

ENGINEERING

<http://www.miami.edu/engineering>

Degree Programs

The College of Engineering offers courses of graduate study leading to the degrees of:

- Master of Science (Environmental Health and Safety)
- Master of Science (Construction Management)
- Master of Science (Management of Technology)
- Master of Science in Architectural Engineering
- Master of Science in Biomedical Engineering
- Master of Science in Biomedical Engineering (Medical Physics)
- Master of Science in Civil Engineering
- Master of Science in Electrical and Computer Engineering
- Master of Science in Industrial Engineering
- Master of Science in Materials Engineering
- Master of Science in Mechanical Engineering
- Master of Science in Mechanical Engineering (Additive Manufacturing)
- Master of Science in Neural Engineering
- Master of Science in Software Engineering
- Master of Science in Ocean Engineering

Ph.D. degrees are offered in the areas of:

- Biomedical Engineering
- Biomedical Engineering (Medical Physics)
- Chemical, Environmental, and Materials Engineering
- Civil Engineering
- Civil Engineering (Architectural or Environmental Emphasis)
- Electrical and Computer Engineering
- Industrial Engineering
- Mechanical Engineering

Admission Requirements

Students with an appropriate B.S. degree may seek direct entry to either the M.S. track or Ph.D. track. Admission guidelines for the various tracks are given below. Please refer to program specific sections of the bulletin for more information on admission and degree requirements or visit coe.miami.edu/apply

B.S. to M.S.

In many fields of engineering, the master's – not the bachelor's – degree is the first professional degree, so some engineers should seek to obtain an M. S. degree. The University of Miami (UM) College of Engineering (CoE) offers the M.S. degree through a number of possible venues or entry points, as summarized below. All M.S. degree programs within the College of Engineering require a minimum of 30 credit hours to complete; the time to completion of full-time MS study usually varies from one to two years. Completion within a 9-month academic year is possible by enrolling in 15 credit hours per semester.

General Admission Requirements

1. A B.S. degree from an accredited program.
2. Typically a cumulative grade point average of 3.0 on a 4.0 scale
3. Most international students must provide a TOEFL iBT score of 80 or higher, or an IELTS score of 6.5 or higher to demonstrate English proficiency.

B.S. to Ph.D.

Direct admission to the Ph.D. track by students holding B.S. degrees is limited to students with exceptional credentials. These credentials typically include a minimum GPA of 3.5 on a 4.0 scale. Some Departments also require minimum GRE scores of 308 (verbal plus quantitative) for direct

admissions to the Ph.D program. After completion of the Departmental M.S. requirements, students enrolled in the direct B.S. to Ph.D. track may apply for an M.S. degree.

M.S. to Ph.D.

Criteria for admission into the Ph.D. program for students with an appropriate M.S. degree generally include a minimum GPA of 3.5 on a 4.0 scale within their M.S. degree program. Some Departments also require a minimum GRE of 302 (verbal plus quantitative).

Most international students must provide a TOEFL iBT score of 80 or higher, or an IELTS score of 6.5 or higher to demonstrate English proficiency.

The College offers graduate programs leading to degrees in both traditional and interdisciplinary areas of study. The primary focus of the College lies in those areas and problems that cross traditional lines. Given the interdisciplinary nature of programs, flexibility is provided in course selection which allows each student to pursue a program tailored to the goals of the individual. Given the strengths of the University, graduate programs are offered in conjunction with other schools or academic units. These programs include:

- Biomedical Engineering in conjunction with the School of Medicine
- Engineering Management
Dual M.S. in Industrial Engineering and M.B.A. in conjunction with the Miami Herbert Business School
- M.S. program in Management of Technology in conjunction with the Miami Herbert Business School
- M.S. in Environmental Health and Safety in conjunction with the School of Medicine.

Further details on the various College of Engineering areas of specialization are given under the Departmental and Program headings that follow this section.

Applicants for graduate admission to the College must submit three letters of recommendation from individuals familiar with the applicant's abilities and background.

Applicants who hold a bachelor's degree in a field other than their proposed major may be admitted to the graduate program and to candidacy upon completion of appropriate undergraduate deficiency courses, in addition to the regular requirements for the graduate degree.

A student's overall program is planned by the student and the student's advisory committee. Requirements for the M.S. thesis and M.S. non-thesis options (not available in all areas of specialization) are shown below. All Ph.D. programs require the completion of a dissertation.

Accepted M.S. applicants can apply and be considered on a competitive basis for partial tuition waivers. Need-based aid also can be awarded, as determined through the financial aid process. A minimum graduate GPA of 3.0 is required in order to maintain satisfactory progress.

Financial assistance to admitted Ph.D. students is available in the form of fellowships, and research assistantships. A minimum graduate GPA of 3.3 is required in order to maintain satisfactory progress for students financially supported on assistantships.

Financial support is provided predominantly to students pursuing Ph.D. degrees.

For further information, contact the Office of Admissions, College of Engineering at engineeringadmissions@miami.edu or 305-284-2404, option 2.

Degree Requirements

Requirements for the Master of Science Degree (Thesis Option)

- An approved integrated program with a minimum of 30 credit hours with an average grade of B or better and no grade below C.
- At least 6 course credit hours must be at the 700-level.
- 6 credit hours of the required 30 must be earned in thesis work.
- An oral examination in defense of the thesis.

Requirements for the Master of Science Degree (Non-Thesis Option)

- An approved integrated program with a minimum of 30 credit hours with an average grade of B or better and no grade below C.
- At least 12 of the course credit hours must be at the 700 level.
- In most departments a 3 credit hour M.S. project is required.

Requirements for the Doctor of Philosophy Degree

- The programs leading to the degree of Doctor of Philosophy comply with the regulations of the Graduate School concerning admission, residence requirements, qualifying and final examinations and dissertation.
- Applicants for admission to the Ph.D. program will be expected to have superior records in their M.S. and B.S. degree programs, well above average scores on the Graduate Record Examination (for programs that require GRE), and strong letters of recommendation.
- The minimum credit requirement for the PhD is 72 credits beyond the baccalaureate degree. These credits include both non-dissertation and dissertation credits. Non-dissertation credits include course, seminar, and teaching credits. The distribution of these credits between dissertation and non-dissertation credits is specified by each doctoral degree program. Curriculum and other PhD degree requirements are the same whether

students enter the PhD program with a prior B.S. or M.S. degree. Students entering the PhD program with a prior M.S. degree can petition the department to count up to 12 credits of prior graduate courses towards course credit requirements. Petitions are to be approved by the Supervisory Committee. Additional approvals of petitions may be required for specific PhD programs.

- All candidates for the doctorate are expected to complete an appropriate integrated program of studies in preparation for the comprehensive Qualifying Examination.
- Students are expected to take their qualifying exams during the first year of enrollment. Admission to candidacy across College of Engineering includes passing the qualifying exam and successful defense of a proposal for research.
- Minimum of one year beyond admission to candidacy is usually necessary for the completion of an acceptable dissertation (12 credit hours or more), whereupon the student is then expected to defend their dissertation during the Final Oral Examination.
- Departments may have requirements in addition to the above general requirements for their graduate programs.

For further information, contact Office of Admission, College of Engineering at engineeringadmissions@miami.edu or 305-284-2404, option 2.

Postgraduate Certificate Program

- A Postgraduate Certificate Program is available requiring the completion of a minimum of 15 credit hours of individually planned advanced course work in an area of engineering specialization, or interdisciplinary study.
- Course sequences culminate at an advanced level, but may begin at a basic level if a new area of specialization is to be undertaken.
- The Program must be completed with a grade average of at least C, within a period of five calendar years from the date of enrollment.
- No transfer credit hours will be accepted. International students requiring a student visa must be in a degree program, and cannot obtain a student visa for the Certificate Program; but international students with certain other types of visas may enroll in the Program.
- Basic admission requirement for the Program is a bachelor's degree in a recognized field of engineering or registration as a Professional Engineer by examination.
- Students demonstrating marked ability in the Program may be encouraged to apply for admission to study for the Master's Degree, and may apply up to 6 credit hours toward the M.S. degree.

Ph.D. Course Exchange with Florida International University

University of Miami Ph.D. students are eligible to enroll in courses at Florida International University for a maximum of 6 credit hours. Enrollment in FIU courses requires approval through the student's program of study committee. See FIU/UM Ph.D. exchange section of the Graduate School section of the bulletin for more details.