GRADUATE STUDY AT THE COLLEGE OF ENGINEERING

Today, the College of Engineering at the University of Michigan is consistently ranked among the top engineering schools in the world. All of its undergraduate degree programs are ranked by *U.S. News & World Report* and nearly all of its graduate degree programs are rated in the top ten nationwide. The graduate Civil Engineering Programs is currently ranked 8th and the graduate Environmental Engineering Program is ranked 5th in the nation.

**Academic Programs**
The College of Engineering offers undergraduate and graduate programs through the doctoral level. The undergraduate program consists typically of a four-year schedule leading to a bachelor's degree. There are 14 courses of study that lead to the Bachelor of Science in Engineering degree (B.S.E.) and one that leads to the Bachelor of Science degree (B.S.). By careful planning, an additional bachelor's degree (B.S. or A.B.) can be earned within the College of Engineering or in combination with another college within the University of Michigan in about one year beyond the time required for a single degree. Completion of both an engineering baccalaureate and a master's degree in approximately five years is also possible.

**Academic Progress**
The time it takes to complete a particular program of study depends on factors such as the number of transfer credits, program options such as thesis or project, and the type of research being undertaken. However, there are some general time frames to which your own academic progress can be compared.

**Average Time for Degree Levels**
The minimum time to complete the MSE requirements is one calendar year if no credits are being transferred from another program. A more common time to complete the Master's degree is three to four academic semesters. A minimum of 30 credit hours of approved graduate work must be completed for the MSE degree. Nine to twelve hours of credit per term is the usual full-time graduate course load. Graduate students with research or teaching appointments generally elect no more than six to nine credit hours per term.

Since the requirements to complete a PhD involve conducting independent research, it is more difficult to estimate a total time to complete this degree. However, a reasonable estimate is four years for a student entering the program with a Master's degree and five years entering with a BS degree. The milestones for completing the PhD degree include the following:

- **Completing PhD coursework** - general requirements are 18 hours of coursework beyond the Master's degree, subject to approval by the Dissertation Committee. Generally this takes approximately three years for a student entering with a BS degree. Four credits of cognate courses (courses outside the CEE Department) and an advanced mathematics elective are required toward this total. Courses taken as a part of MS studies may be used to fulfill this requirement.
**Preliminary Examination** - The Pre-Candidate student must pass the Preliminary Examination to be considered for Candidacy. Prior to being considered for the Preliminary Examination, the Pre-Candidate student will have completed at least 18 credit hours beyond the Bachelor’s degree (or 9 credits beyond an external Master’s degree), have a cumulative GPA of 3.30 or better in graduate coursework at the University of Michigan (excluding independent study courses), and have taken at least 3 credits of research or have served at least one term as a Graduate Student Research Assistant (GSRA). Students must also have a GPA of 3.5 or better in CEE courses. Eligibility to take the Preliminary Examination will then be determined by the Graduate Committee after critical review and evaluation of the student's academic performance submitted by the student's academic advisor.

The Preliminary Examination will ordinarily be taken as soon as the student is eligible and should be taken no later than 13 months for students entering with a Master’s degree or 17 months for students entering with a Bachelor’s degree after admission as a Pre-Candidate. A student may schedule his or her Preliminary Examination during either the first week of January or during the first two weeks of May. The student's advisor may request that the examination be taken at a different time, by submitting a petition to the graduate committee.

**Selection of Thesis Topic and Dissertation Committee Chair** - As soon as possible after passing the Preliminary Exam, the student should choose a thesis topic in consultation with the faculty member chosen by the student to serve as Chair of the Dissertation Committee. A faculty member with less than a 50% appointment in the Department of Civil and Environmental Engineering cannot serve as the sole Chair, but can serve as the Co-Chair provided that a faculty member with a greater than 50% appointment in Civil and Environmental Engineering is chosen as a Co-Chair. The student’s dissertation research must make a significant and important contribution to knowledge in the chosen area of specialization. However, the scope and complexity of the research should not make completion impossible within a reasonable period of time.

**Selection and Appointment of Dissertation Committee** - The Dissertation Committee must include at least four members of the graduate faculty, including at least two from the Civil and Environmental Engineering Department and at least one from a cognate field outside the Department. A committee member may be appointed from qualified individuals not affiliated with the University of Michigan, but this person may not serve as the Cognate Committee Member. It is also necessary to file an application along with documentation describing the qualifications of any person who is not a member of the graduate faculty to obtain approval for this person to serve as a committee member. When the Dissertation Committee has been selected and each prospective member has consented to serve, the designated Committee Chair requests that the Department recommends appointment of the Dissertation Committee by the Dean of the Graduate School.

**Advancement to Candidacy** - After most of the course work has been completed, the Preliminary Examination has been passed, the Responsible Conduct of Research and Scholarship (RCRS) requirement has been met, and the Dissertation Committee has been formed, the student may be advanced to candidacy upon request of the advisor through a written memo to the Graduate
Committee. Students and advisors should note that after reaching candidacy, students are allowed to take only one course per semester (unless the advisor commits additional funds beyond candidate tuition). Advancement to candidacy is granted by the Dean of the Graduate School upon recommendation of the Department Graduate Committee. The written recommendation must be received at the Graduate School in accordance with published deadlines for the term for which Candidacy is requested. The student should become familiar with Graduate School time deadlines for admittance to Candidacy. The Graduate School formally recognizes this milestone in the pursuit of the Ph.D.

Final Program and Scope of Thesis Research - Soon after the Dissertation Committee has been appointed, the Candidate should arrange for a Committee meeting to present the proposed remaining course work and thesis research program for Committee approval. The Dissertation Committee may establish requirements different from those specified earlier by the doctoral advisor. Having regular Committee meetings will avoid hardships resulting from deferring decisions on the final course program and research direction changes. It is recommended that these committee meetings be organized at least once a year and consist of a presentation by the student and a follow up discussion with the committee. Ideally, all committee members are present at these meetings.

English Language Proficiency - Every doctoral student must satisfy the departmental requirement of demonstrated proficiency in English writing before being advanced to candidacy. It is the responsibility of each Dissertation Committee to ensure that this requirement has been met. Certification by the Dissertation Committee Chair to the Graduate Committee that the Pre-Candidate has demonstrated proficiency in English writing will satisfy this requirement. Otherwise, this requirement must be fulfilled by the successful completion of one of the following courses:

- Technical Communications 610, Thesis, Dissertation Proposal, and Dissertation Writing for Engineers and Scientists, with a grade of "P",
- English Language Institute 620, Dissertation Writing and Writing for Publication I.

In the event that one of the above courses is used to satisfy the English proficiency requirement, the student must have taken the course previously or enroll in the course as soon as possible after advancement to Candidacy is achieved (Winter semester for January exam, Fall semester for May exam).

Research Proposal Defense - The Research Proposal Defense should occur no later than 30 months after enrolling in the Ph.D. program. Students pursuing more than one degree are expected to take no longer than 36 months. The candidate prepares a written research proposal, which identifies the research problem, provides a preliminary literature review of past research related to the problem, describes the student’s proposed approach to solve the problem, and includes any preliminary results that have been obtained. The research proposal must be submitted to the Dissertation Committee Chair no later than two weeks before the date of the Research Proposal Defense. If the proposal is not submitted by that date, the Research Proposal Defense may be postponed. The Research Proposal Defense will consist of a short oral presentation of the research proposal by the Candidate and an oral examination of the Candidate
by the Dissertation Committee. All members of the Civil and Environmental Engineering Faculty, advanced graduate students, and postdoctoral researchers may be invited to attend the Research Proposal Defense with permission of the Dissertation Chair. A copy of the research proposal will be filed in the Dissertation Committee Chair’s files.

**Preparation and Submission of the Dissertation** - The dissertation must be prepared in a style acceptable to the Graduate School as given in its current HANDBOOK FOR DOCTORAL CANDIDATES. The several steps in the process of completion, submission and approval of the dissertation are specified in the HANDBOOK. The Dean of the Graduate School approves each dissertation.

**Final Oral Examination (Dissertation Defense)** - After completion of the dissertation, a final defense is scheduled in which the results of the dissertation research are presented to the Dissertation Committee. Final revisions to the dissertation are recommended by the dissertation committee and after format checks, the application for the degree is accepted by the Rackham Graduate School.

**Publication and Dissemination of the Thesis** - In addition to publishing the dissertation and making it available through Deep Blue, the Department expects that technical articles based on the dissertation research will be published in technical, peer reviewed journals, and that the work will be presented at professional meetings or conferences.

**Student Honor Code**

The Student Honor Code was proposed by the engineering student body in 1915, and approved by the engineering faculty in 1916. It has been in effect since its inception, and is truly a distinguishing feature of enrollment at the College of Engineering. By observing the Code, students do their work in an environment of high standards of personal integrity and professional ethics.

As a basic feature of the Code, students are placed upon their honor during all examinations and written quizzes, and as required by the instructor, for computer assignments, homework, and laboratory reports. Although the instructor is available for questions, the examination may not be proctored. The student is asked to write and sign the following pledge at the end of the examination paper:

"I have neither given nor received unauthorized aid on this examination, nor have I concealed any violations of the Honor Code."

Either a student or the instructor may report a suspected violation to the Associate Dean of Academic Affairs, 2464 Lurie Engineering Center (LEC), (734) 647-7020. The report is then investigated by the Student Honor Council, resulting in a recommendation to the Faculty Committee on Discipline.