THE MECHANICAL ENGINEERING DEPARTMENT
DOCTORAL PROGRAM GUIDELINES

The following information is provided as a guide to the pursuit of a doctorate in Mechanical Engineering, including the general process and description of major requirements. *This information should be considered a guide – the requirements for the degree are spelled out in the Graduate Catalog, which is the official reference for all graduate school regulations.*

The essential milestones for completion of a Ph.D. in Mechanical Engineering are:

- Admission to the graduate school
- Selection of a research (dissertation) topic and faculty adviser
- Passing the qualifying examination
- Selection of a Ph.D. committee, and presentation of research proposal
- Ph.D. committee approval of courses to be taken for Ph.D. Program of Work
- Advance to doctoral candidacy
- Completion of necessary course requirements
- Research for dissertation
- Write dissertation
- Successful defense of dissertation

1. ADMISSION TO THE GRADUATE PROGRAM

New Students: Admission is based on GPA, GRE scores, letters of reference, and a statement of purpose. Generally, admitted students have a MS degree, but we also have a program to allow students to work on a Ph.D. degree directly from their B.S. degree. Continuing UT Students: If you received your MS degree from the University of Texas, you need to complete a form to apply for admission to the Ph.D. program. This form lists three professors who will be asked to recommend your admission to the Ph.D. program.

2. QUALIFYING EXAMINATION

The qualifying examination is best described as a graduate understanding of upper-division undergraduate and first year graduate courses. A student who has pursued a MS in the department can typically take the qualifying examination immediately upon completion of the MS, or possibly after having completed all or most of the MS course work. For a student entering with a MS from another school it is advisable to take at least one semester of graduate work (to get the perspective of our faculty on learning objectives) before taking the qualifying examination.

Each of the technical areas in the department administers a qualifying examination. The structure of the examination will vary depending on the technical area, and the area faculty member who serves as the coordinator should be consulted for details. Generally it consists of a combination of written and oral portions, and is typically offered twice each year.
A candidate may pass unconditionally, pass conditionally (with specific requirements such as additional courses with a minimum grade), pass a portion of the exam, or fail.

In addition to the Ph.D. qualifying exams offered by the various technical areas, the Department of Mechanical Engineering offers an Interdisciplinary Qualifying Exam. This Ph.D. qualifying exam is offered twice per year and is open to any doctoral student seeking a Ph.D. degree under the Mechanical Engineering Graduate Studies Committee. Technical area approval is not required for a student to select this Ph.D. qualifying exam option.

3. SELECTION OF RESEARCH TOPIC AND FACULTY ADVISER

The student should, immediately upon passing the qualifying exam, if not earlier, consult with his or her research advisor to decide on an appropriate dissertation topic. Typically, the research advisor serves as the chair of the dissertation committee. This committee will be responsible for overseeing the student's doctoral program (courses and dissertation).

4. ADVANCE TO DOCTORAL CANDIDACY

The Graduate Studies Committee (GSC) of the Mechanical Engineering program requires that a student pass the qualifying exam and be admitted to candidacy before accumulating 50 credit hours towards their Ph.D. degree (this includes research and seminar hours). This rule was adopted to promote a timely completion of the Ph.D. degree consistent with the University's "99" hour rule.

Advance to Ph.D. candidacy requires that a dissertation committee be formed. Per Graduate School rules, the dissertation committee includes a minimum of four members, including three members of the ME GSC and at least one member from outside the department. This committee must meet to review the student's course program and dissertation proposal. The committee will typically make recommendations with respect to the scope and direction of the dissertation. Furthermore, the committee reviews graduate courses taken, or to be taken, as part of the student's Program of Work, and may recommend that additional courses be taken. Courses to be taken are at the discretion of the dissertation committee, but the following minimum standard has been established by the Mechanical Engineering department GSC:

Completed or planned graduate coursework in the area of specialization, taken for grade, and amounting to a minimum of 18 credit hours (for students with an MS degree) or a minimum of 36 credit hours (for students without a MS degree).

Based on the recommendation of this dissertation committee, the student completes the necessary forms for application to doctoral candidacy. One form is the Ph.D. Program of Work, which involves a listing of the proposed course work (previously completed and yet to be completed); this form is signed by the student's dissertation supervisor confirming that the list of courses in the Program of Work has been approved by the dissertation committee. This form is then signed by the GSC chair and is held in the student's departmental file. Another (on-line) form specifies the proposed doctoral program chair and committee members, as well as an abstract of the proposed dissertation research. The Chair of the GSC, the Graduate Adviser, the student's committee, and the Dean of Graduate School approves this form. The student is then officially a "doctoral candidate".

5. RESEARCH FOR DISSERTATION

It is recommended that the doctoral committee meet at least twice after the initial meeting: one or more times to review and possibly redirect the dissertation work, and a final meeting for the dissertation defense. In addition, it is expected that the research adviser meet regularly with the candidate during the development of the dissertation.

6. WRITING OF DISSERTATION

The candidate should recognize that it takes significant time to write the dissertation and should allow at least one long semester for the formal writing after all technical work is done.
Also, the candidate should provide to the adviser as the first draft a complete manuscript, one that is completely satisfactory to the candidate and is in a form that could be word processed into final form.

7. DISSERTATION DEFENSE

At a time when the candidate and the research supervisor feel that the dissertation is complete and a draft has been completed, a defense is scheduled. Members of the committee should have a copy four weeks in advance of the defense. The defense and draft must meet the approval of the committee. If satisfactory, the committee will Pass the student and sign the Report of the Dissertation Defense. The candidate then has the dissertation prepared in final form, including any requirements specified by the committee, has a signature page signed by the committee, uploads the dissertation to the Texas Digital Library and submits remaining documentation to the graduate school. The finished document must be approved by the Graduate School.

SPECIAL REQUIREMENTS AND RESTRICTIONS

The following is a list of requirements and restrictions for doctoral students in the ME department. PLEASE NOTE: This document is not meant to be all-inclusive. This document includes areas where we have observed difficulties in the past. If you need clarification read the Graduate School Catalog, talk with the evaluators in the Graduate School Office (MAI 101), talk to the faculty in the academic areas, talk with the Graduate Coordinator of ME (ETC 5.224), or ask the Graduate Adviser of ME (ETC 5.146).

Registration and Courses

- The "99 hour" rule: after accumulating 99 credit hours towards their Ph.D. degree, students will be charged non-resident tuition. The 99 credit hours include seminar, research, and dissertation hours.

- A doctoral student should pass the qualifying examination and be admitted to candidacy before accumulating 50 credit hours towards their Ph.D. degree.

- Each semester, you are advised in your academic area concerning courses. A faculty member from the area must sign a form listing your proposed courses.

- If you are a continuing student, we strongly recommend that you pre-register. If you do not pre-register or if your registration is canceled (due to non-payment), your appointment as a TA or GRA will be delayed.

- If you are a full time student, you must enroll for at least nine credit hours in each long semester (Spring and Fall).

- The research courses (180M/380M/680M/980M), internship course (ME 397M) and the seminar courses (ME 397K) may be used to fulfill your minimum enrollment requirement, but they do not count toward your graduate degree.

- You may add/drop ME courses during the departmental add/drop period in the ME Graduate Office. Courses other than ME must be add/dropped in the department offering those courses.

- Dissertation is offered only on a CR/NC basis.

- If you are a Ph.D. student, you cannot sign up for dissertation (ME x99R) unless you are admitted to candidacy by the Graduate School. There are two sections of dissertation; the first is "R" for research and the second is "W" for writing. A student registers for "R" only once and registers for "W" each semester fall and spring semester after that until he/she graduates.
• A doctoral student must be enrolled in dissertation during his/her last semester in order to graduate.

• Refer to the course schedule for the last date to change grade status (CR/NC or letter grade).

**Teaching Assistants (TA) & Graduate Research Assistants (GRA)**

• In order to be appointed for a TA or GRA you must be in good standing (not on academic probation).

• If you are appointed as a TA or GRA, you must register, and remain registered, for 9 semester hours in the Fall and Spring semesters. Summer appointees need to register, and remain registered, for 3 semester hours.

• Teaching assistants are assigned by responsible faculty in the academic areas. If you are interested in being a TA, you must complete a TA application. The application is available at the end of each semester for the following semester. This must be done every semester, even if you have served previously.

• When appointed as a TA, you cannot withdraw to accept a GRA after classes begin.

• An international student must be certified as competent in the English language before he or she can be appointed as a TA. Non-exempt international students (depending on country of origin) must pass the ITA English Assessment, which is administered by the International Office.

• Graduate Research Assistants are assigned by faculty members holding research grants or contracts. If you are interested in a particular research program, you must contact the faculty member directly.

• You cannot be appointed as a TA/GRA more than 14 long semesters (7 years).

• In general, there is low priority for appointing a student to a teaching assistantship after the student has had a TA appointment for 2 long semesters.

**Doctoral Candidacy**

• You must pass a qualifying examination to be eligible to apply for Doctoral Candidacy.

• All courses on your Ph.D. Program of Work must be taken on a grade basis.

• Since the process of applying for candidacy takes several weeks, apply for candidacy well before the semester in which you would like to register for dissertation credit.

• Once advanced to candidacy, you must continuously register during all fall and spring semesters unless granted a "leave of absence" by the Graduate School.

• Apply to graduate in the semester you plan to graduate. In the event you do not graduate, a new application must be filed the next semester and every semester after that until you graduate.