

# Mechanical Engineering

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## Mission

The Master of Science in Mechanical Engineering degree program is designed to provide a contemporary, educational experience beyond that of undergraduate education characterized by high academic standards, reflection on values and principles, and preparation for a lifelong career. It is intended to prepare individuals for advanced technical positions or for admission to doctoral programs.

## Objectives

The objectives of the program are:

- To provide graduate students with in-depth knowledge and practices in mechanical engineering related to a chosen area of specialization.
- To develop an appreciation of how mechanical engineering is practiced in the modern engineering environment with an emphasis on communication skills and professional behavior and procedures.
- To inspire the students to become life-long learners by providing them with the tools to explore and research a topic independently and systematically.

## Admission Requirements

Applicants must possess one of the following:

1. A baccalaureate degree in mechanical engineering from a program accredited by the Engineering Accreditation Commission of ABET, Inc., or from a recognized foreign institution.
2. A baccalaureate degree in another area of engineering, physics, or mathematics.

Applicants who have a baccalaureate degree in another area of engineering, physics, or mathematics may be admitted into the program provided they complete undergraduate prerequisites specified by the Department Graduate Program Director. These courses must be completed with a minimum grade point average of 3.00 with no grade lower than C. These courses will not satisfy any requirements for the Master of Science in Mechanical Engineering degree.

Generally, students must complete prerequisite courses before they are permitted to register for graduate courses. Exceptions require the recommendation of the Graduate Program Director and the approval of the Dean of Engineering.

## Degree Requirements

A student must complete a minimum thirty credit hours of graduate coursework, including ENGG 614 Engineering Mathematics. Except for students enrolled in the Seamless Master's program, a maximum of four 500-level courses may be credited to the MS degree. Students enrolled in the Seamless Master's program may receive credit for a maximum of five 500-level courses. Either MCEG 742 Advanced Study: Mechanical Engineering or MCEG 748 Thesis in Mechanical Engineering may be undertaken by a student who has successfully completed nine credits as a matriculated graduate student. A proposal approved by the Graduate Program Director is required before a student may register for either of these courses. Electives may also be selected from Graduate Core courses with the advice and approval of the Graduate Program Director.

## Concentration Programs

Concentration programs, which consist of prescribed courses in a specific concentration area, are available through the Mechanical engineering graduate program as follows:

**Artificial Intelligence in Mechanical Engineering, Biomechanics, Engineering Management, Energy Systems, Nuclear Power, Green Building Engineering, Aerospace/Propulsion, Systems/Control, and Solid Mechanics/Design.** Unless otherwise noted, courses in these programs may be applied to a Master's of Science Degree in Mechanical Engineering. While approval of the Graduate Program Director is required to enroll in a graduate course, admission to the Graduate Program is not required to participate in a Concentration Program. It is expected, however, that individuals desiring to take graduate-level courses in a Concentration Program will have a baccalaureate degree in either an engineering field, a science or applied science field, or mathematics, and will meet the pre-requisite requirements of the courses they wish to take in a Concentration Program. Specific information regarding Graduate Mechanical Engineering Concentrations is available on the Mechanical Engineering website. (<https://manhattan.edu/academics/graduate-programs/mechanical-engineering.php>)