

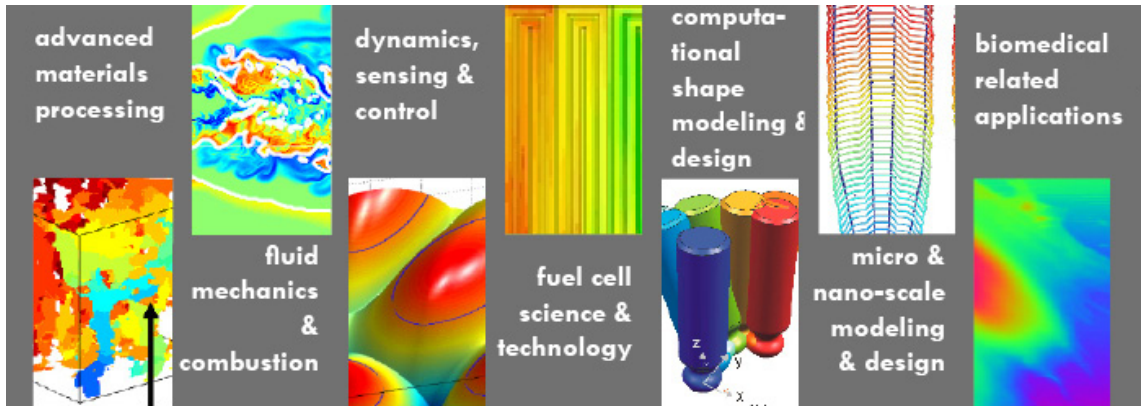


University of Connecticut  
School of Engineering

# Graduate Handbook

Department of Mechanical Engineering 2015–2016

[www.engr.uconn.edu/me](http://www.engr.uconn.edu/me)



# Table of Contents

Degree Programs	1
Application, Admission and Re-Application Procedures	2
Financial Aid	3
Core Course Requirements	4
M.S. Degree Requirements	5
Ph.D. Degree Requirements	7
Ph.D. Qualifying Examinations	10
Faculty Advisor and Thesis Committee	12
Registration and Orientation	13
Other Policies	14
Other Information	15
Mechanical Engineering Laboratories	16
Appendix: Forms	17

# Degree Programs

The Department of Mechanical Engineering offers degree programs leading to both Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees. The following sections of the handbook detail the academic requirements for graduate degrees in the two degree program concentration areas of the department:

**Systems and Mechanics** includes theories of computer-aided design and manufacturing, control systems, damage mechanics, biomechanics, sensing and monitoring, dynamics, elasticity, fracture mechanics, linear and nonlinear vibrations, kinematics of mechanisms, machining and metal removal, micromechanics, optimization, plasticity, plates and shells, robotics, stability, and wave propagation.

**Faculty:**

Zbigniew Bzymek  
Chengyu Cao  
Brice Cassenti  
Xu Chen  
Horea Ilies  
Eric Jordan  
Kazem Kazerounian  
Leila Ladani  
Ying Li

George Lykotrafitis  
Vito Moreno  
Julian Norato  
Nejat Olgac  
David Pierce  
Jiong Tang  
Bi Zhang  
Dianyun Zhang

**Thermal and Fluid Sciences** includes classical and statistical theories of thermodynamics and studies of conduction, convection, radiation, inviscid and viscous flows, compressible and heated flows, combustion, laminar and turbulent flows. Engineering applications include design and analysis of many systems, processes, and devices, such as advanced materials processing, microfabrication, biotransport phenomena, fuel cells, gas turbines, combustion systems, and heat pipes.

**Faculty:**

Baki Cetegen  
Wilson Chiu  
Mun Choi  
Amir Faghri  
Tai-Hsi Fan  
Tianfeng Lu

Thanh Duc Nguyen  
Ugur Pasaogullari  
Michael Pettes  
Chih-Jen (Jackie) Sung  
Savas Tasoglu  
Xinyu Zhao

# Application, Admission, and Re-Application Procedures

The formal application and admission procedure is outlined in the Graduate Catalog (available at <http://catalog.grad.uconn.edu>). It is imperative to read, understand and follow all of the Graduate School requirements.

## Application Material

All necessary application material may be obtained from the Mechanical Engineering Department website at: <http://www.engr.uconn.edu/me/cms/graduate/prospectivestudents/applicationadmissions>. An application must be complete in order to be considered for admission. There are three common omissions that delay many applications. While the entire application must be complete, applicants should pay particular attention to the following:

- The nominal application fee, set by the Graduate School, must be paid in full.
- A written research statement must accompany the application
- Three letters of reference must be submitted; at least two should be references for academic performance.
- In addition to these three items, international applicants must have taken the TOEFL and GRE examinations, and scores must be provided.

## Admission Procedure

The Graduate School forwards completed applications to the Mechanical Engineering Director of Graduate Studies who, together with members of the Mechanical Engineering Graduate Admissions Committee, evaluates the credentials of the applicant. They rank the application, assigning it a priority for financial aid and/or assistantship. The ranking and decisions are based on the applicant's academic record, the match between the applicant's area of interest and departmental programs, and the applicant's research statement, test scores, and letters of recommendation. Based on the evaluation, a recommendation on admission is made to the Graduate School. Admission to the University of Connecticut is granted by the Graduate School, not by the Department of Mechanical Engineering.

## Re-application

Students completing a master's degree program at the University of Connecticut who wish to continue toward the Ph.D. degree, as well as students desiring to transfer from a master's program in mechanical engineering to the Ph.D. program, must re-apply for admission into the Ph.D. program. Two letters of recommendation are required along with official transcripts.

# Financial Aid

The Department of Mechanical Engineering and the University provide financial aid for graduate students in one of the following forms: graduate teaching assistantships, graduate research assistantships, and fellowships. These assistantships typically include a tuition waiver, medical benefits, and a stipend. The value of this support package is usually over \$40,000 per year. Most graduate students receive financial aid in the form of research or teaching assistantships.

## Research Assistantships

Most faculty members in the Department of Mechanical Engineering have active grants that continually support graduate research assistants. The research assistant works with the faculty to conduct the sponsored research, and the research work forms the student's thesis/dissertation.

## Teaching Assistantships

Teaching assistantships are limited and are usually offered to graduate students for a period of two academic semesters, with preference given to students who are at the early stage of their graduate studies. Continuing students who wish to be considered can find an 'Application for Teaching Assistantship' form in Appendix or online.

## Fellowships

The University and the Graduate School provide a number of merit-based fellowship opportunities, including Graduate School Predoctoral Fellowships, Multicultural Scholars Program, Outstanding Multicultural Scholars Program, Outstanding Scholars Program, Doctoral Dissertation Fellowships. Details concerning these fellowships are available in the Graduate Catalog.

## Loans

Qualified students can also apply for other forms of financial assistance including: Graduate Student Senate Short Term Loans, Stafford Student Loans (GSL), and loans through the Carl Perkins Loan Program. Details and descriptions of application procedures are in the Graduate Catalog.

# Core Course Requirements

Standards and degree requirements of the Graduate School are described in detail in the Graduate Catalog. In the discussion to follow, these standards and requirements are summarized, and additional requirements of the Mechanical Engineering Department are described.

## Area of Concentration (applicable to M.S. and Ph.D. degrees)

To determine the appropriate course requirements the student must first choose one of the two areas of concentration in the Mechanical Engineering Department: Systems and Mechanics or Thermal and Fluid Sciences. The specific core course requirements for each of these areas differ as listed below.

### Systems and Mechanics Core Courses

1. ME 5105 Basic Concepts of Continuum Mechanics
2. ME 5190 Advanced Mechanics of Materials
3. ME 5155 Geometric Modeling
4. ME 5150 Analytical and Applied Kinematics
5. ME 5180 Advanced Dynamics I
6. ME 5160 Theory and Design of Automatic Control Systems
7. ME 5420 Mechanical Vibrations

### Thermal and Fluid Sciences Core Courses

1. ME 5110 Advanced Thermodynamics
2. ME 5130 Advanced Heat and Mass Transfer
3. ME 5120 Advanced Thermo-Fluid Sciences I
4. ME 5140 Heat and Mass Transfer in Multiphase Systems
5. ME 6170 Combustion and Air Pollution Engineering
6. ME 5311 Computational Methods of Viscous Fluid Dynamics

Beyond taking four core courses from an area of concentration, there are additional course requirements for the specific degrees (M.S. Plan A, M.S. Plan B, Ph.D.). These are described in the following sections.

# M.S. Degree Requirements

The M.S. degree may be earned under either Plan A (thesis option) or Plan B (non-thesis option). Plan A emphasizes problem-solving through research, and involves close interactions with mechanical engineering faculty members, while Plan B focuses on graduate level course work in mechanical engineering topics. For M.S. students, only those who select Plan A are eligible for financial support by the Department or the School of Engineering. For Students who have ever been financially supported in their graduate studies by the Department or by the School of Engineering, changing to M.S. Plan B requires the consent of the faculty advisor who provides the financial support.

## Required Credit Hours

A total of 30 credit hours after the B.S. is required. In Mechanical Engineering, Plan A requires 21 credits of advanced course work and successful completion of a thesis. Thesis work for the Plan A option is equivalent to 9 credit hours. The thesis must be an original and significant contribution to the field of engineering science, and must be defended orally according to Graduate School requirements. Plan B requires at least 30 credits of advanced course work. After completion of at least 24 credits, the student must take and successfully pass an oral examination in compliance with Graduate School requirements.

In exceptional cases, and for students with substantial graduate work elsewhere, the total credit hours taken at the Mechanical Engineering Department M.S. program after the B.S. may be reduced to 24 upon petition to the Mechanical Engineering Department Head (see form in Appendix).

- At most, 6 credit hours or two classes may be transferred from other institutions, subject to department approval through a Graduate Petition and to the Graduate School regulations outlined in the Graduate Catalog.
- At most, 3 credit hours of course work can be in University of Connecticut 3-4000 level courses that are not required for the undergraduate Mechanical Engineering degree and are not open to sophomore students.

## Plan of Study

The student's plan of study should be prepared with the aid and approval of the advisory committee and be approved by the Director of Graduate Studies and the Executive Committee of the Graduate Council. All students must have a plan of study on file at the Graduate School and the Mechanical Engineering Department. For Mechanical Engineering M.S. students, the plan of study must include the following coursework:

- **Four** Mechanical Engineering core courses chosen from the student's area of concentration, listed on page six.
- **One** mathematics, computational, engineering analysis or statistics course.
- ME 6340 Graduate Seminar for **at least three** semesters enrolled as a full-time student. A student is required to attend at least five ME seminars during the semester to pass ME 6340.
- **Two** elective courses with at least one in Mechanical Engineering (Plan A), or **five** elective courses with at least three in Mechanical Engineering (Plan B). Elective courses outside of engineering, science or mathematics must be approved by the student's advisory committee *in advance*. Courses that are specific for the Master of Engineering (MENG) program, including ENGR 5311, ENGR 5312, and ENGR 5313, cannot be used toward the M.S. degree.
- **Nine** credits of thesis Research (GRAD 5950), as stipulated in the Graduate Catalog (Plan A).

## Course Substitutions

If a student has completed equivalent courses in a well-established graduate program, he/she can apply for a waiver by petitioning the Department Head by the end of the first semester. If a waiver is granted, the student may substitute elective graduate course credits for the waived course credits. However, **at least two** of the required core courses must be taken at the University of Connecticut.

## Independent Study Courses

At most two independent study courses may be applied toward course work requirements. For students under Plan A, only one independent study course can be taken with the student's major advisor as instructor.

## M.S. Final Examination

For students under **Plan A**, an oral examination (often called the thesis defense) is conducted based on thesis research. The decision as to whether the student passes the examination is based on a vote of the advisory committee.

For students under **Plan B**, the format and content of the final examination is determined by the advisory committee. A student must indicate the intention of graduation at least 4 weeks before the end of the graduate study to the major advisor who will make arrangement for the final examination. The decision as to whether the student passes the examination is based on a vote of the advisory committee.



# Ph.D. Degree Requirements

The Ph.D. is primarily a research degree, and may be undertaken after the M.S. or following the B.S. To be awarded the Ph.D., the student must satisfy all requirements of the Mechanical Engineering Department and all requirements of the Graduate School. These requirements are more extensive than those associated with the M.S. degree and the major ones are as follows.

## Qualifying Examination

The student must successfully pass the Department's Ph.D. qualifying examination, described in the next section.

## Prospectus

Before the Ph.D. dissertation is well under way, the student must file a prospectus of the proposed research, according to Graduate School regulations. The student's advisory committee and the Mechanical Engineering Director of Graduate Studies must approve the prospectus. Instructions for writing the prospectus are included on the prospectus form.

## Prospectus Presentation

The student must give a one-hour research presentation in department seminar format to his or her Ph.D. advisory committee on the proposed dissertation research (which forms the prospectus). The seminar is held at the latest one year before the intended graduation date. The presentation will typically include preliminary results of the research. Two additional faculty not on the advisory committee must attend the presentation to serve as an external review of the proposed dissertation.

## Dissertation

The most important part of the study for the Ph.D. degree is the dissertation. A dissertation must be an original and significant contribution to the field of engineering science and must be defended orally according to Graduate School requirements. A copy of the dissertation must be made available to the advisory committee at least two weeks prior to the final examination. Other requirements are described in the Graduate Catalog.

## Final Examination

The final examination (an oral examination often called the dissertation defense) deals mainly with the subject matter of the dissertation. At least five members of the faculty including all members of the advisory committee must be present for the final examination. The dissertation defense is open to the public. The decision as to whether the student passes the examination is based on a vote of the advisory committee. According to Graduate School regulations, the notification of the time and place of the final examination must appear in *UConn Advance* no later than seven days prior to the examination.

## Publications

The student must have submitted a minimum of two papers for publication in the archival literature (journals), and have at least one of these papers published or accepted for publication at the time of the Ph.D. defense. These papers must be based on the student's dissertation research and must be co-authored by the student's faculty advisor from the Mechanical Engineering Department.

## Residency

All students, full-time and part-time, must satisfy a residency requirement by spending at least two consecutive semesters in the second or subsequent years of graduate work on the Storrs campus, devoting all effort to graduate work and research.

# Ph.D. Degree Requirements continued

## Foreign Language or Related Area of Study

The student must satisfy a “Foreign Language” or a “Related Area of Study” requirement as described in the Graduate Catalog. In the Mechanical Engineering Department, the Ph.D. candidate’s native language being other than English will not be considered to meet the language requirement. This requirement may be fulfilled in one of three ways:

- completion of a 3 credit advanced mathematics course (such as ME 5507, which could also count toward the computational/math course requirement of the Mechanical Engineering Department)
- completion of 6 credits of courses in a related area of study, as approved by the faculty advisor and the candidate’s advisory committee
- completion of language courses per the Graduate Catalog

## Changing Programs

Any student who entered the Ph.D. program, was supported by an assistantship, scholarship or fellowship, and abandoned the program before completion, may only pursue the M.S. Plan A option to leave with an M.S. degree.

## Required Credit Hours

- For the Ph.D. following the M.S. degree, a minimum of 21 credit hours after the M.S. (excluding requirements for dissertation, language and minor area) is required. In exceptional cases, and for students with substantial post-M.S. graduate work elsewhere, the total after the M.S. may be reduced to 18 credit hours taken at the Mechanical Engineering Department Ph.D. program upon successful petition to the Department Head. The ‘Graduate Petition Form’ is attached in the Appendix.
- For a Ph.D. following the B.S. degree, a minimum of 42 credit hours after the B.S. (excluding requirements for dissertation, language and minor area) is required. In exceptional cases, and for students with substantial post B.S. graduate work elsewhere, the total of credit hours after B.S. may be reduced upon successful petition to the Department Head.
- At most, 6 credit hours or two classes may be transferred from other institutions, subject to department approval through a Graduate Petition and to the Graduate School regulations outlined in the Graduate Catalog.
- At most, 3 credit hours of course work can be in University of Connecticut 3-4000 level courses that are not required for the undergraduate Mechanical Engineering degree and are not open to sophomore students.

## Plan of Study

The student’s plan of study should be prepared with the aid and approval of the advisory committee and be approved by the Director of Graduate Studies and the Executive Committee of the Graduate Council. All students must have a plan of study on file at the Graduate School and the Mechanical Engineering Department. For Mechanical Engineering students, the plan of study must include the following coursework:

### Ph.D. following a B.S.:

- **Four** Mechanical Engineering Ph.D. core courses in the student’s area of concentration, listed on page six.
- **Two** advanced graduate courses in mathematics, computational or engineering analysis, or statistics. One of these courses may be used to fulfill the language requirement.
- **Eight** elective courses, at least five of which must be in Mechanical Engineering. Elective courses outside of engineering, science or mathematics must be approved by the student’s advisor and advisory committee *in advance*. Courses that are specific for the Master of Engineering (MENG) program, including ENGR 5311, ENGR 5312, and ENGR 5313, cannot be used towards the M.S. degree.

## Ph.D. Degree Requirements continued

- ME 6340 Graduate Seminar for **at least six** semesters enrolled in the Ph.D. program as a full-time student (part-time students must have attended and passed the ME 6340 course for a minimum of two semesters during their one-year residency period). A student is required to attend at least five ME seminars during the semester to pass ME 6340.
- **Fifteen** GRAD 6950 course credits, as described in the Graduate Catalog.

### Ph.D. following an M.S.:

- **Four** Mechanical Engineering Ph.D. core courses in the student's area of concentration as listed on page six. If the M.S. degree was obtained from the University of Connecticut and the student has already taken the four core classes, they may be replaced with four Mechanical Engineering elective courses.
- **One** advanced graduate course in mathematics, computational or engineering analysis, or statistics.
- **Two** elective courses. Elective courses outside of engineering, science or mathematics must be approved by the student's advisor and advisory committee *in advance*. Courses that are specific for the Master of Engineering (MENG) program, including ENGR 5311, ENGR 5312, and ENGR 5313, cannot be used towards the M.S. degree. The language requirement may be fulfilled by taking an advanced mathematics course as one of the two electives.
- ME 6340 Graduate Seminar for **at least five** semesters enrolled in the Ph.D. program as a full-time student (part-time students must have attended and passed the ME 6340 course for a minimum of two semesters during their one-year residency period). A student is required to attend at least five ME seminars during the semester to pass ME 6340.
- **Fifteen** GRAD 6950 course credits, as described in the Graduate Catalog.

### Course Substitutions

If a student has completed equivalent courses in a well-established graduate program, he/she can apply for a waiver by petitioning the ME Department Head by the end of the first semester. If a waiver is granted, the student may substitute an equal or greater number of elective graduate course credits for the waived course credits. However, **at least two** of the required ME core courses must be taken at the University of Connecticut.

### Independent Study Courses

At most two independent study courses can be applied towards course work requirements and only one independent study course can be taken with the student's major advisor as instructor.

# Ph.D. Qualifying Examinations

## Purpose

The Ph.D. qualifying examination fulfills the requirement for **General Examinations** as explained in the Graduate Catalog. The examination has two objectives: (1) to make sure the candidate has sufficient mechanical engineering background for doctoral studies, and (2) to maintain quality, uniformity and consistency in the department's doctoral program.

## Timing

The student must take this examination for the first time immediately following his/her first semester of the Ph.D. program at the University of Connecticut. In the event of an unsuccessful first attempt, the student must re-take the examination at its next offering in the following semester.

The qualifying examinations are offered in approximately the third week of January (following the fall semester) and approximately in the third week of May (following the spring semester), and candidates must sign up for the examinations no later than the first week of December and the first week of April, respectively. Each candidate must consult with the faculty advisor before selecting the topical exams. Each candidate must indicate one topical exam that is most closely related to the candidate's research interest. The faculty advisor must sign and endorse the student's selection. For the benefit of the candidates, an information briefing will be held approximately one month prior to the examinations.

## Examination Format and Subjects

The qualifying examinations consist of two parts: (1) a series of written topical exams and (2) a presentation to the student's Ph.D. advisory committee. The written topical exams are given over several consecutive days. A candidate must take a total of **three** examinations:

- A mandatory **Applied Mathematics Examination** (Topics typically covered in ME 5507, MATH 2210, MATH 3410).
- In addition, the candidate must choose **two** of the following eight examinations. The topics covered in each of the examinations are indicated below. Note that the University of Connecticut courses listed after each topic are representative, but not necessarily all-inclusive of the topical coverage.
  1. **Solid Mechanics Examination** (CE 2110 Statics, CE 3110 Strength of Materials)
  2. **Dynamics Examination** (CE 2120 Dynamics)
  3. **Vibrations Examination** (ME 3220 Vibrations)
  4. **Systems Examination** (ME 3253 Linear Systems Theory)
  5. **Fluid Mechanics Examination** (ME 3250 Fluid Mechanics)
  6. **Thermodynamics Examination** (ME 2233 Thermodynamics Principles, ME 2234 Applied Thermodynamics)
  7. **Heat Transfer Examination** (ME 3242 Heat Transfer)
- Each candidate must indicate which of the two topical exams (excluding mathematics) is most related to their research area. In addition to other requirements of the Ph.D. Exams, the topical exam in the student's research area must be passed unconditionally.

Each examination will be monitored by one faculty member or more. Each candidate will be tested for a graduate level knowledge of undergraduate course materials on the subjects listed, and judged on their understanding and use of concepts stemming from fundamental engineering principles. A candidate's graduate knowledge of undergraduate courses must include as a minimum:

## Ph.D. Qualifying Examinations continued

- an ability to solve any problem typically assigned in such courses, explain the basic principles supporting each step, and to identify the assumptions and limitations of the underlying theory used
- an ability to derive governing equations and major formulae from basic principles used in the subject area
- an ability to list and explain the physical meaning of the basic principles of each topic, and to explain the physical meaning of solutions
- an ability to solve problems including those that are not typically covered in such courses, using the basic principles of the subject area

### Evaluation of Topical Exams

Each candidate's performance in a topical area will be assessed by faculty members conducting the examination in that area. The outcome of a topical examination will be one of the following: (1) pass, (2) pass conditionally pending further examination during the oral presentation, (3) fail with the option to re-take the examination, (4) fail with no options. Students will be given the option to re-take a failed topical exam no more than once. The overall outcome of the written topical examinations will be one of the following: (1) pass all, (2) re-take some or all, (3) conditional pass, pending further examination during the oral presentation that follows, (4) fail. The results of the written topical examinations will be announced in writing to the candidate by the Director of Graduate Studies and may additionally be communicated by the student's faculty advisor.

### Oral Presentation of Literature Review as the Second Part of Ph.D. Qualifying Examination

Following the successful completion of the oral topical exams, the candidate must schedule a 45-minute presentation with their Ph.D. advisory committee no later than 6-months following the written topical exams. This presentation should focus on a particular research area and should discuss relevant literature including no fewer than 10 journal articles. The student should describe the current understanding of a particular topic and questions that are unanswered in the literature. This presentation is not intended to focus on the candidate's own research results or progress but instead to demonstrate that the student can formulate a research question and approach. The student should discuss this presentation with their advisor to attain additional guidance. The advisory committee makes a final pass/fail decision based on this presentation, which can be repeated once if necessary and at the discretion of the committee. In the case that the student receives a conditional pass for the written topical examinations, this second part of the qualifying examination will be conducted jointly by the student's advisory committee and the faculty involved in the written topical examination (in the conditionally passed topical area). The pass/fail decision will be made by the joint committee.

Following this successful presentation to the committee, the student will have passed the General Exam. The Report on the General Exam should be submitted to the Graduate School and Department to indicate the completion of the Qualifying Examination process.

# Faculty Advisor and Thesis Committee

## Faculty Advisor

The faculty advisor works closely with the student during the entire graduate program. Although the Director of Graduate Studies and the faculty advisor will explain the rules associated with the degree, the ultimate responsibility for meeting all requirements lies with the student. Students are encouraged to consult with the Director of Graduate Studies on any questions regarding the regulations in this handbook.

The Director of Graduate Studies serves as the student's temporary faculty advisor for the first semester, except for students who are brought in as Research Assistants. For Research Assistants, the faculty member who obtained the research grant supporting at least 50% of the assistantship serves as the student's advisor. **New students must complete their major advisor selection by the end of the second semester after entering the program. Failure to comply with the deadline may be considered as lack of satisfactory progress toward the degree and bear associated consequences, including discontinuation of financial support and dismissal from the program.**

Prior to arriving at the University of Connecticut, students should learn about the research being done by the faculty. The faculty member profiles (on the web at <http://www.engr.uconn.edu/me>) are a good source of up-to-date information. Once a student arrives on campus and has identified his/her area of concentration, the student is requested to meet with faculty members in the specific area group (see page three) to determine possible topics for a thesis. **It is mandatory for a student receiving full TA or fellowship (that is not tied to a particular faculty) to meet with all full-time graduate faculty in the specific area group.** The 'ME Selection of Major Advisor Form' (Appendix) should be signed and dated by each faculty member following each meeting. The student then returns this form along with the indication of a preferred academic advisor to the Director of Graduate Studies.

The faculty advisor should be a full-time faculty member of the Mechanical Engineering Department and a member of the University's Graduate Faculty. An up-to-date list of full-time Mechanical Engineering faculty members may be found at <http://www.engr.uconn.edu/me>, and a list of all Graduate Faculty is included in the Graduate Catalog.

The department normally assigns the student to the preferred faculty indicated by the student after confirming with that faculty, and the student is notified of the advisor assignment. The student will normally work with the assigned major advisor throughout the degree program, but in exceptional cases, may request a change in the major faculty advisor. Note that changes to the major advisor following initial assignment must be approved by the Department Head on the 'Notification of Change of Major Advisor' form. Since there are practical considerations associated with these changes (loss of time and, possibly, financial support), students are encouraged to make a careful initial selection.

## Thesis Committee

All students under the thesis option must have a thesis committee consisting of at least three faculty members (including the major advisor). At least one associate member from outside the department is recommended. The committee will be selected by the student in consultation with the major advisor, before completion of the second semester of work. This committee will supervise the candidate's entire program of study.

## Registration and Orientation

Students should register for all of their courses in the University's computer system **by December 1** for spring classes and **by June 1** for fall classes. Enrollment in courses as of the two dates will normally be used to determine if the course will be offered. Prior to registering for courses, students should make an appointment with their faculty advisor to plan their class schedule for the following academic semester.

All incoming students are required to attend the Mechanical Engineering new student orientation, usually held in late August. A variety of important topics regarding the graduate program are discussed, and there are opportunities for students to ask questions. Incoming students should register for classes immediately after attending the mandatory orientation meeting held by the Director of Graduate Studies.

Courses may be dropped through the ninth week of a normal semester or prior to the halfway point during a summer semester. Courses can normally be added through the fourth week of the semester or as of the midpoint of a summer semester. For students supported on an assistantship or fellowship, all course adds/drops must be made with the prior consent of the faculty advisor. Adding or dropping a course without your advisor's consent may result in loss of financial support.

Students who have completed all coursework but require more time to complete their research must enroll in a zero-credit, Continuing Registration course (GRAD 5998, GRAD 5999, GRAD 6998, and GRAD 6999). Please consult the Graduate Catalog for more details.

Fees must be paid at the Office of the University Bursar or a limited deferment of the payment date must be obtained from the Deferment Office before completion of registration. In any event, registration of courses and payment of fees or issuance of limited deferment must be completed on or before the second Friday of the Semester; otherwise, the student may be subject to a late registration/payment fee. Estimated total expenses for the academic year are given in the Graduate Catalog.

### Resolution of the Council of Graduate Schools

The University of Connecticut abides by the resolution of the Council of Graduate Schools, a national organization. The text of this resolution is included in the Graduate Catalog. The main features of the resolution are as follows:

- Acceptance of an offer of financial support by a prospective student completes an agreement that both the student and the graduate school expect to honor.
- Students are under no obligation to respond to offers of financial support prior to April 15.
- An acceptance of an offer of financial support given or left in force after April 15 commits the student to not accepting another offer from another school without first obtaining a written release from the institution to which the student has made a commitment.

The Department of Mechanical Engineering requires written notification from any graduate student who intends to withdraw permanently from the Mechanical Engineering graduate program. For students who are supported with a fellowship, teaching or research assistantship, written notification must be given to the Director of Graduate Studies and the student's faculty advisor at least six months prior to the student's departure. Students who are not supported financially must provide written notification at least three months prior to the student's departure.

### Department Seminars

The Mechanical Engineering department seminar (ME 6340) is a formal course with 0 credits and a Pass/Fail grade. All graduate students must sign up for the course for a sufficient number of semesters (please refer to the respective requirements for Ph.D. and M.S. students in this handbook), and must attend at least five seminars in the department seminar series during the semester to earn a passing grade. A student may attend other School of Engineering seminars during the semester to make up missed ME seminars. In that case, the student must file the ME missed seminar makeup form and submit it to the seminar coordinator. The seminar coordinator is the instructor on record for the course and will be responsible for grading. A student must have a passing grade in the seminar courses for a sufficient number of semesters to satisfy the Department requirements for graduation.

### Leave of Absence

A leave of absence can be taken in either the M.S. or Ph.D. program provided that the time limitations discussed above are fulfilled. It is required that the student inform his/her faculty advisor and the Director of the Graduate Studies in writing at least three months prior to the semester of the leave. A leave of absence may adversely impact financial aid.

### Graduation Procedure

Students must fill out the 'Clearance Notice for Engineering Students Completing a Graduate Degree' and the 'Graduation Checklist' (Appendix) at least two weeks prior to leaving the university. The forms are given to the Director of Graduate Studies who will check that the Mechanical Engineering degree requirements have been met. The 'Clearance Notice' and the 'Graduation Checklist' will then be forwarded to the Department Head for final action.



## Other Information

### Non-Degree Program

U.S. students who do not have the requirements, or do not wish to be accepted to the regular graduate programs, can take courses under non-degree status. Applicants to the regular graduate programs can also register under this status while their application is being processed: registration will have no effect on the approval or denial of their application. With the approval of the student's advisory committee and the graduate school, a maximum of two non-degree courses with grades of B or higher can be transferred to the graduate degree program. Non-degree students may register for courses in the Department of Mechanical Engineering only with the approval of the Department Head.

### Office and Mail/E-Mail

Each full-time graduate student who is supported will be assigned an office and a mailbox for incoming mail. All students must provide the Graduate Program Coordinator, Ms. Laurie Hockla, with their most commonly used email address. Students should check their email and mailboxes daily for Department/University announcements and correspondence.

### Telephone

Laboratory telephones are for local calls only. If a student's research requires long distance phone calls, the research advisor should be consulted. Please keep a list of all long distance calls made in a telephone log.

### Photocopying

The photocopier in the Mechanical Engineering department office is to be used for official purposes only: personal copying is not allowed. Teaching Assistants must obtain permission from the instructors before using the photocopier. Research Assistants must contact the faculty advisor prior to using the photocopier.

### Computer Accounts

Students may apply for a computer account on the School of Engineering's network, run by ECS, the Engineering Computing Services (<http://ets.engr.uconn.edu/helpdesk>), through the Department's Computer Lab Coordinator, Mr. Steve White (EII-202; 486-1449). The ECS account provides access to electronic mail and the internet. The account may be accessed from the Mechanical Engineering Department's Computational Laboratory (EII, Room 202). The Department's computers are available to students primarily for use in their research and coursework. Additional machines are available in other computer clusters, such as in the Engineering Learning Center (on the third floor of the Engineering II Building).

# Mechanical Engineering Laboratories

For a description of the research laboratories, please see the Mechanical Engineering Department homepage at <http://www.engr.uconn.edu/me>

## Computational Laboratory

The Mechanical Engineering Department's Computation Laboratory is located in EII 202 and is equipped machines that run a variety of computation and productivity software packages. All of the stations have access to the Internet, and are fully integrated with the School of Engineering's network which provides data storage and automatic backup capabilities. Computational packages are available from several software vendors and include EDS (Unigraphics, SolidEdge, I-deas NX), Fluent, Inc (Fluent, Gambit, Flowlab), Abaqus, and PTC (Pro/Engineer Wildfire). Scanning and printing facilities are also provided. The lab's software policy is to be accommodating, and additional software can be installed as needed by individual research projects. In order to provide a state-of-the-art working environment, the hardware is under constant review, with new machines scheduled to be purchased at least once a year.

## Metalworking and Machine Shop Laboratory

This instructional and research laboratory is equipped with a variety of state-of-the-art machinery to provide training to shop users and to lend support in fabrication on any type of equipment for undergraduate and graduate research. Equipment available is: standard tool room/machine shop equipment, computer aided machinery, instrumentation equipment, light sheet metal fabrication capability, welding equipment, a casting gas furnace for small aluminum parts, a roller mill (6" capacity), a swaging machine, and various wood and plastic working equipment.

All shop users must be shop-trained and qualified. Any student in engineering is encouraged to use the shop facilities for any academic or research work under the supervision of the shop staff. Shop training courses are regularly offered two times a year, during the last full week before the start of any semester. This course consists of 40 hours of mixed classroom and hands-on equipment training, and will normally lead to a shop qualification and proficiency certificate. Special needs and training of a small group of students can be arranged at any time during the year with the shop manager, provided they do not disrupt the workload and priorities of the laboratory. Some equipment may also be used for testing or short-term research and data collecting.

## Appendix: Forms

Forms may be downloaded from the URLs given.

### Department Forms (see: <http://www.engr.uconn.edu/me/cms/graduate/currentstudents12>)

- Graduate Petition Form
- Application for the Ph.D. Qualifying Examination
- Application for Teaching Assistantship
- ME Selection of Major Advisor Form
- Notification of Change of Major Advisor
- ECS Engineering Computer Account Application Form
- ME Missed Seminar Makeup Form
- Graduation Checklist

### Graduate School Forms (see: <http://grad.uconn.edu/current-students/forms/>)

- Graduate School Application Forms (online and paper formats)
- Plan of Study (M.S. and Ph.D.)
- Doctoral Dissertation Proposal Coversheet and Instructions
- Report on the Final Examination for the Master's Degree
- Report on the Final Examination for the Doctoral Degree
- Announcement of the Dissertation Oral Defense (Ph.D.)
- Doctor of Philosophy Dissertation Tentative Approval Page (Ph.D.)
- Clearance Notice for Students Completing a Graduate Degree
- Please see Graduate School Website for other forms