistance to undergraduate students enrolled in the School of Arts who demonstrate high scholastic achievement and who have financial need.

**The Anna Bendernagel Memorial Scholarship:** Founded in 2005 by James '73 and Alicia Bendernagel to provide tuition assistance to women majoring in history who demonstrate financial need.

**The Brian S. Broderick '82 Memorial Scholarship:** Founded in 2001 by Mary and Michael Broderick in memory of their son. Financial aid will be provided to deserving undergraduates majoring in English and World Literature or in History who are in need of tuition assistance to complete their degree programs.

**The Brother James X. Collins Memorial Scholarship:** Founded in 1993 by the family and friends of Brother James X. Collins, Lasallian teacher, scholar and tireless worker for Manhattan College, for the people of East Africa and for peace and justice. Tuition

assistance will be provided to undergraduate students enrolled in the School of Arts who demonstrate high scholastic achievement and who have financial need.

**The Coyle Family Scholarship:** Established in 2016 by Arthur J. Mahon '55 in memory of his wife's family to provide tuition assistance to students enrolled in the School of Liberal Arts who have demonstrated high academic achievement.

**The Don Dunphy '30 Memorial Scholarship:** Founded in 1999 by the family of Don Dunphy, broadcasting hall-of-Famer, to assist undergraduates majoring in communications.

**The Professor June Dwyer Scholarship:** Established by the Estate in 2016 to provide tuition assistance to high achieving students enrolled in a Humanities Program.

**The Joseph P. Gibbons '57 Memorial Scholarship:** Established in 2016 to provide tuition assistance to students enrolled in the School of Liberal Arts with a preference to graduates of St. Francis Prep, Queens, NY.

**The Jiri and Zdena Horak Scholarship**

Founded in 2012 by Zdena Horak to honor her husband and his distinguished career as Professor, Chairman of the Council of Free Czechoslovakia, and later as Leader of the Czech Social Democratic Party. The scholarship will provide tuition assistance to undergraduates enrolled in the degree program in government and politics.

**The Josephine and Dominic Laruccia Scholarship:** Founded in 1999 by Stephen D. Laruccia '67, in honor of his mother and in memory of his father to provide tuition assistance to academically qualified and deserving students enrolled in the School of Arts who have unmet financial need.

**The Brian Francis McCarthy '67 Memorial Scholarship:** Established in 2008 by Gerald '65 and Lucile McCarthy to provide tuition assistance to financially needy students enrolled in the School of Arts.

**The Brother Andrew O'Connor Memorial Scholarship:** Founded in 1998 by the members of Sigma Beta Kappa Fraternity in memory of their Founding Moderator to provide tuition assistance to undergraduates enrolled in the School of Arts who are majoring in the humanities and who have financial need.

**The Anne and George Skau '59 Scholarship:** Established in 2008 by Anne and George Skau to provide financial aid to students who transfer from community college and who enroll in the School of Arts. Preference will be given to students pursuing a degree in history or peace studies.

**The Patricia '87 and Mark VanDoninck '73 Scholarship:** Established in 2017 to provide tuition assistance to students enrolled in the School of Liberal Arts who are majoring in the Peace Studies Program.

## Science

**The Elinor A. Christopher Memorial Science Scholarship:** Founded in 2004 to provide tuition assistance to young women who demonstrate financial need, and who are upper-level students enrolled in a science degree program or the Radiological and Health Sciences Program for study in preparation for a career in health care.

**The Colette Dans Memorial Scholarship:** Founded in 2004 by Peter Dans '57 to provide tuition assistance to upper-level women pursuing a career in science or science education.

**The Joseph Dottino MD '47 Scholarship:** Founded in 2006 by Joseph Dottino MD '47 to provide tuition assistance to needy students enrolled full-time in a science degree program in preparation for acceptance in medical school

**The J. Claude Gaulin, MD '52 Memorial Scholarship:** Founded in 2015 to provide tuition assistance to academically superior students who have unmet financial need and are enrolled in the School of Science.

**The Ramon Joseph, M.D. '52 Scholarship:** Established in 2016 to provide tuition assistance to upper-level students enrolled in the School of Science in preparation for a career in medicine.

**The Magovern Family Scholarship:** Founded in 2005 by members of the Magovern family to provide tuition assistance to upper-level students enrolled full-time in the school of science as preparation for a career in medicine.

**The Madelyn and Frank Medici Pre-Med Scholarship:** Founded in 2006 by Dr. and Mrs. Frank Medici to provide tuition assistance to needy students enrolled full-time in a pre-professional program in preparation for acceptance in medical school.

**Evelyn and Jim O'Rourke Scholarship:** Founded in 2005 by Dr. O'Rourke '39 to provide tuition assistance to needy students enrolled full-time in a science degree program in preparation for acceptance in medical school.

**The Richard V. Robilotti '65 Scholarship:** Founded in 2013 by Richard V. Robilotti in memory of his father, James G. Robilotti, Sr. MD, Class of 1922 to provide tuition assistance to full-time academically superior pre-med students as they prepare for acceptance to medical school.

**The William D. Ryan '49 Scholarship:** Founded by bequest in 2016 in memory of Brother Cyprian James Walton, F.S.C. to provide tuition assistance to students enrolled in a science degree program in preparation for acceptance in medical school.

#### **Dr. Robert Beardsley '50 Endowed Scholarship in Biology**

Founded in 2006 by Dr. C. Lowell Parsons '66 in memory of Dr. Robert Beardsley '50, Professor of Biology, Department Chairman and Director of the Plant Morphogenesis Lab at Manhattan College from 1951-1977. It is available to biology majors.

#### **The Brother Bernadine James Elliott, FSC, Memorial Endowed Scholarship**

Established in 2014 by the Elliott family in memory of Br. Bernadine James Elliott, FSC, for computer science majors who are beginning their Junior year.

## **Business**

**The Walter C. Camas '52 Scholarship** established in 2015 by Robert G. Pulver '69 in memory of his uncle to provide tuition assistance to upper-level students enrolled in the School of Business who demonstrate high academic achievement.

**The Brother Raphael Cecchini Scholarship:** Founded in 2007 by Robert M. Fink '57 to gratefully acknowledge his former teacher. Available to full-time students enrolled in the School of Business who are in need of financial aid. To qualify for this award the student must hold a part-time job during the academic year.

**The Brother Francis Charters Memorial Scholarship:** Founded by William P. Twomey of the class of 1967 in memory of Brother Francis Charters, Dean of the School of Business from 1961-66.

**The Dean Robert F. Vizza Scholarship:** Established by Joan and Robert Vizza in 2014 to provide tuition assistance to academically superior students with unmet financial need who are enrolled in an undergraduate program in the School of Business.

**The Forster Educational Foundation Scholarship:** Founded in 1993 by The Forster Educational Foundation to provide tuition assistance to students with unmet financial need who are enrolled in an undergraduate program leading to a degree in accounting.

**The Salvatore and Filomena Garofalo Family Scholarship:** Founded in 2013 by Arthur Garofalo 'EE '65 in memory of his parents to provide tuition assistance to students enrolled in either the School of Business or the School of Engineering.

**The Joseph E. Hanlon '58 Scholarship:** Founded in 2000 by Joseph E. Hanlon, Class of 1958, in memory of his parents Joseph Hanlon and Anne J. La Cour. Financial aid will be provided to deserving undergraduates enrolled in the School of Business who are in need of tuition assistance to complete their degree programs and whose parents are not college graduates.

**The KPMG-John F. Azzariti '73 Scholarship:** Founded in 2012 by partners, retired partners and employees of KPMG LLP in memory of their esteemed colleague, John F. Azzariti. The scholarship will provide tuition assistance to a 4<sup>th</sup> year student with a major in accounting; and who has been admitted to the B.S. in Professional Accounting/Masters of Business Administration Program.

**The Emmett P. Lynch '66 Scholarship:** Founded in 1998 by Emmett P. Lynch '66 to provide tuition assistance to permanent residents of New York City who are enrolled in the School of Business and who have need of financial aid.

**The Robert Charles McGrail Scholarship:** Established in memory of Robert Charles McGrail by his family and friends. Open to a Business junior or senior commuter who demonstrates academic achievement and manifests potential for leadership.

**The Linda M. and Peter M. Musumeci, Jr. Foundation Inc. Scholarship:** Established in 2004 to provide tuition assistance to students with demonstrated financial need, and who are upper-level students enrolled in the business degree program.

**The Peter M. Musumeci, Jr and Linda M. Musumeci Scholarship:** A full-tuition scholarship founded in 2007 by Peter M. Musumeci, Jr '72 and Linda Musumeci to assist needy students enrolled in the School of Business during his/her junior and senior year.

**The Patricia A. and James B. Maguire '56 Endowed Scholarship**

Established in 2019 by Patricia and James Maguire '56, the scholarship will be awarded to students who are enrolled in the O'Malley School of Business, who are first-generation in

their family to attend college, and with a preference to graduates of Cardinal Hayes High School.

**The Professor Alfonse R. Petrocine Memorial Scholarship:** Established in 2010 by Mona Petrocine in memory of her husband, Alfonse R. Petrocine to provide tuition assistance to students enrolled in a business degree program who have maintained a B+ average.

#### **The Walter R. Schnitzler '65 Endowed Scholarship**

Established in 2017 by Walter R. Schnitzler '65 to assist upper-level students with need enrolled in the O'Malley School of Business, preferably in the Accounting program.

#### **The Donald C. Cacciapaglia '73 Endowed Scholarship**

Established in 2017 by the Cacciapaglia family in memory of Donald C. Cacciapaglia '73. The scholarship is awarded annually to students enrolled in the O'Malley School of Business with a preference for those who are the first in their family to attend college.

## **Education**

**The William J. Byron Memorial Scholarship:** Established in memory of William J. Byron, class of 1974 by his family and friends to honor his achievements as an educator and athlete. The scholarship is intended to assist a deserving student majoring in physical education with an emphasis on work with handicapped children or special education children. The scholarship may be used by a handicapped student with the promise of academic achievement.

#### **The James Patterson '69' Scholarship**

Established in 2015 by James Patterson '69' to provide tuition assistance to students enrolled in the School of Education and Health Sciences with a preference for students pursuing careers in education.

**The Renee and Mike Regan '63 Scholarship:** Established in 2017 to provide tuition assistance to students enrolled in the School of Education and Health.

**The Rose E. and Margaret A. Scala Scholarship:** Founded in 2007 by Anthony J. '75 and Mary Ellen Scala provides tuition assistance to students enrolled in the School of Education who are pursuing a career in secondary school math or science education.

**Teacher Preparation Financial Aid Program:** Responding to the national challenge to improve both elementary and secondary levels of education, this program was established by the College to attract academically gifted students into the teaching profession. The program continues Manhattan College's long tradition of preparing young people, especially those of modest means, for careers as teachers. It has been funded in part by a grant from the C.V. Starr Foundation as a memorial to their founder, the late Cornelius Vander Starr.

## **Engineering**

**American Society of Civil Engineers Scholarship:** Established in honor of Arthur J. Fox, Jr. '47 and in memory of Joseph S. Ward '46, who served respectively in 1976 and



1980 as National President of ASCE. This award provides tuition assistance to deserving undergraduates enrolled in the civil engineering program.

**The John V. Avella '64 Memorial Scholarship:** Founded in 1996 by Mary Ann Avella in loving memory of her brother, John V. Avella, Class of 1964. Tuition assistance will be provided to deserving students who are enrolled in the chemical engineering degree program, who have unmet financial need and who are citizens of the United States of America. Nomination by the chair and faculty of the Department of Chemical Engineering.

**The Alexander Bette '31 Civil Engineering Scholarship:** Founded in 2000 by Michael F. Bette in memory of his father to provide tuition assistance to deserving minority students enrolled in the civil engineering degree program who are graduates of New York City secondary schools.

**The Francis R. Burde '49 Scholarship:** Founded in 2004 by a bequest from the estate of Francis R. Burde to provide tuition assistance to deserving students enrolled in the environmental engineering program.

**The Brother C. Timothy Burris Scholarship:** Founded in 2002 by alumni of the chemical engineering program in honor of the former department chairperson and dean of the School of Engineering. Financial aid will be provided to deserving undergraduates majoring in chemical engineering who are in need of tuition assistance and who have demonstrated outstanding academic achievement.

**The Corr-Schmidt Scholarship for Engineering:** Founded in 2007 by Mary Corr in memory of her husband, Dr. Francis Corr B.EE. '54 and her father, John Schmidt B.E. '29. Provides tuition assistance to upper-level engineering students who are First-Generation College Students in need of financial aid.

**D&B Engineers and Architects, PC Founders Scholarship in honor of William F. Cosulich '49 and Nicholas Bartilucci '54:** Established in 2011 to benefit students in need of tuition assistance who are enrolled in the environmental engineering program.

**The William F. Cosulich '49 Memorial Scholarship:** Established in 2018 to provide tuition assistance to students enrolled in the environmental engineering program

**The Thomas Alva Edison Scholarship:** Founded by the Consolidated Edison Company for minority undergraduate engineering students who are residents in the company's service area.

**The Salvatore and Filomena Garofalo Family Scholarship:** Founded in 2013 by Arthur Garofalo 'EE'65 in memory of his parents to provide tuition assistance to students enrolled in either the School of Engineering or the School of Business.

**The John W. Gehrig '50 Scholarship:** Established by Estate in 2016 to provide tuition assistance to high achieving students enrolled in the School of Engineering

**The William '67 and Mary Harkins Endowment for Mechanical Engineering Senior Design Projects:** Established in 2011 for the express purpose of supporting the mechanical engineering program's senior-class design projects.

**The Edmund P. Hennelly Scholarship:** Donated by Edmund P. Hennelly, Class of 1944. The scholarship will be awarded annually to a senior majoring in civil engineering who has maintained an above-average academic record, who demonstrates the promise



of maintaining a high standard of professional ethics, and who has need of tuition assistance.

**The Professor Jeanette Brown '87 Endowed Scholarship**

Established in 2019 by Professor Jeanette Brown '87, the scholarship will be awarded to students who are enrolled in the School of Engineering's Environmental Engineering Program.

**The John F. Hoban Memorial Scholarship:** Founded in memory of John F. Hoban, Class of 1951 Engineering, by the Society of American Military Engineers, New York City Post. Open to a deserving student in Engineering.

**The Raymond J. Hodge Memorial Scholarship:** Founded in 2000 by Lorraine Hodge Fox and Arthur J. Fox '47 in memory of Raymond J. Hodge '44 to provide tuition assistance to deserving students enrolled in the civil engineering degree program.

**The John E. Hogan '40 Scholarship for Engineering:** Founded in 2008 to provide tuition assistance to undergraduate engineering students who have demonstrated financial need.

**The Christopher F. Hughes '74 Scholarship for Civil Engineering:** Established in 2010 by Christopher F. Hughes '74 to provide tuition assistance to students enrolled in the civil engineering program.

**The John J. Lennon '56 Memorial Scholarship:** Established in 2017 by his Estate to provide tuition assistance to students enrolled in the Civil Engineering program.

**The Stephen LePorisz '06 Memorial Scholarship:** Established in 2010 by family and friends to provide tuition assistance to students enrolled in the mechanical engineering program.

**The Raymond M. Maliszewski '56 Memorial Scholarship:** Founded in 2008 by his wife, Jean to benefit financially needy students enrolled in the School of Engineering's electrical engineering program.

**The Robert G. McGrath '52 Scholarship for Engineering:** Founded in 2008 to provide tuition assistance to financially needy engineering students, with preference given to those who participate in community service activities.

**The Moles Scholarship:** Founded in 1998 by members of The Moles to provide tuition assistance to deserving students enrolled in the degree program in Civil Engineering.

**The Charles J. Moore, Jr., Memorial Scholarship:** Established in memory of Charles J. Moore, Jr., class of 1970 Engineering, by his family and friends. Open to a junior or senior in Engineering who intends to pursue a career in electrical or mechanical engineering.

**The James P. Moriarty '54 Scholarship for Civil Engineering:** Founded in 2006 by family and friends to provide tuition assistance to needy students enrolled in the Civil Engineering Program, with preference given to those whose parent works in the construction industry.

**The Patrick F. O'Leary '58 Scholarship:** Established in 2003 by his wife and children in memory of Patrick F. O'Leary '58 to provide tuition assistance to needy students enrolled in the Civil Engineering degree program.

**The James K. O'Neill '90 Memorial Scholarship:** Founded in 2000 by the family and friends of James Keating O'Neill '90. Tuition assistance will be provided to deserving undergraduates majoring in civil engineering who are in need of tuition assistance and who have demonstrated academic achievement worthy of recognition.

**The Professor Joseph P. Reynolds Scholarship for Chemical Engineering:** Established in 2007 as a memorial by his family. The scholarship is available to a first year, full-time Chemical Engineering student, for four years, who demonstrates financial need and maintains good academic standing.

**The Patricia A. and Charles W. Sullivan '60 Scholarship:** Established in 2011 by a bequest from the estate of Charles W. Sullivan '60 to provide tuition assistance to students enrolled in the School of Engineering.

**The Michael A. Vivirito '48 Memorial Scholarship:** Donated by Anna and Fanny Vivirito in memory of their brother. The scholarship will be awarded annually to a junior majoring in engineering who is a graduate of a Catholic high school and has the need for tuition assistance. The award will be renewed in the senior year provided the student has maintained good academic standing and has the need for tuition assistance.

**The James J. Wilson Family Scholarship:** Open to students in Engineering who have completed two years of study, maintained good academic standing and are actively making a contribution to the life of the college through participation in athletics, student activities or co-curricular activities.

**The Thomas B. Zoppo Scholarship:** Founded in 1997 by the family of Thomas B. Zoppo. Tuition assistance will be provided to deserving students who are enrolled in a degree program in the School of Engineering and who have unmet financial need. Preference will be given to residents of New England states.

## General

**The ABCO Peerless Sprinkler Corporation Scholarship:** Founded in 1998 by William G. Bowe '51 and Timothy W. Bowe '81. Tuition assistance will be provided to students electing to concentrate in Catholic Studies who are in need of financial aid.

**The Myles J. Ambrose '48 Scholarship** established in 2009 by Myles J. Ambrose to provide financial aid to needy students. Preference will be given to graduates of State of Virginia Catholic High Schools.

**The Gerard '63 and Susan Caccappolo Scholarship** established in 2008 to provide financial aid to students of Hispanic origin with preference given to inner-city residents.

**The Louis Calder Foundation Scholarship:** Founded in 1993 by the Trustees of The Louis Calder Foundation to provide tuition assistance to deserving students residing in the City of New York who graduated from secondary schools located in the City of New York.

**The Christian Brothers Scholarship:** The Christian Brothers of Manhattan College sponsor scholarships for economically disadvantaged students for whom St. John Baptist de La Salle founded the Institute of the Brothers of the Christian Schools.

**The Class of 1949 Scholarship:** Founded in 1999 as a 50th Anniversary Class gift to provide tuition assistance to deserving students who otherwise might be unable to attend Manhattan College.

**The Warren F. Donahue '42 Scholarship:** Established in 2010 via a bequest from the estate of Warren F. Donahue to provide tuition assistance to students who graduate from Catholic high schools with a preference given to graduates of Mt. St. Michael H.S., Bronx, NY.

**The DeFeo Family Scholarship:** Established in 2006 by Neil and Sandy DeFeo to honor the memory of Noah DeFeo provides financial assistance based on demonstrated leadership, academic excellence and financial need.

**The DiMartino Family Scholarship:** Founded in 1995 by Joseph S. DiMartino '65 to provide tuition assistance to financially disadvantaged students.

**The James Fennell Scholarship:** Established by his family in memory of James Fennell, class of 1905. It is a four-year tuition and board scholarship intended to provide a complete educational experience to worthy students with financial need.

**The Robert M. '57 and Mary W. Fink Endowed Scholarship:** Founded in 2019 by The Gift of Hope Foundation, Inc, to provide tuition and room/board assistance for a student who attended Cristo Rey High School in Atlanta, Georgia, if available. The student must maintain good academic standing and hold a part-time job during the year.

**The Kevin J. Frawley '90 Memorial Scholarship:** Founded in 2004 by family and friends is available to graduates of local Catholic high schools who commute from home to Manhattan College and have a demonstrated need for tuition assistance.

**The Ambassador Charles J. Gargano Scholarship:** Founded in 1996 by the friends of Ambassador Charles J. Gargano, Class of 1979, to provide tuition assistance to academically talented, financially disadvantaged students. Preferential consideration will be given to the residence of Brooklyn, New York.

**The Cornelius Heeney Memorial Scholarship:** Founded in 1992 by the Brooklyn Benevolent Society to provide tuition assistance to an entering freshman who is a resident of Brooklyn, New York and who demonstrates financial need. Annual renewal of the scholarship is contingent upon the awardee's maintaining good academic standing.

**The Horan Family Scholarship:** Founded in 1999 by Julie and John J. Horan '40 to provide tuition and fees assistance to students in need of financial aid, with special emphasis on the children of parents who did not attend an institution of higher education.

**The Michael J. and Aimee Rusinko Kakos Scholarship:** Established in 2007 by Michael J. '58 and Aimee Rusinko Kakos to provide financial aid to graduates of Cardinal Hayes H.S. who have demonstrable financial need.

**The Jeanne-Marie LaBlanc Memorial Scholarship:** Established in 1993 by Elizabeth and Robert E. LaBlanc '56 in memory of their daughter, Jeanne-Marie, to provide tuition assistance to graduates of New Jersey high schools who have need of financial aid to

secure their college education. Continuation of the scholarship requires that the student remains in good academic standing.

**The Arthur J. Mahon '55 Scholarship:** Established in 2016 by Arthur J. Mahon '55 to provide tuition assistance to academically superior students with unmet financial need who are enrolled in an undergraduate Liberal Arts, Science or Business degree program.

**The Kenneth '65 and Helene Orce Scholarship:** Founded in 2006 by Kenneth Orce '65 to provide tuition assistance to students in need, preferably for graduates of Charles E. Gorton High School, Yonkers, New York.

**The O'Rourke Family Scholarship:** Founded in 1998 by John J. O'Rourke, Class of 1966, in memory of his parents, William and Catherine O'Rourke. Tuition assistance will be provided to students who are permanent residents of New York City and who have unmet tuition costs.

**The Richard V. Robilotti '65 Merit Scholarship:** Established in 2017 by Richard V. Robilotti '65 to provide tuition assistance to upper-level students who have demonstrated strong academic achievement and have been active in volunteer services.

**The Brother Luke Salm, FSC Scholarship:** Founded in 2009 by William F. Zucker '79 to benefit financially needy students enrolled in either the School of Arts or the School of Engineering.

**The Valeggia Family Scholarship:** Established in 2008 by Ronald R. Valeggia '69 to provide tuition assistance to needy students. Preference will be given to graduates of Msgr. McClancy Memorial H.S., East Elmhurst, NY.

**The John Vigiano, Jr. Memorial Scholarship:** Established in 2002 by the Travelers Foundation in memory of John Vigiano, Jr., FDNY, who perished in the World Trade Center disaster. Scholarships will be awarded annually to students enrolled in a full-time baccalaureate degree program who are deemed in need of tuition assistance.

**The Joseph Vigiano Memorial Scholarship:** Established in 2002 by the Travelers Foundation in memory of Joseph Vigiano, NYPD, who perished in the World Trade Center disaster. Scholarships will be awarded annually to students enrolled in a full-time baccalaureate degree program who are deemed in need of tuition assistance.

**Sportsmen for Charity Scholarship:** Established in 2016 to provide financial assistance to deserving students at Manhattan College.

### **The Dr. Richard Whiteside '69 Memorial Scholarship**

Established in 2019 by Dr. Whiteside's family and friends. It is offered with a preference for a student(s) who is first in his or her family to attend college.

## **Minority**

**The Frederic V. Salerno Scholarship:** Founded in 1995 by Frederic V. Salerno '65 for minority students who are residents of New York City and are in need of financial aid.

**The William Randolph Hearst Scholarship:** Founded in 1996 by William Randolph Hearst Foundation to provide tuition assistance to academically talented, financially

disadvantaged minority students who intend to reside in the United States of America upon completion of their degree program.

**N.S.S.F.N.S.:** Manhattan College in cooperation with the National Scholarship Service and the Fund for Negro Students will offer several scholarships to students whose application comes through N.S.S.F.N.S. to stimulate the attendance of Black youth at the college. Value: Total value of all scholarships not to exceed \$3000 per year.

## **R.O.T.C., Veterans, and Children of Past/Present Servicemen**

**Air Force R.O.T.C. College Scholarship Program:** Scholarships are available to qualify undergraduate students. Applicants are selected on the basis of SAT scores, quality of academic work, and the results of a personal interview. For further information, contact the ROTC admissions officer at (718) 862-7201 or go to [www.afrotc.com](http://www.afrotc.com).

**American Legion, Riverdale Memorial Post 1525 Scholarship:** Established in 1986 by the American Legion Riverdale Memorial Post. The income from this scholarship fund will provide financial assistance, preferably to an individual who is serving or has served in the U.S. Armed Forces or for his/her dependent.

**The Lieutenant Anthony John Turtora Memorial Scholarship:** Established in memory of Lieutenant Anthony John Turtora, USMC, D.F.C., class of 1940, lightweight varsity crew stroke, by the Albert M. and Lyda M. Green Foundation and his classmates to honor his patriotism, loyalty and self-sacrifice. The scholarship is intended for students who demonstrate qualities of patriotism, leadership and academic ability. Preference will be given to students who have had past, or have present, honorable service with the U.S. military, including participation in an R.O.T.C. program. Past or present membership on the crew team is a preferential, but not a mandatory criterion. Lieutenant Turtora was killed in action in the Guadalcanal area on October 15, 1942 and was awarded posthumously the Distinguished Flying Cross for heroism and extraordinary achievement.

**The Charles J. Wanzel III, USAF Scholarship:** Established in 1992 by Charles J. Wanzel, Class of 1934, and Julia K. Wanzel in memory of their son, Captain Charles J. Wanzel III, USAF. Awarded to an entering freshman who is a U.S. citizen and the child of a member of the U.S. Armed Forces who was killed in action during military conflict or in the line of duty. This four-year scholarship is available to students majoring in engineering, the physical sciences or mathematics.

## **Special Awards**

**The Brother Albert Paul Gladhill Scholarship:** Founded by Roger J. Goebel of the class of 1957 in memory of Brother Albert Paul Gladhill. Awarded to a graduate of De La Salle Collegiate, Detroit, Michigan.

**The Donald R. Broderick Memorial Scholarship:** Established in memory of Donald R. Broderick, class of 1986, by his family and friends. The recipient will be a person of high ethical and moral standards who manifests superior effort in college preparatory studies and is in the top half of their high school class. In the event there is more than one highly-qualified candidate preference may be given to a student from Archbishop Stepinac High

School or from the Metropolitan Catholic High School League who has participated in high school athletics.

**The Stephani Kopalik-Diaferia Scholarship:** This scholarship will be awarded to a Mt. St. Ursula graduate entering college as a freshman. The student must have letters of recommendation from two teachers and a guidance counselor. Financial need may be considered but is not a requirement.

**The James and Mary Houlihan Scholarship:** Established in 2003 by their children to honor their parents and members of the Houlihan Family who were student-athletes. Tuition assistance will be provided to deserving student-athletes upon recommendation of the Director of Athletics.

**The Carl H. Johnson III Memorial Scholarship:** Founded in 1987 in memory of Carl H. Johnson III, the 1986 President of the Manhattan College Sophomore Class, by his fellow students, friends, associates, and family. This fund provides a partial scholarship award to a graduate of Christian Brothers Academy, Lincroft, New Jersey entering as a freshman who best exemplified the scholarship, talents, and spirit of Carl H. Johnson III, with preference given to a student entering Business.

**The Michael '58 and Aimee Kakos Scholarship:** Founded in 2002 by Michael and Aimee Kakos to encourage young Americans to understand and appreciate other cultures and peoples. Tuition assistance will be provided to deserving undergraduates who have been approved for a foreign study program.

**The Mary Jane and James J. Lee '62 Scholarship:** Established in 2013 to provide tuition assistance to high-achieving northern New Jersey high school students, who were recipients of scholarship awards through the Scholarship Fund for Inner-City Children. (SFIC)

**Major John H. Mark, Jr. '00 Scholarship:** Established in 2016 by family and friends to honor the memory of John H. Mark, Jr. This scholarship will provide tuition assistance to students accepted into a Study Abroad program who have an approved extra-curricular project in the form of community service, research or other experiential activity while abroad.

**The Kate Anne McNeil '10 Memorial Scholarship:** Established in 2010 by family, friends, and classmates to honor her memory. The scholarship is intended to enhance the cultural experience of students enrolled in a study-abroad program.

**The Thomas J. Moran '74 Scholarship:** Established in 2016 to honor Thomas J. Moran '74 upon his retirement as President and CEO of Mutual of America. The scholarship will provide tuition assistance to students with unmet financial need with a preference for students from Monsignor Farrell High School.

**The Bob Otten '55 Basketball Scholarship:** Established in 2007 to provide tuition assistance to members of the men's basketball team who are in need of financial aid.

**The Coach Jim McHugh Scholarship for Track and Field Athletes:** Founded in 2017 to help NCAA students who are members of the College's track & field teams. Coach McHugh was a beloved Jasper coach from 1962-69 and coached 15 All-American athletes.

**The Pascal Family Scholarship:** Founded in 1994 by John H. Pascal '54 in memory of the deceased members of the Pascal Family. Tuition assistance will be awarded annually to a member of the men's basketball team upon recommendation of the Director of Athletics.

**The Frederic V. Salerno Inner-City Scholarship:** Founded in 1999 by Frederic V. Salerno '65 to provide tuition assistance to graduates of the Inner City Scholarship Program.

**The Father Erwin H. Schweigardt '61 Scholarship:** Founded in 1998 by Neva Mahoney. Tuition assistance will be provided to students who are permanent residents of the Capital District of New York State and who have unmet tuition costs.

## Academic Achievement

**The Brother Berard O'Leary Scholarship:** Established by Dr. and Mrs. Carl E. Miller only for ending sophomores who have made the greatest academic progress over their freshman year.

**The '41 Jaspers Scholarship:** Founded by members of the Class of 1941, this scholarship will be awarded annually to a senior who has maintained an above-average academic record, who has demonstrated loyalty to the College through extra-curricular activities and community service, and who has need of tuition assistance.

**Tuition assistance awards are provided annually to students with financial need in memory of the following alumni and friends:**

Anthony Albanese  
 Brother Aubert, FSC  
 Anthony Barbieri  
 Robert P. and Elise S. Barry  
 Jonathan Bednarek  
 Brother Phillip Beirne, FSC  
 Carol & Michael Joseph Bernard  
 Colonel George J. Beyer, Jr.  
 Joseph A. Boehmer  
 John F. Brennan  
 Charles A. Buckley  
 John Byrne  
 Brother Amandus Leo Call, FSC  
 Dante Thomas Carota  
 Domenick Joseph Carota, MD  
 Angelo Charles Castelli  
 Brother Honeste Celestine, FSC  
 John and Mary Charters  
 John P. Chemidlin  
 Richard and Virginia Collins  
 Mary and Patrick Courtney  
 Charles Covino  
 Robert and Ramon DeCastro  
 Catherine De Naouley  
 George DeNaouley

Thomas F. De Naouley  
Tamara Branzo-Dinh  
Most Rev. Joseph P. Donahue  
Warren and Edna Dornhoeffer  
Catherine Murray Doyle and Sisters  
John J. Duffy  
William J. Dwyer  
John K. Edgley  
Henry Eipel  
William Eipel  
Catherine and George Favareau  
John O'Donnell Feeks  
Brother Defendant Felix, FSC  
Mary Fennelly  
Mary T. Finn  
Frank A. Finnerty  
Howard and Maxine Floan  
James L. Fitzgerald  
John Fuller Gordon  
Daniel F. Gordon, Jr.  
George and Helen Hochschwender  
Edward Holub  
Sarah A. Hundemann  
Brother Gregory Hunt, FSC  
Edward O. Hynard  
Junius Kellogg  
Fergus C. Kennedy  
Br. Adrian Lewis  
Robert J. Logan  
Ambrose '34 and Margaret Lorne  
James A. Loughran  
Edward P. Lyons  
John A. MacMillan  
Martin and Alma Maglio  
Joseph A. Mahoney  
Richard J. Mahoney  
Charles J. Mauro  
Thomas E. McEntegart  
Joseph and Marie McGovern  
Elizabeth Broch Milone  
William J. Moffett  
William F. Morris  
Charles D. Morrissey  
Edward J. Moylan  
Virginia Casey O'Brien  
Julette O'Rorke  
Owen O'Rorke  
Brother Adelphus Patrick, FSC  
Jerry Podell



Thomas J. Ray  
Robert 'Red' Ronan  
Ellen A. Rooney  
Michael G. Rooney  
Charles W. Secker  
Arthur V. Sheridan  
Ernest E. Stempel  
Joseph Van Etten  
Charles D. Vanier  
Clarence Velz  
Fred and Gertrude Weidl  
Brother Bernard Alfred Welch  
John J. and Anna C. Witmer  
Catherine Wren  
Anthony N. Zock '36  
James L. Zock '38

## Research

**The Louis F. Capalbo Business Research Fund:** Established by Louis F. Capalbo of the class of 1941 to promote research by faculty and students in Business. The income from this endowment will provide support for faculty research projects which include students as research fellows as a complement to ongoing academic activity. Faculty will apply for support on a competitive basis, with the judgment made by the Dean of Business in concert with a review committee.

**The Edward V. Branigan Research Endowment:** Established by Edward V. Branigan of the class of 1940 to promote student creativity and scholarship in Arts and Sciences. Enrolled students or students and faculty will apply for support for specific annual competitions. Judgment is made by the Dean of Arts and the Dean of Science in concert with a review committee.

## Federal Financial Aid Programs

### Grants

**Federal Pell Grant:** This program provides direct grants from the federal government for educational expenses. Students must be enrolled for at least 3 credit hours and demonstrate eligibility according to federal guidelines. Students who hold a bachelor's degree are ineligible. The amount per year varies depending upon federal legislation and appropriations. The maximum annual award for 2020-2021 is \$6,435. Students must complete the Free Application for Federal Student Aid (FAFSA) and comply with all verification requests if selected.

**Federal Supplemental Educational Opportunity Grant (SEOG):** This program is funded by the federal government but eligible students are selected by the college. Awards up to \$4,000 annually are awarded to the students with the most determined need who are also eligible for the Federal Pell Grant. No separate application to the college is required. Funds in this program are also limited and continuing awards are contingent upon the SEOG budget provided to the College each year. Students must complete the Free

Application for Federal Student Aid (FAFSA) and comply with all verification requests if selected.

**Federal Teacher Education Assistance for College and Higher Education (TEACH Grant):** The TEACH Grant is a federal program that strives to encourage teachers into high-need teaching areas in K-12 low-income schools. It allows for a grant (not need-based) of up to \$4,000 per year for students in qualifying undergraduate and graduate programs in exchange for service as full-time highly-qualified teachers in a high-need field within a low-income school upon graduation. If the teaching service years are not fulfilled within eight years of graduating or leaving the qualifying program, the grant is converted into a Federal Direct Unsubsidized loan with interest, and must be repaid in full. Teachers are responsible for gaining employment within these parameters by themselves. No formal assistance is provided by the College. To be eligible, students must be U.S. citizens or eligible non-citizens, have a documented score of at least the 75th percentile on any section of the SAT or ACT or have an overall GPA of at least 3.25, annually complete a FAFSA and Agreement to Serve (ATS) and entrance counseling, and enroll in a teacher certification program in one of the following areas offered at Manhattan: Foreign languages, Mathematics, Science (grades 5-9 and 7-12), Special Education, NYC teachers only for English (grades 5-9 and 7-12), and Physical Education. More information is available on the Student Financial Services website.

**Federal Work-Study (FWS):** This program is extended to students who have remaining financial need after all other offered aid has been applied. Current hourly wage rates begin at \$15.00. A student may work up to 20 hours per week while classes are in session and up to 35 hours per week during vacation periods. Students must complete the Free Application for Federal Student Aid (FAFSA) along with a college application and employment forms. Department supervisors will interview and hire qualified students. Students can apply for direct deposit with the Payroll office or receive a paycheck. FWS funds are not credited to the student account. Students who are not eligible for FWS will be eligible for the college's Campus Employment Program.

**Campus Employment Program(CE):** This program is designed for students who are not eligible for the federal work-study program. The college pays student's wages. The same guidelines apply for wages and hours as the federal work-study program.

## Loans

Loans are another source of financial aid and must be repaid, with interest, with the exception of the Subsidized Stafford Loan and the Perkins loan. Borrowing for education is an important decision and students are encouraged to research all options thoroughly before borrowing from any loan program.

## Federal Loans

### Federal Stafford Direct Loans

Under the William D. Ford Federal Stafford Direct Loan Program, students borrow money from the federal government to pay for their college costs. The U.S. Department of Education makes the loans, through the College, directly to the students' tuition accounts. To be eligible for a Federal Direct Loan a student must be a U.S. citizen or permanent resident alien, enroll in at least six credit hours and be matriculated in an approved degree

program, not owe any refunds on a Pell Grant or other awards received, and not be in default on repayment on any type of student loan.

Each new student loan recipient will be required to complete entrance counseling and a master promissory note before a loan is processed and attend an exit interview when graduating or ceasing at least half-time enrollment in a term. Loan limits will vary on the loan's classification as a Subsidized or Unsubsidized loan and by the student's class standing (see below), but, students cannot borrow more than the cost of attendance less other financial aid. Fixed interest rates, origination fees, and rebate offers are announced by the government by July 1 of each academic year. Various repayment options (standard, extended, graduated, income-contingent) are offered and will be disclosed on the promissory note and during mandatory counseling. Repayment of Direct Stafford Loans processed on July 1, 2012, and thereafter will begin upon graduation, separation or termination as a half-time student.

There are two different types of Direct Stafford Loan:

1. **The Subsidized Stafford Loan** is awarded on the basis of need (determined by the cost of attendance, the expected family contribution, and all other financial aid). The government will pay the interest while the student is enrolled in school.
2. **The Unsubsidized Stafford Loan** is awarded to all eligible students regardless of need. Interest on this loan type, however, will accrue upon disbursement but there are options to defer the interest along with the principal of the loan until repayment on that loan begins.

Dependent students with freshmen status (up to 26 credits earned) may borrow up to \$5,500 per year with a maximum of \$3,500 of that amount offered as a Subsidized loan. Students with sophomore status (at least 27 credits earned) may borrow up to \$6,500 per year with a maximum of \$4,500 of that amount in a Subsidized loan. Students who have earned at least 60 credits may borrow up to \$7,500 with a maximum of \$5,500 of that amount in a Subsidized loan. A dependent undergraduate student may borrow up to an aggregate limit of \$31,000.

Independent students (must meet federal criteria) and students who have documented a parent's PLUS Loan credit denial for the academic year are eligible for additional Unsubsidized loans. Independent students with freshmen status who meet the criteria are eligible to borrow up to \$9,500 per year with a maximum of \$3,500 in Subsidized loans. Students with sophomore status may be eligible to borrow up to \$10,500 per year with a maximum of \$4,500 in Subsidized loans. Students with 60 or more earned credits are eligible to borrow up to \$12,500 with a maximum of \$5,500 in Subsidized loans. An independent undergraduate student may only borrow up to an aggregate limit of \$57,500.

**Federal Parent Loans (PLUS) Direct Loan:** PLUS Loans are available to a parent of a dependent undergraduate student to assist with educational expenses. A credit application and promissory note are required annually and students must be enrolled at least half time and maintain eligibility for federal aid programs. A parent may borrow up to the cost of attendance minus any other type of financial aid. Fixed interest rates and origination fees are announced by the government by July 1 of each academic year. Repayment of parent loans begins 60 days after disbursement or repayment can be deferred while the student is enrolled full-time.

Loan proceeds are forwarded electronically to the Bursar's Office. The student will receive a notification when the loan proceeds are disbursed. Disbursements for an academic period are generally split between the Fall and Spring terms. All student borrowers must comply with mandatory entrance counseling.

## Private Education Loans

**Private or Alternative Loans:** are offered by lending institutions as additional sources of funds for higher education. Students are encouraged to exhaust all federal aid options before resorting to a private loan. Therefore, the college highly encourages a FAFSA application. The student will be the loan applicant and apply online directly with a lender. To determine the best lender, students might consider their creditworthiness, co-signer requirements and creditworthiness, interest rates, loan fees, loan limits, repayment period, repayment and deferment options, grace period offered and the general client service or reputation of the lender. For more information, please contact the lender. Manhattan College does not recommend specific lenders nor do we endorse one lender over the other. The College will provide general information and disclosure information for lenders that MC students have used in the past. Visit the Student Financial Services website for current information.

**Code of Conduct Policy:** Manhattan College enforces a code of conduct policy for all employees who are involved with the administration of federal student aid. The purpose of the policy is to prohibit conflicts of interest in situations involving student financial aid and to establish standards of conduct for employees with responsibility for student financial aid. Visit the Student Financial Services website for current information.

## Academic Progress and Program Pursuit for Federal and Manhattan College Grants, Loans and Work-Study Programs

As an undergraduate student you must meet, at minimum, the following satisfactory progress requirements if you are the recipient of any of these federal or institutional aid programs:

- Federal Pell Grant (PELL)
- Federal Supplemental Educational Opportunity Grant (SEOG)
- Federal Work Study
- Federal Direct Stafford Loan
- Federal Direct PLUS- Parent Loan for Undergraduate Students
- Manhattan College Institutional awards, grants, endowments
- Manhattan College Campus Employment

## Degree and Aid Time Limits

There is a maximum length of time set for completion of a degree program with the benefit of receipt of federal (excluding Pell grants) and/or Manhattan College financial assistance. The standards below provide the basis for academic progress for federal and Manhattan College aid recipients.

Full-time student	Part-time student
6 years	12 years

Students who first received a Federal Pell grant beginning with the Fall 1987 semester, please be advised that the maximum length of time set for you to receive a Pell grant is:

Full-time student	Part-time student
6 years	10 years

Satisfactory Academic Progress (SAP)

All students are required to maintain good academic standing to remain eligible to receive federal and institutional aid. The guidelines vary, depending upon the student's grade level and depending upon which form(s) of aid they are receiving. Good academic standing is measured by reviewing a student's quantitative and qualitative progress. The quantitative measurement ensures that students are making progress toward their degree goals, while the qualitative measurement ensures that students are succeeding in their coursework.

- All undergraduate students are required to have a cumulative average of 2.0 GPA at the end of each academic year.
- All undergraduate students are required to maintain a 2.0 for any institutional aid; this does not include scholarship aid.
- All graduate students are required to have a cumulative average of 3.0 or higher while earning a minimum number of credits to demonstrate good academic standing.
- Each School at Manhattan College may implement additional guidelines for satisfactory academic progress in their programs.

*In additions to Manhattan College academic progress policy for all students, students who receive financial aid are subject to academic progress guidelines as outlined below:*

**I. Cumulative Grade Point Average (GPA):** Students must maintain the required cumulative grade point average established by Manhattan College to continue enrollment and to be eligible for financial aid. Satisfactory progress will be measured for all coursework attempted and/or completed toward the student's degree.

Attempted Credits + Transfer Credits	Cumulative GPA
1-26	2.0
27-59	2.0
60 and above	2.0

**II. Earned Hours (Compared to Attempted Hours):** It is recommended that students attempt to earn at least two-thirds of the credits required per academic year in order to complete graduation requirements in four years. To remain eligible for financial aid, students must earn at least 67% of total cumulative hours attempted.

For financial aid purposes, the following definitions and conditions apply:

- To earn hours at Manhattan College, one must receive a grade of A, B, C, or D\* (including "+" and "-"). All other grades, including F, I or W do not earn hours. *\*Certain grades will not fulfill the academic requirements of a student's major/ degree. Refer to the catalog section on grading policies.*

- Classes from which a student withdraws after the drop/add period count as attempted but not earned hours. Therefore, withdrawing from classes after the drop/add period negatively affects students' ability to satisfy the hours earned standard.
- When a student repeats a course, the total attempted hours will increase with each repeat, but the student may only earn hours for a successfully completed course once. Therefore, repeating courses may negatively affect a student's ability to satisfy the hours earned standard.
- Accepted transfer credit counts as both attempted and earned hours.

**III. Maximum Time Limit:** To remain eligible for financial aid, undergraduate students must complete their degree requirements within 150 percent of the published length of their academic program. At Manhattan College, for example, this means that students in programs requiring 120 hours for graduation are eligible for financial aid during the first 180 attempted hours as an undergraduate. All attempted hours are counted, including transfer hours, whether or not financial aid was received, or the course work was successfully completed.

**SAP Reviews:** At the end of each semester, a review is completed, and students who are out of compliance with one or more of the SAP standards will be notified by the Dean and the Office of Student Financial Services. The College's policies on academic warning, probation and dismissal are cited under the Academic Standards and Procedures section of the catalog. Manhattan College may fund students during their probationary period.

**Regaining Eligibility for Financial Aid:** To regain eligibility, the student may attend summer school and/or any other terms necessary, without aid, until all deficiencies are remedied.

1. **Cumulative GPAs** can **only** be brought up by attendance at Manhattan College programs where credit is earned and grades are calculated for the grade point average.
2. **Hours** deficiencies may be made up by successfully completing coursework at Manhattan College or at another institution. However, if enrolling elsewhere, the student must complete the appropriate forms and have the coursework pre-approved by Manhattan College prior to enrolling in the other institution. Students must provide an academic transcript after transient study coursework has been successfully completed.
3. **Maximum Time Frame:** Once the Time Limit has been exceeded, aid eligibility ends, even if the student is in compliance with the other two standards. There is no regaining eligibility for aid as long as the student is an undergraduate.

Once students are in compliance with all three standards (are back in compliance with the first two standards and still in compliance with the third), they must notify the Financial Aid **in writing** to request a reevaluation of eligibility. This process cannot be done until all grades and hours are posted to the student's official record. No financial aid award can be calculated until after the review process is complete.

**Appeals:** Federal regulations allow for certain cases in which the school may waive the standards. Appeals for the waiver may be considered if a student's failure to comply with one or more areas of Satisfactory Academic Progress is due to mitigating circumstances. These must be appropriately documented for the specific term(s) in which the deficiency

occurred. Eligibility may be regained by appeal. Contact the Director of Student Financial Services and the Dean to process a Satisfactory Academic Progress (SAP) Appeal.

## State Aid

Many states sponsor loan and grant programs for eligible students. Contact your guidance counselor or your state office of higher education assistance for information about funds available from your home state and the availability of these funds for the out-of-state study.

## New York State

**Tuition Assistance Program:** New York State residents attending colleges in New York State are eligible for the Tuition Assistance Program (TAP) Awards through NYS HESC. The purpose of the Tuition Assistance Program is to give access and choice to all New York State residents according to the educational interests and needs of the student. The awards may be received for a maximum of eight semesters.

An annual application for TAP is required along with a completed Free Application for Federal Student Aid (FAFSA), which is available after October 1 of the academic year. Manhattan College's TAP code is 0405 for Bachelor Degree; Associate Degree, TAP code is 0407. ([www.hesc.ny.gov](http://www.hesc.ny.gov))

**Higher Education Opportunity Program:** The HEOP program is a partnership between the State of New York and its independent colleges which provides economically and educationally disadvantaged residents the possibility of a college education. Contact the HEOP Office at the college for more details.

## Other NYS Scholarships and Awards

Contact NYS HESC for information on the following awards:

- Flight 3407 Memorial Scholarships
- Flight 587 Memorial Scholarships
- Military Service Recognition Scholarships (MSRS)
- NYS Science Technology, Engineering and Math Scholarship (STEM)
- New York State Math & Science Teaching Incentive Scholarship
- NYS Memorial Scholarships for Families of Deceased Firefighters, Volunteer Firefighters, Police Officers, Peace Officers, and Emergency Medical Service Workers
- NYS Scholarships for Academic Excellence NYS Volunteer Recruitment Service Scholarship
- NYS World Trade Center Memorial Scholarship
- Enhanced Tuition Award
- NYS Aid to Native Americans
- NYS Regents Awards for Children of Deceased & Disabled Veterans
- Segal Americorps Education Award
- Veterans Tuition Awards
- NYS Achievement and Investment in Merit Scholarship (NY-AIMS)

- New York State Masters-in Education Teacher Incentive Scholarship Program
- Senator Patrica K. McGee Nursing Faculty Scholarship
- NYS Child Welfare Worker Incentive Scholarship Program

## Academic Progress and Program Pursuit for New York State Programs

### Full-time TAP Recipients:

It is most important for all undergraduate full-time and part-time aid recipients to realize that a complete withdrawal from all classes during a particular semester will place the student's financial aid in suspension. The student will automatically become ineligible for financial aid for the following semester. If a student is considering withdrawing from all courses, please visit the Student Financial Services Office.

**The Pursuit of Program:** The Pursuit element expects the student to make an effort to complete the coursework undertaken pursuant to a State award. To satisfy the Pursuit of Program, a student must earn a passing or failing grade in a percentage of the minimum course-load in each term an award is received. The percentage increases from 50% of the minimum part-time load in each term of the first year as the award is received, to 75% of the minimum part-time load in each term of the second year, 100% of the minimum part-time load in each thereafter. The pursuit requirement remains a continuous measure of a student's achievement.

### 1st Year of TAP Payment

50% of a full-time program must be completed each semester (6 credits per semester)

### 2nd Year of TAP Payment

75% of a full-time program must be completed each semester (9 credits per semester)

### 3rd and 4th Year of TAP Payment

100% of a full-time program must be completed each semester (12 credits per semester)

You must meet these program pursuit requirements every semester in order to be eligible to receive your State aid the following semester.

**Satisfactory Academic Progress:** (TAP) is a measure of the student's achievement (credits earned). To make satisfactory academic progress the student must earn / successfully complete a minimum number of semester hours of credit with a minimum grade point average in accordance with the school's standard of progress that has been approved by the Commissioner of Education. A change in legislation in 2010 created a uniform chart used to determine a student's satisfactory academic progress. Their requirements must be met in each term an award is received. For APTS, students have two semesters to meet the Standard of Academic Progress requirements that full-time students must meet in one semester.

Before being certified for this payment the following requirements must be met:

Semester	Minimum Credits	Minimum GPA Accrued
1st	0	0
2nd	6	1.50
3rd	15	1.80



4th	27	1.80
5th	39	2.00
6th	51	2.00
7th	66	2.00
8th	81	2.00
9th*	96	2.00
10th*	111	2.00

*\*Note: Only students in five-year programs, approved pursuant to section 145-2.7 of the Regulations, are eligible for more than eight semesters of undergraduate awards.*

A recipient of New York State aid who fails to meet the program pursuit of satisfactory academic progress requirements in a particular semester may wish to make up the necessary credits or achieve the required cumulative index by taking credits at his/her own expense in a given semester. If the student is then in good academic standing for receipt of New York State aid, the aid will be reinstated the following semester.

## Aid for Part-Time Study Recipients

Undergraduate students receiving New York State Aid for Part-Time Study (APTS) must also meet both satisfactory academic progress and program pursuit requirements. In order to be eligible for State aid the following semester, you must meet the program pursuit every semester.

**Waivers for Extenuating Circumstances:** A recipient of New York State aid who is able to document reasonable circumstances underlying the lack of academic progress in a particular semester can provide the documentation with a written appeal outlining such reasons to the Registrar's Office. This request, if granted, will be processed as a one-time waiver of the New York State satisfactory academic progress requirements and the grant will be permitted to disburse for that term. During the waiver semester, the student must make up the academic progress deficiency for the next term.

## Higher Education Opportunity Program ( HEOP)

**Higher Education Opportunity Program:** Under New York's Higher Education Opportunity Program (HEOP) academically and financially disadvantaged students may receive academic support and financial aid grants from both the college and the State to ensure college success. Contact the HEOP Office at the college for more details.

Semester	Minimum Credits	Minimum GPA Accrued
1st	0	0
2nd	3	1.10
3rd	9	1.20
4th	21	1.30
5th	33	2.00
6th	45	2.00
7th	60	2.00
8th	75	2.00

9th*	90	2.00
10th*	105	2.00

# Programs of Study

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Enrollment in other than registered or otherwise approved programs may jeopardize a student's eligibility for certain student aid awards. The following courses of study are registered and approved by The New York State Education Department:

## School of Liberal Arts

Hegis Code	Major Areas of Study	Degrees Granted
1003	Art History	B.A.
0601	Communications	B.A.
2204	Economics	B.A.
1501	English	B.A.
4999	Environmental Studies	B.A.
1102	French	B.A.
4901	General Studies	B.S.
2205	History	B.A.
2210	International Studies	B.A.
0516	Labor Studies	B.A.
4903	Peace & Justice Studies	B.A.
1509	Philosophy	B.A.
2207	Political Science	B.A.
2001	Psychology	B.A./B.S.
1510	Religious Studies	B.A.
2208	Sociology	B.A.
1099	Sound Studies	B.A.
1105	Spanish	B.A.
2214	Urban Affairs	B.A.

Areas of Concentration: Computer Science, Economics, English, Government, History, Mathematics, Philosophy, Psychology, Religious Studies, Sociology

## O'Malley School of Business

Hegis Code	Major Areas of Study	Degrees Granted
0502	Accounting	B.S.
0503	Business Analytics	B.S.
0701	Computer Information Systems	B.S.
2204	Economics	B.S.
0504	Finance	B.S.
0506	Management	B.S.

0509	Marketing	B.S.
0501	Business Administration	B.S.

## School of Education & Health

Hegis Code	Major Areas of Study	Degrees Granted
1299	Allied Health	B.S.
0802	Childhood Ed: Biology	B.S.
0802	Childhood Ed: Chemistry	B.S.
0802	Childhood Ed: English	B.A.
0802	Childhood Ed: French	B.A.
0802	Childhood Ed: General Science	B.S.
0802	Childhood Ed: General Studies	B.S.
0802	Childhood Ed: Math	B.S.
0802	Childhood Ed: Psychology	B.A.
0802	Childhood Ed: Social Studies	B.A.
0802	Childhood Ed: Spanish	B.A.
0835	Physical Education	B.S.
1299	Exercise Science	B.S.
1225	Radiological and Health Sciences	B.S.
0808	Adolescent Education	B.S.
0401	Adol. Ed: Teacher of Biology	*B.S.
1905	Adol. Ed: Teacher of Chemistry	*B.S.
1501	Adol. Ed: Teacher of English	*B.A.
1102	Adol. Ed: Teacher of French	*B.A.
1701	Adol. Ed: Teacher of Mathematics	*B.S.
1902	Adol. Ed: Teacher of Physics	*B.S.
2201	Adol. Ed: Teacher of Social Studies	B.A.
1105.01	Adol. Ed: Teacher of Spanish	*B.A.
0803	Adol. Education	B.A.
1214	Public Health	B.S.

\* Certification available at Elementary or Secondary Level.

## School of Engineering

Hegis Code	Major Areas of Study	Degrees Granted
0906	Chemical Engineering	B.S.
0908	Civil Engineering	B.S.

0999	Computer Engineering	B.S.
0909	Electrical Engineering	B.S.
0910	Mechanical Engineering	B.S.

School of Science

Hegis Code	Major Areas of Study	Degrees Granted
0414	Biochemistry	B.A./B.S.
0401	Biology	B.A./B.S.
1905	Chemistry	B.A./B.S.
0701	Computer Science	B.A./B.S.
0420	Environmental Science	B.A./B.S.
1701	Mathematics	B.A./B.S.
1902	Physics	B.A./B.S.

School of Continuing and Professional Studies

Hegis Code	Major Areas of Study	Degrees Granted
1299	Allied Health	B.S.
2299	Organizational Leadership	B.S.
5649	General Studies	A.S.

# Student Life

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## Division of Student Life Mission Statement

In keeping with the College's mission, the Division of Student Life partners with our faculty colleagues in providing students with a contemporary, person-centered educational experience that facilitates students' personal development, professional success, civic engagement and service to their fellow human beings. The Division accomplishes this through programs and services that challenge and support students in order to create an educational environment conducive to student learning. In seeking to provide a transformative educational experience, we recognize that effective learning occurs in a variety of settings and contexts, both inside and outside the classroom. For this reason, we assist students through fostering connections that enable their intellectual, spiritual, physical, vocational and cultural development.

In keeping with our Lasallian Catholic heritage, the Division challenges and supports students by providing a safe, healthy, engaged and respectful living and learning community that embraces diversity and celebrates our unity in being created in the image of God. Members of the Student Life Division accomplish this by working in a highly collaborative manner ***together and by association*** with all campus constituents and institutional stakeholders.

## Vision

The work of the Student Life Division will contribute to the College's strategic vision by providing co-curricular opportunities and services that prepare students to be informed, resilient, faith-filled and compassionate individuals. Students begin the process of discovering their vocational and leadership potential through these endeavors. In providing a person-centered educational experience we help students understand, reflect on and transform their lives and the world around them.

## Values

The Division embraces and puts into daily practice the Lasallian core values:

### ***Respect for all persons***

We honor and respect the dignity of all individuals as persons created in the image of God.

### ***Quality education***

We engage in quality education together as students, staff and faculty by thinking critically and examining our world in light of faith.

### ***Faith in the presence of God***

We believe in the living presence of God in our students, in our community and our world.

### ***Concern for the poor and social justice***

We are in solidarity with the poor and marginalized and advocate for those suffering from injustices.

***Inclusive community***

We celebrate diversity and welcome all members to our community.

# Athletics

## Intercollegiate Club and Intramural Athletics

Manhattan College sponsors 19 Division I intercollegiate athletics programs that compete in the Metro Atlantic Athletic Conference. A charter member of the Metro Atlantic Athletic Conference, the Jaspers have won 83 MAAC championships and own one national championship, the 1973 NCAA title in men's indoor track and field. Several accomplished student-athletes have competed for the Jaspers in recent years, including former NBA player Luis Flores '04, four-time Olympian Aliann Pompey '00.

Draddy Gymnasium draws several students each day for recreation, physical education classes, intramural play, club competition, and varsity sport contests and practices. Gaelic Park hosts most of Manhattan College's outdoor sports, including men's soccer, women's soccer, men's lacrosse, women's lacrosse and softball. Manhattan's baseball team plays its home games at Van Cortlandt Park.

## Athletics Staff

**Marianne Reilly**, M.A., Director of Intercollegiate Athletics

**Tony Vecchione**, M.A., Deputy Athletic Director

**Kathryn Mirance**, M.A., Associate Athletic Director, Business Affairs/Senior Woman Administrator

**Whitney Swab**, B.A., Associate Athletic Director for Marketing, Fan and Donor Experience

**Douglas Straley**, M.S., Associate Athletic Director for Sports Medicine and Athletic Performance

**Kevin Ross**, M.A., Director of Sports Communication and Media Relations

**Sal LaMonica**, B.A., Assistant Director of Athletics Facilities and Event Management

**Kat Torode**, B.A., Senior Student-Athlete Academic Advisor

**Amani Tatum**, B.A., Coordinator, Student-Athlete Academic Success Services

**Susan Pape**, Administrative Assistant To The Director of Athletics

**Kelly Carroll**, M.A., Assistant Director of Sports Communication, Digital & Emerging Media

**Jaclyn Rettig**, B.S., Assistant Sports Medicine Director

**Samantha Gigante**, M.S., Athletic Trainer

**Mike Cole**, B.S., Head Coach, Baseball

**Stephen Masiello**, B.A., Head Coach, Men's Basketball

**Heather Vulin**, M.A., Head Coach, Women's Basketball

**Kerri Gallagher**, B.A., Head Coach, Men's & Women's Cross Country, Middle Distance and Distance

**Matt Centrowitz**, B.A., Director of Cross Country, Track and Field

**Phil Wildermuth**, B.A., Head Coach, Men's Golf

**Drew Kelleher**, B.A., Head Coach, Men's Lacrosse

**Katie McConnell**, M.A., Head Coach, Women's Lacrosse

**Alex Canale**, M.A., Head Coach, Women's Rowing

**Jorden Scott**, B.S., Head Coach, Men's Soccer

**Brendan Lawler**, B.A., Head Coach, Women's Soccer

**Thomas Pardalis**, M.S., Head Coach, Softball

**Patrick Malone**, M.S., Head Coach, Swimming & Diving



**Lora Sarich**, M.A., Head Coach, Volleyball

## The Office of Campus Ministry/Social Action

Rooted in the Lasallian Catholic tradition, the mission of Campus Ministry & Social Action is to promote faith, service, social justice and community throughout Manhattan College.

Inspired by faith and zeal, we accompany students, faculty and staff to encounter, engage, reflect, and act in the world and to find meaning and purpose on their life and faith journeys.

There are opportunities for spiritual development, community service, and reflection on social justice as well as putting faith into action. CMSA offers a variety of programs, including prayer, liturgies, meditations, discussions, retreats, lectures, service/immersion trips, local community service projects, and social events.

CMSA seeks to serve students of all religious traditions. Through LIFT, Lasallians in Faith Together, there are several retreat experiences available each semester. Catholic Mass is available on weekdays and on Sunday evenings. CMSA assists members of the campus community interested in becoming Catholic or receiving the sacraments. For JummaH prayer, space is available on Fridays for Muslim students.

Many students participate in local community service projects. These include God's Love We Deliver, blood drives, working with the elderly, serving at a soup kitchen, tutoring children and teens, helping Bronx residents file their income taxes and more. Students are always encouraged to develop new projects especially through LOCo, the Lasallian Outreach Collaborative.

CMSA sponsors L.O.V.E., the Lasallian Outreach Volunteer Experience. Through LOVE, students can participate in domestic and international service and immersion trips during Intersession, Spring Break and the early summer. Recent LOVE destinations have included New Orleans, Ecuador, the Dominican Republic, the Arizona / Mexico border, Jamaica, Florida, Palestine, Haiti, and the Blackfeet Reservation in Montana.

Through CMSA, Manhattan has been designated a Catholic Relief Services 'Global Campus' in recognition of the College's commitment to CRS' international relief and development work. Manhattan also has the distinction of being the first Fair Trade College in New York City and the fifth in the country.

CMSA partners with Academic Affairs to support faculty offering Community Engaged Learning (CEL) courses at Manhattan College. CEL courses involve faculty developing reciprocal, mutually-beneficial community partnerships with the goal of engaging their students in relevant and meaningful service or research connected to course content, organized around clear learning goals and addressing real community needs as defined by the community.

Campus Ministry and Social Action has two convenient locations: Cornerstone, located in Miguel Hall, room 209, and the Social Action Suite, 2.03, in Kelly Commons. Students are always welcome to drop in and enjoy the comfortable lounges, get the latest information on programs and see the staff members who are available for conversation, consultation and pastoral counseling.

For more information: <https://inside.manhattan.edu/student-life/cmsa/index.php> (<https://inside.manhattan.edu/student-life/cmsa/>)

## Center for Career Development

The mission of the Center for Career Development (<https://inside.manhattan.edu/student-life/career-pathways/career-development/>) is to contribute to the educational and professional development of students by helping them discern their vision for what constitutes a meaningful and purpose-driven career. We accomplish this by providing comprehensive, person-centered career counseling, programs, and events that encourage students to consider all career pathways, including graduate school and employment opportunities. We honor the uniqueness of all schools, providing diverse professional opportunities across disciplines and industries. Our approach facilitates engagement by employers, alumni and all devoted to the professional success of our students.

CCD provides walk-in hours and offers various professional training programs and services throughout the year. Students and alumni can schedule individual career counseling appointments to assess their interests, values, skills and preferences. Decision-making tools and career assessments are used to develop person-centered counseling. Career counselors teach effective job search techniques; discuss opportunities in a variety of career paths; help tailor résumés and cover letters; strengthen personal branding and build strong interviewing skills.

Students and alumni can access the on-line, 24-hour job posting board, Handshake (<https://inside.manhattan.edu/student-life/career-pathways/career-development/students/job-board.php>), for full-time, part-time, internship (current students only) and temporary positions. For those seniors seeking full-time employment upon graduation, there is an active On-Campus Recruitment Program (<https://inside.manhattan.edu/student-life/career-pathways/career-development/students/recruiting.php>) available during the fall and spring semesters. Representatives from companies/organizations come to campus to interview students for career opportunities.

Additionally, CCD offers the Mentor Program (<https://inside.manhattan.edu/student-life/career-pathways/career-development/students/mentor-program-students.php>) for Manhattan College students to gain insight into their intended careers by being paired with professionals, generally Manhattan College alumni, in those career areas. Meeting with mentors several times a semester, visiting the work sites, talking with other employees at the company, sitting in on a meeting, or sometimes participating in a project, offers the students opportunities to think about a chosen career field early in their college career. The program is open to incoming freshmen in the School of Engineering and to sophomores and juniors in the Schools of Liberal Arts, Business, Education & Health and Science during the participating academic year.

Students can gain valuable work experience through the credit-based Internship Program (<https://inside.manhattan.edu/student-life/career-pathways/career-development/students/internships.php>). A student can apply for an internship after earning 54 academic credits, completing the basics in their major (at least 12 credits) and who are in good academic standing. School of Engineering programs are not included because they do not award credit for internships. Internships complement and broaden students' education through the practical application of the theoretical and technical knowledge gained in the classroom. For those interested in the no-credit internship, review COOP 401 (see below) and schedule an appointment with a career counselor from CCD.

For any questions please stop by the Center for Career Development located in Thomas Hall, Suite 330 or contact us at 718-862-7224 or [careerdevelopment@manhattan.edu](mailto:careerdevelopment@manhattan.edu).

## Counseling Center

The Counseling Center staff provide services to currently enrolled Manhattan College students. Those who utilize the services of the Center present a wide variety of problems and concerns, such as adjustment to college, homesickness, resolving conflicts, improving relationships, reducing stress, coping with feelings of anxiety or depression, and concerns about alcohol or other substance abuse. In addition, Center staff provide consultation services by phone or in office to those members of the Manhattan College academic community who have questions or concerns about how to help others (e.g., friend, family member, student) as well as referrals to community resources.

All services of the Counseling Center are confidential. Records maintained in the Counseling Center are separate from the college academic records. All staff members of the Counseling Center adhere to professional and ethical standards regarding confidentiality. The limits of confidentiality are discussed with each student at the first session.

The Counseling Center is located in Miguel Hall, Room 501. Appointments are recommended (call ext. 7394), however, walk-ins are accommodated as quickly as scheduling permits. The office is open weekdays from 9:00 a.m. to 4:30 p.m. and evenings by appointment.

## Health Services

Health Services staff provide medical care for common health problems, including: acute illnesses, injuries, blood pressure checks, vision screenings, allergy injections, suture removal, nutritional counseling and a variety of other health-related services. In addition, the staff facilitates referrals to off-campus health care providers when necessary. Services are available to all registered students. Medical services provided by our nurse practitioner and physicians are at no charge. Likewise, students do not pay for any prescription medicines that we have available in stock. If a student requires outside services, such as laboratory analysis, x-rays, etc., they will be responsible for payment to that provider of services.

Health Services is located in Alumni Hall, Room 104 (next to the Fitness Center). The office is open every day at 9:00 am to 4:30 pm with staffing by our Nurse Practitioner. The College Physicians is on campus for limited hours on Mondays and Wednesdays. Students are advised to call (718-862-7217) ahead of time before coming to see the physician, although walk-ins are accepted.

Students in need of health care after Health Service hours may contact residence life staff or security for assistance. Medical care is always available at the Allen Pavilion Emergency Room (Broadway and 217th St.), which is part of the Columbia/New York Presbyterian Hospital System, or St Joseph's Hospital in Yonkers, NY.

**Medical Emergencies:** Whenever a medical emergency arises, Campus Security (718-862-7333) should be contacted immediately. Campus Security responds to all emergency calls 24 hours a day, notifying Health Services or New York City Emergency Medical Services as appropriate. While every effort will be made to notify parents or guardians in case of serious illness or accidents requiring emergency treatment, it is understood and agreed that even without such notification those concerned give their

permission and consent to the College to take such measures as may be deemed necessary.

**Immunizations:** New York State Law mandates that all students born after January 1, 1957 submit proof of their immunity against measles, mumps and rubella to the College as well as a completed Meningitis Response Form. Records may generally be obtained from the student's private physician or previous educational institution. Faxed copies (to 718-862-7797) are acceptable if they are clear and legible. If a student cannot obtain his/her immunization records, s/he may arrange to have a blood test to determine immunity. A blood test can be conducted at Health Services, although the student will be responsible for the laboratory analysis fee. Free MMR immunizations are available at Health Services for those who are uninsured. Any student who is having trouble obtaining the necessary medical records should contact the Health Services staff for assistance (718-862-7217). Immunization compliance matters can generally be resolved quickly once a student requests assistance.

**Insurance and Fees:** The College provides a basic Student Accident Insurance Plan for all full-time undergraduates upon registration. An additional Sickness Insurance Plan is available on a voluntary basis. Inquiries regarding insurance should be directed to the Vice President/Chief Financial Officer and Treasurer (718-862-7356).

# The Council for Faculty Affairs

## Faculty Council

## The Council for Faculty Affairs

### Officers

#### ***Sr. Remigia Kushner, Chair***

*Terms concluding in 2012-2013:*

Bruce Liby, Bahman Litkouhi, Bernadette Lopez-Fitzsimmons, Fiona Maclachlan, Eoin O'Connell, Mark Pottinger, Bruce Shockey.

*Terms concluding in 2013-2014:*

Patrick Abulencia, Cory Blad, Br. Patrick Horner, Michael Judiesch, Sr. Remigia Kushner, Michele Saracino.

*Terms concluding in 2014-2015:*

Kevin Farley, Gary Kolks, Pam Chasek, George Prans, Lisa Toscano, Marc Waldman, Kathryn Weld.

### Standing Committees of the Faculty

(The President and the Executive Vice President and Provost are ex officio members of all faculty committees except the Grievance Committee and the Committee on Termination of Service.)

Curriculum Committee for School of Arts: Ashley Cross, Chair; Jennifer Edwards, Bernadette Garam, Margaret Groarke, Rebecca Kern, Kelly Marin, Eoin O'Connell, Richard Emmerson.

Curriculum Committee for School of Business: Faraj Abdulahad, Salwa Ammar, Ahmed Goma, Hany Guirguis, Fred Greene, Patrick Jeffers, Yassir Samra, Zhe Shan.

Curriculum Committee for School of Education: Corine Fitzpatrick, Lawrence Hough, Elizabeth Kosky, Sr. Remigia Kushner, Tedd Keating, Br. Augustine Nicoletti, William Merriman.

Curriculum Committee for School of Engineering: Ann Marie Flynn, Bahman Litkouhi, Moujalli Hourani, Mohammad Naraghi, Richard Schneider, Robert Sharp, Gordon Silverman, Tim J. Ward.

Curriculum Committee for School of Science: Jianwei Fan, Carol Hurwitz, Michael Judge, Val Kolesnikov, Bruce Liby, Darcy Lis-Beglane, Constantine Theodosiou.

Committee on Faculty Research Projects and Grants: Matthew Jura, Heather Dodge, Scott Lowe, Sr. M. Jacobs, Kelly Marin, Kudret Topyan.

Committee on Publications Board: Thom Gencarelli, Fiona Maclachlan.

Committee on Promotion and Tenure: Salwa Ammar, William Clyde, Richard Emmerson, Jeff Horn, Michael Judge, Arno Kolz, Elizabeth Kosky, Shawn Ladda, Bahman Litkouhi,



William Merriman, Carolyn Predmore, Gordon Silverman, Andrew Skotnicki, Thomas Smith, Constantine Theodosiou, Mehmet Ulema, Tim Ward.

Committee on Sabbatical Leave: Thomas Ferguson, Chair; Joan Cammarata, Mark DeBonis, Richard FitzPatrick, Elizabeth Kosky, Mohammad Naraghi, Romeo Pascone, Kudret Topyan.

Committee on Summer Grants: Graham Walker, Chair; Bridget Chalk, Jeff Cherubini, Ira Gerhardt, Michael Judiesch.

Committee on Faculty Welfare: Stephen Kaplan, Chair; Anirban De, Christoph Lienert, Bahman Litkouhi, Thomas Smith, Mehmet Ulema.

Judiciary Committee on Student Affairs: Michael Antolik, Br. Robert Berger, David Bollert, Peter Boothe, Robert Brakman, Joan Cammarata, Brian Chalk, Kimberly Fairchild, Ira Gerhardt, Samira Hassa, John Leylegian, Luis Loyola, Kelly Marin, Peter McCarthy, Deirdre O'Leary, Stacy Pober, Evelyn Scaramella, Gwendolyn Tedeschi, David Witzling.

Athletics Committee: James Abulencia, William Bisset, Robert Byrnes, Michael Carey, Deborah Gregory, Shawn Ladda, Quentin Machingo, Zella Moore, Ariel Pesante, Yassir Samra, Richard Satterlee.

Faculty Grievance Committee: Thomas Ferguson, Chair; Mitchell Aboulafia, Gary Kolks, John Mahoney, Claudia Setzer.

Committee on Termination of Service: Joan Cammerata, Sr. Joan Harnett, Michael Judiesch, Mary Noberini, David Witzling.

Committee on Faculty Technology: Sr. Mary Ann Jacobs, Chair; Evriclea Voudouri, Gwendolyn Tedeschi, Mohammad Naraghi, Ming-Hui Hsu, Stacy Pober, Kimberly Fairchild, Margaret Toth, Chia-Jane Wang, Bernadette Lopez-Fitzsimmons, Rostislav Konoplich.

## Computer Facilities

A wide variety of computing resources are available to Manhattan College students, faculty, and staff via JasperNet, the college's campus-wide network. JasperNet deploys wired and wireless computing and information services to campus laboratories, classrooms, and offices, as well as to student residence halls. Computer labs running Microsoft Windows 10 are available across the Manhattan College campus. See more information about computer labs (<https://inside.manhattan.edu/offices/its/computer-labs.php>).

All campus locations are connected via a multi-gigabit backbone network. JasperNet provides many network based applications and services including online courses and web based storage as well as E-mail, Internet access, and laser printing in the laboratories. A wide range of software is available including math and statistical packages (Maple, MathCad, MatLab, SPSS, Excel), compilers (C++ & Visual Studio), databases (Access, SQL), word processors (MS Word), presentation graphics (PowerPoint), multimedia authoring (Adobe Design Premium), as well as department-specific applications (E.g. Abaqus & AutoCad). See list of software available in computer labs (<https://manhattan.teamdynamix.com/TDCClient/KB/ArticleDet/?ID=2768>) for more information. JasperNet provides full ethernet connectivity to students in all of the College's residence halls. Students living in these networked buildings can connect their own networkable devices directly to JasperNet.

A dedicated Website for the College – <http://manhattan.edu> (<http://www.manhattan.edu>) – is maintained by the Information Technology Services Department and supports pages of information including online catalogs, handbooks, and policies. Some faculty members maintain web pages for their courses on the server supported by a separate file server to facilitate the posting of online courseware. The Information Technology Services Department also provides online support, documentation, and other services via their web site: <https://m> (<https://inside.manhattan.edu/offices/its/>) [manhattan.edu/its/](http://manhattan.edu/its/) (<http://manhattan.edu/its/>).

Computing laboratories are equipped for digital projection and many are used as hands-on classrooms. Laptop computers with projection capabilities are used by instructors for demonstrations purposes in other classrooms throughout the campus which are linked to JasperNet.

## Computer Laboratory Hours:

### Research & Learning Center

Day	Time
Monday-Friday	8:00am - 10:30pm
Weekends	10:00am - 5:30pm

### De La Salle CIS Lab

Day	Time
Monday-Friday	8:00 am - 10:00 pm

# O'Malley Library Computing Labs

Day	Time
Sunday-Saturday	24/7

## Dean of Students

The Dean of Students is the principal student advocate and provides guidance and direction to all students at Manhattan College. The dean coordinates student life assessments, provides leadership and supervision of student activities, facilitates interdepartmental interaction, and serves as a central student crisis intervention resource by supporting and coordinating student referrals both within and outside of the division. The dean upholds the Manhattan College Community Standards and Student Code of Conduct by coordinating all judicial affairs for the college community. The Dean of Students also directly supervises Residence Life, Student Activities, the International Student Advisor and the One Card Office. The Dean also works closely with Student Government to further incorporate student wishes and needs into College life.

The dean's office is located in Thomas Hall, room 514; telephone (718) 862-7438.

## Orientation Programs

In June, incoming first-year students are expected to participate in a two-day orientation program. The goals of this program are to provide an opportunity to meet with academic advisors, register for fall classes and gain insight into student life on campus. All students are expected to stay on campus overnight. Parents are invited to attend sessions planned especially for them. Additionally, during the beginning of each semester, workshops and activities are planned to help students gain valuable college and life skills.

**Faculty Advisory System.** The College administers a basic program of formal guidance designed to meet students' needs for personalized and academic counseling from the time of admission to graduation. Greatest emphasis is placed on guidance throughout the freshman year, the period during which the student is most in need of assistance. Every first-year student is provided with a Faculty Advisor from his or her own academic School.

## Student Conduct

At Manhattan College, community is based on the mutual respect of many persons engaged in different aspects of the academic venture. In this cooperative educational experience, the Manhattan community has found that certain kinds of behavior defeat the respect we bear for one another. These behaviors are outlined in the Manhattan College Community Standards and Student Code of Conduct. The implementation of the Community Standards and Student Code of Conduct is directly influenced by the thought and writings of St. John Baptist de La Salle.

Inappropriate behavior observed by campus officials, as well as information provided by the police and other local authorities, will be addressed. The College will sanction such behavior in accordance with the policies and procedures as outlined in the Manhattan College Community Standards and Student Code of Conduct. For further information on judicial procedures, including College jurisdiction, residence hall guidelines, and procedures for hearings, please refer to the *Manhattan College Community Standards and Student Code of Conduct*.

Disciplinary authority is vested in the Dean of Students. This authority may be exercised by referral to one of the following hearing boards: the Student Court, the College Judiciary Council, or the Dean of Students' Board. For detailed information on each board, refer to

the Manhattan College Community Standards and Student Code of Conduct or contact the office of the Dean of Students, Thomas Hall, room 514; telephone (718) 862-7438.

Pursuant to Article 129-B §6444.6 of the New York State Education Law, if a student is found responsible through the College's judicial process for crime(s) of violence, including, but not limited to sexual violence, as set forth at 20 U.S.C. § 1092(f)(1)(F)(i)(I)-(VIII) ("Clery Act crimes of violence"), the Dean of Students will direct that a notation be placed on the student's transcript.

Where the sanction is a suspension, the following notation will be listed:

- "SUSPENDED AFTER A FINDING OF RESPONSIBILITY FOR A CODE OF CONDUCT VIOLATION."
- Where the sanction is expulsion, the following notation will be listed: "EXPELLED AFTER A FINDING OF RESPONSIBILITY FOR A CODE OF CONDUCT VIOLATION."

Should a student withdraw from the College, while such conduct charges are pending for allegation(s) related to Clery Act crimes of violence and the student declines to complete the student judicial process, the Dean of Students will direct that the following notation be placed on the student's transcript: "WITHDREW WITH CONDUCT CHARGES PENDING."

## Drug and Alcohol Violation Disclosure

Section 444 of the General Education Provisions Act (20 U.S.C. 1232 g) is amended by adding at the end the following: (i) Drug and Alcohol Violation Disclosures.

1. In General – Nothing in this Act or the higher Education Act of 1965 shall be construed to prohibit an institution of higher education from disclosing, to a parent or legal guardian of a student, information regarding any violation of any Federal, State, or local law, of any rule or policy of the institution, governing the use or possession of alcohol or a controlled substance, regardless of whether that information is contained in the student's education records, if -
  - a. the student is under the age of 21
  - b. the institution determines that the student has committed a disciplinary violation with respect to such use or possession.
2. State Law Regarding Disclosure – Nothing in paragraph (1) shall be construed to supersede any provision of State law that prohibits an institution of higher education from making the disclosure described in subsection (a).

## Disciplinary Hearings Committee

Disciplinary authority is vested in the Dean of Students. This authority may be exercised by referral to the College Judiciary Council, or the Dean of Students' Board.

Any member of the College community may report in writing to the Dean of Students an alleged incident of academic dishonesty as defined in the policy on Academic Integrity. The student(s) involved then becomes subject to an investigation and possible

subsequent disciplinary action. The Dean of Students Office is located in Thomas Hall 514.

## **Student Privacy Rights**

### **Background Information**

The primary purpose of The Family Educational Rights and Privacy Act of 1974 is to grant college students "the right to inspect and review any and all official records, files and data directly related to them," and generally to deny access by others without written consent of the student except in limited and specified circumstances.

### **Definitions and Procedures**

Included with the coverage of the Act is any person who is or was enrolled in Manhattan as a student (including full time and part time undergraduate and graduate students, day and evening).

In compliance with and subject to the provisions of this legislation and the College's Statement on the Confidentiality of Student Records, the College will make available to each student the College's official records, files and data falling within the scope of the Act to each student for his or her personal review and inspection. Specifically excluded from the definition are: personal notes of teachers, supervisors and administrators which are retained in their possession and are not accessible to others except substitutes; medical and psychiatric records except that these records may be reviewed by a physician or other professional of the student's choice; the Parent's Confidential Statement; letters of recommendation placed in the file before January 1, 1975; and campus security records.

Students wishing to inspect and review any of their official records and material contained therein should file a request in writing with the Registrar. Forms for such requests-in-writing will be made available. All proper requests will be complied with as soon as reasonably possible, but no later than forty-five days of the date of the request.

A hearing may be requested by a student to insure that his or her records are not inaccurate, misleading, or otherwise in violation of his or her privacy or other rights, to provide an opportunity for the correction or deletion of any such inaccurate, misleading, or otherwise inappropriate data contained therein or to challenge the content thereof. An appropriate hearing procedure has been established by the College and is included in the Statement of Confidentiality of Student Records.

The Law prohibits the release of material in a student's file without written consent of the student, except to officials and teachers of the same school, another school where the student intends to enroll, and certain state and federal officials.

A copy of the Law and a copy of the Statement is available in the Office of the Registrar and the Office of the Vice President for Student Life.

## Health Services

Health Services provides on campus evaluation and treatment for common health problems, including: episodic illnesses, injuries, blood pressure checks, vision screenings, suture removal, and a variety of other health-related services. Health Services providers facilitate referrals to off-campus health care when necessary. No cost services by our nurse practitioners and physician are available to all undergraduate students. Students that require outside services, such as laboratory, x-rays, Urgent care, Emergency Care, etc., will be responsible for payment to that provider of services.

Health Services is located in Horan Hall, Room 218. The office is open during the academic year Mondays through Fridays from 9:00 am to 4:30 pm. Students are advised to call or email for an appointment.

Phone: 718-862-7217

Email: [health.services@manhattan.edu](mailto:health.services@manhattan.edu)

When the office is closed a list of urgent care and off campus providers is available on the Health Service's website for students in need of healthcare.

**Medical Emergencies:** Public Safety (718-862-7333) should be contacted immediately for on campus medical emergencies. Public Safety responds to all emergency calls 24 hours a day, notifying Health Services or New York City Emergency Medical Services (911) as appropriate.

**Immunizations:** New York State Law mandates that all students born after January 1, 1957 submit proof of immunity against measles, mumps and rubella to the College as well as a completed Meningitis Response Form. All students are also required to complete a Tuberculosis Risk Screen. Manhattan College Health Forms are available on the website. Immunization records may generally be obtained from the student's private physician or previous educational institution. Any student who is having difficulty obtaining the necessary medical records should contact the Health Services staff for assistance (718-862-7217). Immunization compliance matters can generally be resolved quickly once a student requests assistance.

**Insurance:** Manhattan College requires all full-time undergraduate students, degree-seeking international students, resident students, and Division 1 athletic participants to have health insurance. Students should check that their health insurance provides coverage in the New York area while they are attending college. Manhattan College students are automatically enrolled in a Student Health Plan until the student provides proof of insurance to waive the sponsored plan. This waiver process is available on the Health Services website.

## International Student Services

The Office of International Student and Scholar Services provides programs and services for Manhattan College students and scholars who are in the United States on non-immigrant F and J visas. These programs and services are designed to aid their adjustment to living and studying in New York City. Services include issuing required federal visa documents; assisting with immigration regulations governing enrollment, employment and travel; and publishing a monthly electronic newsletter, which provides important and timely information on a variety of topics. The office conducts an orientation session for all new international students and scholars in August and in January, coordinates a variety of cross-cultural programs and acts as liaison between students and scholars and other college offices, student groups and U.S. and foreign government agencies.

International students and scholars on non-immigrant visas are required to visit the office of International Student and Scholar Services when they arrive on campus, and are encouraged to maintain close contact with the office throughout the year. The office is located in Room 3.02A within the Multicultural Center on the third floor of the Student Commons. For further information, contact the Director of International Student and Scholar Services at (718) 862-7213.



# Library

The Mary Alice & Tom O'Malley Library supports the work of faculty and students through its collections, facilities, and services. Reference librarians are available to help with students' academic work, and the librarians teach information literacy and advanced research classes to students in all subject areas.

The library is open 24 hours a day during the academic year. The collection includes 450,000 books and more than 48,000 current journals, including all the journals of the most prominent scholarly publishers: Elsevier, Oxford University Press, SAGE, Springer Nature, Taylor & Francis, and Wiley. Through the Library website, students on or off campus can access more than 220 databases that provide access to journals, books, and reference materials.

Students and faculty of Manhattan College can also use libraries throughout New York City and Westchester County through the on-site arrangements established by WALDO, our local library network. Books and articles from libraries worldwide are available through our interlibrary loan service.

O'Malley Library has four computer labs with more than 100 computer workstations as well as conference rooms and a wide range of areas for individual and group study. An Internet Cafe is located outside the main library entrance.

The Library maintains the Manhattan College Archives as well as the De La Salle Christian Brothers Archives of the New York and Long Island-New England Districts, the District of Eastern North America, the Midwest District, the Christian Brothers Conference, and the Lasallian Research Collection.

For more information about library hours and services, please see <https://lib.manhattan.edu/home> (<https://lib.manhattan.edu/home/>)

# Public Safety

The Public Safety Department is responsible for enforcing College security regulations, overseeing the College's risk management policies, and the supervision of campus parking facilities. There are 50 officers and supervisors who conduct foot and vehicle patrols of the campus 24 hours a day. Being a component of the Student Life Division, the Public Safety Department actively supports the mission of the College and accepts its responsibility to employ security measures that promote the safety and well being of our students.

## Daily Crime and Fire Log Availability

The Manhattan College Daily Crime and Fire Log is available for public review in the public safety office, located in Jasper Hall, Monday – Friday, 9 a.m. – 4:30 p.m.

**The Advisory Committee on Campus Safety will provide upon request all campus crime statistics as reported to the U.S. Department of Education. These are also available by searching for Manhattan College at <http://ope.ed.gov/campussafety/#/institution/list>. The Director of Public Safety is authorized to provide these statistics and can be contacted at 718-862-7240.**

## Residence Life

Manhattan's residence life program has two purposes: to support student learning and to provide opportunities for students to create community in their own residence hall and throughout the College community. They create supportive friendships for their time on campus, many of which will last a lifetime.

Manhattan College offers five distinctive residence halls, all conveniently close to the center of campus. Our coed halls are much more than comfortable dorms to sleep and study in, they're also home to a tight-knit Lasallian community where you'll develop close friendships and enjoy a wide network of support.

Our dedicated professional staff, along with students serving as Resident Assistants (RAs) help to create a safe and enjoyable living atmosphere. They strive to assist our students' growth and to achieve our expectations of respect and civility.

### Types of Housing Available

#### Suite-Style Living

Horan and Lee Halls both offer suite-style living where you'll share a bathroom with your roommates, but not the entire floor.

#### Traditional Community Living

Jasper and Chrysostom are traditional-style dorms where two students share a bedroom and everyone on the floor shares a bathroom. Chrysostom houses freshman only.

#### Apartment-Style Living

Overlook is an apartment building located two blocks off campus. Each unit has a full kitchen and private bathroom(s).

#### The Arches

The Arches program is a learning and living community for freshmen. Students live together in a residence hall and take one class each semester of their freshman year that is specifically designed for the Arches program, which incorporates cultural excursions and service projects. In addition, special events and activities are offered to Arches students, so they can bond, develop a sense of community, and create lasting friendships with peers, faculty and coordinators.

### Manhattan College Residency Requirement

The residential community at Manhattan College provides students with a strong foundation for success, developing connections, and achieving full immersion into the College experience. As such, all full-time undergraduate students who enter Manhattan College in the Fall 2019 semester and thereafter are required to live on campus for the first two years of their College experience, with the opportunity to live off-campus after achieving junior status (60 credits) and two full years of college enrollment.

That is, beginning with students who enter Manhattan College in the Fall 2019 semester, all full-time freshmen and sophomores are required to live on campus unless the student:

- Is planning to reside at the home of their parent/guardian within commuting distance of the campus and reside at their legal residence
- Is 23 years of age or older at the start of the academic year
- Is married
- Has a dependent child
- Has been a veteran of at least two years of active military duty
- Transfers to the college from another 2-year or 4-year college or university
- Has completed a four-year undergraduate degree or is participating in a graduate program

Exemptions to this policy must be applied for on or before February 28 by continuing students. Incoming students may apply for an exemption on or before June 1st or at the time of their deposit to the College. Students who meet the above requirements in the middle of a housing contract period are subject to the terms and conditions of the housing contract and will incur any penalties found therein.

Students who are on track for 60 credits and two full years of College enrollment remain eligible to live on campus and may opt to do so through the regular housing selection process. Students who have completed the two-year residency requirement and have 60 completed credits must provide Manhattan College their off-campus housing location for the following year by August 1st.

## Office of Student Engagement

The Office of Student Engagement strongly welcomes and encourages the active participation of all students in programs and events, in accordance with the college's Lasallian heritage. To support individual interests and creativity, the Student Engagement staff provides varied opportunities for involvement through membership in clubs and organizations, participation in on-campus events, as well as excursions off-campus, in New York City. The staff also assists in the development of leadership skills for individual students. These skills include, but are not limited to, effective leadership, teamwork, and commitment. Mentoring for student leaders occurs through the Student Engagement office as well as routine policy and procedure review to ensure that students are enabled to effectively experience the full extent of their contribution to the collective Student Activities Fees.

Specifically, the office is responsible for scheduling, planning and overseeing student events. The Student Engagement office is where students may purchase tickets for both on and off-campus events. All on-campus events are offered to students for free, while off-campus events are offered at a discounted rate. Student Engagement staff guide student leaders who help create, plan and execute the vast majority of events for their fellow students.

Furthermore, to support the Lasallian tenets of the community, students are encouraged to engage in diverse activities and to enhance their personal growth, in preparation for good citizenship in their communities following graduation. The Student Engagement office is located on the 4<sup>th</sup> floor in the Student Commons and may be reached at 718-862-7247 or [studentengagement@manhattan.edu](mailto:studentengagement@manhattan.edu) ([studentactivities@manhattan.edu](mailto:studentactivities@manhattan.edu))

## Recreation and Intramurals

The Student Engagement office also provides recreational opportunities for students including social, athletic, E-Sports, and intramural. These events occur largely in the evenings from 7pm – 11pm in Draddy Gymnasium and Gaelic Park. Students can participate in numerous intramural leagues, including flag football, soccer, and basketball, as well as several one-day tournaments and E-Sports video gaming leagues. All leagues are free for all undergraduate students both male and female, and registration for each sport can be done on [IMLeagues.com](http://IMLeagues.com). The Recreation Coordinator may be reached at 718-862-7889, or at [recreation@manhattan.edu](mailto:recreation@manhattan.edu).

## Performing Arts

The Student Engagement office also includes the Performing Arts area at Manhattan College. This area is focused on engaging our students through artistic expression and education to explore and integrate cultural diversity. The Director of Music and Coordinator of Performing Arts is responsible for ensuring collaboration and cooperation among and assisting with the scheduling of, all the Performing Arts ensembles. The coordinator also works collaboratively with the College's Chaplain to direct the Music Ministry at Mass on Sundays. The ensembles draw participation from all corners of the college community and play an integral role in allowing our students to develop and apply the lessons of a liberal arts education through music, dance, and theater. The Performing Arts Office is located in Thomas 517 and may be reached at 718-862-7254.

## Performance Ensembles

- Jasper Dancers
- Jasper Pep Band
- Jazz Band
- Music Ministry
- Orchestra
- Pipes and Drums
- Players Theater Group
- Scatterbomb Improvisational Troupe
- Singers

## Student Government

By participating in the Manhattan College Student Government, students have the opportunity to develop and improve their leadership skills. Student Government is a governing body that represents the voice of the student population. Student Government consists of the Executive Board, the Assembly, Student Court, and Senate. If you would like to become involved, please email [studentgov@manhattan.edu](mailto:studentgov@manhattan.edu).

## Student Groups

With more than 80 student clubs and organizations on campus, Student Engagement is committed to ensuring that students have a spectrum of opportunities to choose from in order to participate in initiatives of interest to them. Clubs and organizations range from cultural groups, special interest clubs, social leisure groups, spirit squads, performing arts ensembles, co-curricular groups, extra-curricular clubs, and social Greek life organizations. In addition to established student clubs and organizations, additional opportunities are available by way of student committees that provide opportunities for leadership development.

## Cultural Groups

**Fuerza Latina:** Engages the entire student body in learning about Latin American and Caribbean culture. [fuerza-latina@manhattan.edu](mailto:fuerza-latina@manhattan.edu)

**Gaelic Society:** Provides exposure to the Irish culture through sponsored events. [gaelicsociety@manhattan.edu](mailto:gaelicsociety@manhattan.edu)

**Il Circolo Dante Alighieri (Italian Club):** Enjoy Italian culture with authentic food, films and more with members of the Italian Club. [italianclub@manhattan.edu](mailto:italianclub@manhattan.edu)

**International Student Association:** Acclimates international students and enriches campus life. [isa@manhattan.edu](mailto:isa@manhattan.edu)

**Muslim Student Association:** Provides exposure to the Muslim community through sponsored events. [muslimclub@manhattan.edu](mailto:muslimclub@manhattan.edu)

South Asian Student Association (SASA): Increases the awareness of South Asian culture through social events, presentations and cultural exchanges. [sasa@manhattan.edu](mailto:sasa@manhattan.edu)

## Special Interest Groups

Air Force ROTC: Works with our Reserve Officer Training Corps office to develop quality leaders for the Air Force, and citizens of character. [afrotc@manhattan.edu](mailto:afrotc@manhattan.edu)

Commuter Student Association: A group dedicated to discussing issues, concerns, and ideas surrounding our commuter population. [csa@manhattan.edu](mailto:csa@manhattan.edu) or [commuter@manhattan.edu](mailto:commuter@manhattan.edu)

Green Club: An organization dedicated to sustainability in the college, the community, and the world. [greenclub@manhattan.edu](mailto:greenclub@manhattan.edu)

Jewish Student Union: A student-run club dedicated to celebrating the Jewish culture and promoting Jewish heritage and traditions. [jewishstudentunion@manhattan.edu](mailto:jewishstudentunion@manhattan.edu)

Just Peace: Spreads awareness of and takes action on social issues worldwide. [justpeace@manhattan.edu](mailto:justpeace@manhattan.edu)

Lasallian Collegians: Faith, service, and community! This group provides students with an opportunity to participate in activities such as a blood drive, toy drive, retreats, and other volunteering opportunities. [lasalliancollegians@manhattan.edu](mailto:lasalliancollegians@manhattan.edu)

LGBTQ+ Student Group: This group expands discussions on lesbian, gay, bisexual, transgender, and questioning students, their partners and supporters. This organization aims to connect, support, and spread awareness of the LGBTQ+ community on campus. [lgbt@manhattan.edu](mailto:lgbt@manhattan.edu)

Government and Politics Club: This student club is ideal for students passionate about politics. The club hosts events and speakers on campus to engage discussions on political matters. [govtandpolitics@manhattan.edu](mailto:govtandpolitics@manhattan.edu)

Men's Crew Club: The only one of its kind, the men's crew club is a competitive club sport that focuses on the adaptive skill of rowing. [crew@manhattan.edu](mailto:crew@manhattan.edu)

Motivational Outreach: A group with a mission to make a beneficially tangible impact on the communities they serve through the art of motivational speaking and service. [motivationaloutreach@manhattan.edu](mailto:motivationaloutreach@manhattan.edu)

New York Water Environmental Association: An opportunity for students to become aware of the issues in our environment. [nywea@manhattan.edu](mailto:nywea@manhattan.edu)

Resident Student Association (RSA): A group dedicated to discussing goals, issues, and aspirations regarding Residence Life on campus. [rsa@manhattan.edu](mailto:rsa@manhattan.edu)

Sanctus Artem: Latin for Pure Arts, focuses on establishing a progressive environment for students involved and interested in the visual, performing, and literary arts. [sanctus.artem@manhattan.edu](mailto:sanctus.artem@manhattan.edu)

Student Government: An opportunity to develop leadership skills through the executive committee, assembly, student court, class officers, resident, and commuter student association. [studentgov@manhattan.edu](mailto:studentgov@manhattan.edu)

SVO: The Student Veteran Organization is a community that sponsors programming and provides support for student veterans. [svo@manhattan.edu](mailto:svo@manhattan.edu)

## Social Leisure Clubs

Games Club: This student club sponsors campus events for those interested in the gaming world, ranging from the online arena to tabletop board games. [gamesclub@manhattan.edu](mailto:gamesclub@manhattan.edu)

SoNYC: A Slice of New York City is a club that sponsors trips to famous landmarks in NYC. [sonyc@manhattan.edu](mailto:sonyc@manhattan.edu)

### Spirit Squad

Cheerleading: This co-ed spirit group motivates both fans and players at basketball games. [cheerleading@manhattan.edu](mailto:cheerleading@manhattan.edu)

Jasper Dancers: Dance team that utilizes a variety of dance styles, including hip-hop, modern and jazz. [jasperdancers@manhattan.edu](mailto:jasperdancers@manhattan.edu)

Pep Band: Wind ensemble that performs during basketball games and other events. [jasperband@manhattan.edu](mailto:jasperband@manhattan.edu)

## Performing Arts

Jazz Band: This ensemble is perfect for all brass musicians, pianists, and drummers. As a member of the Jazz Band, you'll perform at various campus events throughout the year, as well as two annual concerts. [jazzband@manhattan.edu](mailto:jazzband@manhattan.edu)

Music Ministry: An ensemble of singers, cantors, and instrumentalists that leads the liturgical music at college masses. [musicministry@manhattan.edu](mailto:musicministry@manhattan.edu)

Orchestra: A 20–25 piece ensemble that performs orchestral literature from the baroque to contemporary repertoire. [orchestra@manhattan.edu](mailto:orchestra@manhattan.edu)

Pipes and Drums: A signature opportunity to learn and play the bagpipes or percussion and march in parades. [pipesanddrums@manhattan.edu](mailto:pipesanddrums@manhattan.edu)

The Players: Provides an avenue to perform and gain a working knowledge of theater. [players@manhattan.edu](mailto:players@manhattan.edu)

Scatterbomb: Provides an opportunity to learn and perform long-form improvisational comedy. [scatterbomb@manhattan.edu](mailto:scatterbomb@manhattan.edu)

Singers: A mixed chorus of men and women that performs a variety of choral styles from the Renaissance to modern day. [singers@manhattan.edu](mailto:singers@manhattan.edu)

## Communication

American Advertising Federation: A group in which students get together to discuss the latest trends in advertising technology and creativity. Learn more at [aaf.org](http://www.aaf.org/) (<http://www.aaf.org/>) and [aaf@manhattan.edu](mailto:aaf@manhattan.edu)

Logos: A brand new academic journal dedicated to the liberal arts. [logos@manhattan.edu](mailto:logos@manhattan.edu)



**Manhattan Magazine:** If you enjoy writing, everything from poems to short stories and/or art, everything from photography to painting, have your work published in Manhattan Magazine. [manhattanmagazine@manhattan.edu](mailto:manhattanmagazine@manhattan.edu)

**The Quadrangle:** Students can be reporters, writers, photographers, editors and layout artists for the college newspaper. [thequad@manhattan.edu](mailto:thequad@manhattan.edu)

## **Social Fraternities and Sororities**

These groups offer a unique opportunity for sisterhood/brotherhood, socializing and networking.

**Sigma Delta Tau,** Sorority [sigmadeltatau@manhattan.edu](mailto:sigmadeltau@manhattan.edu)

**Alpha Phi Delta,** Fraternity [alphaphidelta@manhattan.edu](mailto:alphaphidelta@manhattan.edu)

**Delta Kappa Epsilon,** Fraternity [deltakappaepsilon@manhattan.edu](mailto:deltakappaepsilon@manhattan.edu)

## **Co-curricular Clubs**

These groups, academic in nature, are specifically designed to complement class work and aid in career pursuits.

**Accounting Society:** Join this society as they promote worldwide excellence in accounting education. [accountingsociety@manhattan.edu](mailto:accountingsociety@manhattan.edu)

**American Advertising Federation:** A group in which students get together to discuss the latest trends in advertising technology and creativity. Learn more at [aaf.org](http://www.aaf.org/) (<http://www.aaf.org/>). [aaf@manhattan.edu](mailto:aaf@manhattan.edu)

**American Chemical Society:** A group in which students are exposed to different opportunities within the field of chemistry and biochemistry. [acs@manhattan.edu](mailto:acs@manhattan.edu)

**American Institute of Chemical Engineers:** Also known as AIChE, this group looks into the latest technology in the chemical engineering field. Learn more at [aiche.org](http://www.aiche.org/) (<http://www.aiche.org/>). [aiche@manhattan.edu](mailto:aiche@manhattan.edu)

**American Institute of Aeronautics and Astronautics:** This organization is dedicated to the global aerospace profession. [aiaa@manhattan.edu](mailto:aiaa@manhattan.edu)

**America Society of Civil Engineers:** This group promotes the art, science, and practice of multidisciplinary engineering around the globe. Learn more at [www.manhattanasce.org](http://www.manhattanasce.org) (<http://www.manhattanasce.org/>). [asce@manhattan.edu](mailto:asce@manhattan.edu)

**American Society of Mechanical Engineers:** This group promotes the art, science, and practice of multidisciplinary engineering around the globe. Learn more at [asme.org](http://www.asme.org/) (<http://www.asme.org/>). [asme@manhattan.edu](mailto:asme@manhattan.edu)

**Association for Computing Machinery:** This student chapter works to connect students with the computing community by hosting seminars and lectures and providing the opportunity to meet others in their field. [acm@manhattan.edu](mailto:acm@manhattan.edu)

**Beta Alpha Psi:** This group is an international honors business organization for accounting, finance, and information systems students. [betaalphapsi@manhattan.edu](mailto:betaalphapsi@manhattan.edu)

**Biology Club:** A group that looks at the application of concepts and methods in the field of biology. [biology@manhattan.edu](mailto:biology@manhattan.edu) ([biologyclub@manhattan.edu](mailto:biologyclub@manhattan.edu))

**Construction Management Association of America:** CMAA introduces its members to the field of construction management by interacting with established CM professionals. [cmaa@manhattan.edu](mailto:cmaa@manhattan.edu)

**Economics and Finance Society:** Bringing real-world expertise to campus through lectures conducted by both alumni and professionals in the workplace. [economicsandfinance@manhattan.edu](mailto:economicsandfinance@manhattan.edu)

**Entrepreneurship Club:** This new club allows students to explore opportunities regarding new businesses. [entrepreneurship@manhattan.edu](mailto:entrepreneurship@manhattan.edu)

**Institute of Electrical and Electronics Engineers:** Also known as IEEE, this is the world's largest professional group dedicated to technological innovation and excellence for the benefit of humanity. Learn more at [ieee.org](http://www.ieee.org) (<http://www.ieee.org/>). [ieee@manhattan.edu](mailto:ieee@manhattan.edu)

**Management Club:** This club provides students the opportunity to increase their knowledge of the management discipline and facilitates connections with alumni and professionals in the management field. [managementclub@manhattan.edu](mailto:managementclub@manhattan.edu)

**Manhattan College Investment Club:** A club dedicated to today's issues in the investment world. [mcic@manhattan.edu](mailto:mcic@manhattan.edu)

**Marketing Club:** This club provides students the opportunity to further pursue their interest in marketing. [marketingclub@manhattan.edu](mailto:marketingclub@manhattan.edu)

**Mini Baja:** Build a mini baja vehicle with other students from scratch over the course of the year, until it's ready to run. [minibaja@manhattan.edu](mailto:minibaja@manhattan.edu)

**National Society of Black Engineers:** A club geared towards increasing the number of culturally responsible black engineers who excel academically, succeed professionally, and positively impact its community. [nsbe@manhattan.edu](mailto:nsbe@manhattan.edu)

**Psychology Club:** A club in which future career goals are discussed with students that have a passion for psychology. [psychclub@manhattan.edu](mailto:psychclub@manhattan.edu) ([psychologyclub@manhattan.edu](mailto:psychologyclub@manhattan.edu))

**PRSSA (Public Relations Student Society America):** A pre-professional student organization that allows students to build lasting relationships and gain experience in the Public Relations field. [mcprssa@manhattan.edu](mailto:mcprssa@manhattan.edu)

**Society of Hispanic Professional Engineers:** Also known as SHPE, this group promotes Hispanics in engineering. [shpenc@manhattan.edu](mailto:shpenc@manhattan.edu) ([shpe@manhattan.edu](mailto:shpe@manhattan.edu))

**Society of Women Engineers:** Provides women an environment in which to achieve success in engineering, academically and professionally. Learn more at [societyofwomenengineers.swe.org](http://societyofwomenengineers.swe.org) (<http://societyofwomenengineers.swe.org/>). [swe@manhattan.edu](mailto:swe@manhattan.edu)

**Women in Business:** A student club that focuses on building support for women with future careers in Business. [womeninbusiness@manhattan.edu](mailto:womeninbusiness@manhattan.edu)

*\*\*Please note: As the clubs and organizations are student-run, the lifespan of these groups depends on the interests of current students. Please see the academic deans for more information on groups academic in nature, including honor societies. All clubs are open to all students, regardless of major. Hazing is strictly prohibited. Please refer to the Manhattan College Student Code of Conduct for more information.*

# Veterans

## Yellow Ribbon Program

Manhattan College is pleased to announce our continuing commitment to America's veterans through our participation in the Yellow Ribbon Program of the Post 9/11 GI Bill ®. The Yellow Ribbon Program is a partnership between Manhattan College and the Department of Veterans Affairs (VA) to assist eligible students with educational expenses.

The Yellow Ribbon GI Education Enhancement Program (Yellow Ribbon Program) allows degree-granting institutions of higher learning in the United States to voluntarily enter into an agreement with the VA to fund tuition expenses that exceed the highest public in-state undergraduate tuition rate. This tuition-benefit program includes both undergraduate and graduate study and either full- or part-time enrollment. Because of Manhattan College's reasonable tuition rates, this program allows eligible veterans to participate at little or no cost. This significant commitment upholds a long history of Manhattan College support for our veterans and their academic and career endeavors.

## Yellow Ribbon Benefit at Manhattan College

- Up to \$25,162.14 per year per student not to exceed the cost of tuition. The Department of Veterans Affairs will match at the same amount and up to 50% of the difference between the student's tuition benefit and the total cost of tuition and fees.
- Participation in Yellow Ribbon may preclude the student from eligibility for any other institutional awards.
- The Yellow Ribbon award amount is based on per-credit-hour tuition and allowable fees.
- Continuing eligibility is contingent upon good academic standing and remaining entitlement with the VA.

## Yellow Ribbon Program Eligibility Requirements

Only individuals entitled to the maximum benefit rate (based on service requirements) may receive Yellow Ribbon Program benefits from Manhattan College and the VA. We strongly encourage you to review the eligibility criteria directly from the VA website.

The general eligibility requirements for the Yellow Ribbon Program include:

- The student served an aggregate period of active duty after Sept. 10, 2001 of at least 36 months.
- The student was honorably discharged from active duty for a service-connected disability and they served 30 continuous days after September 10, 2001.
- Student is a dependent eligible for Transfer of Entitlement under the Post-9/11 GI Bill based on a veteran's service under the eligibility criteria listed above.
- In addition to all other institutional policies and regulations, students who receive education benefits from the VA must comply with the policies of the VA and the State Approving Agency for the training and education of students receiving VA education benefits. These policies include the following requirements:

- You cannot be certified for receipt of your VA education benefits until you have selected the program of study you intend to pursue, met all admissions requirements and all credentials required by the office of admissions are received and evaluated. You must be admitted as a fully matriculated student.
- It is your responsibility to immediately inform the College's VA certifying official of any changes in your enrollment (e.g., dropped or added classes, or withdrawal from school). If there is any unreported change in your enrollment, you may not be entitled to the full amount of your educational benefits.
- It is your responsibility to inform the College's VA certifying official each semester or term of your intent to utilize your education benefits. You must turn in a Request for Certification Form and a copy of your course schedule.
- Only the elective hours required for degree completion, as stated in the catalog for your curriculum, may be certified for benefits. You may not receive benefits for excessive electives or courses already taken and passed. You must achieve satisfactory academic progress toward the completion of your degree as stated in the catalog. Unsatisfactory progress, conduct or attendance may result in termination of your educational benefits.
- Veterans who qualify for both federal financial aid and GI Bill assistance may receive support from either or both sources. However, if both sources are utilized, maximum assistance cannot exceed the total cost of attendance.
- Based upon eligibility determination by the VA, a student may still have a balance due to the College after receiving payment from the VA.

Veteran benefits information is available in the Office of Financial Aid Administration. Each semester recipients of Veterans Administration funds are required to file an Enrollment Certification in this office, and to report promptly when adding or dropping any courses, as well as being responsible for any overpayments made by the V.A.

# Honorary Degrees Conferred

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## ***COMMENCEMENT EXERCISES 2019-2020 Year***

15-May-2020

TBD

## ***SPRING COMMENCEMENT –***

13-May-2020

TBD

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