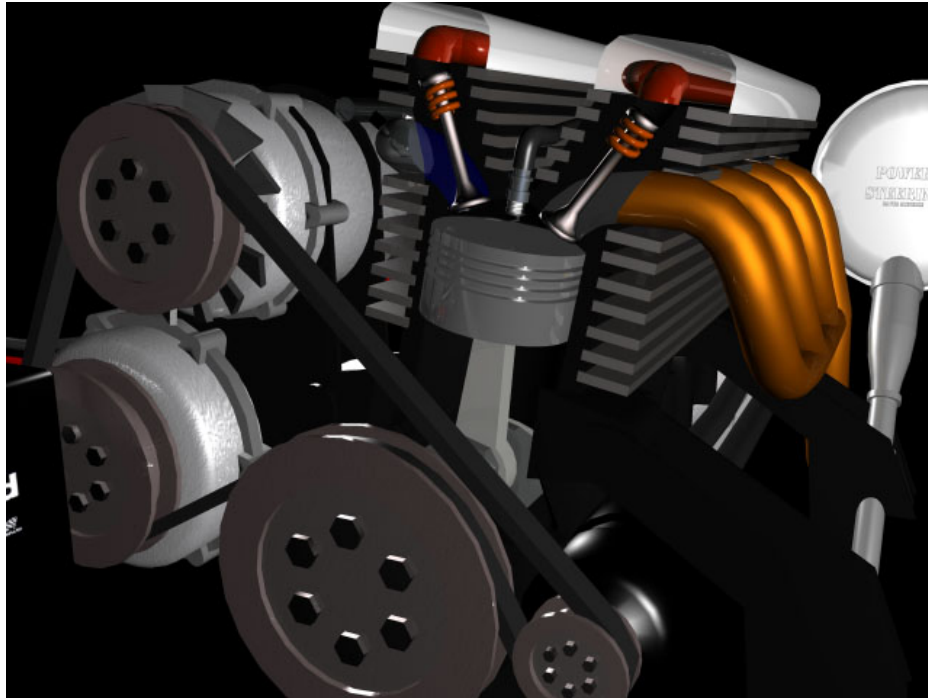


GRADUATE STUDENT HANDBOOK



Department of Mechanical Engineering

The University of South Carolina

(Updated on November 30, 2009)

MECHANICAL ENGINEERING GRADUATE STUDENT HANDBOOK

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PART I. GENERAL INFORMATION

A. SOURCES OF INFORMATION

This Handbook is intended to assist Department of Mechanical Engineering (DME) graduate students at The University of South Carolina (USC) and is a supplement to the material contained in the USC Graduate Studies Bulletin (<http://www.sc.edu/bulletin/grad/index.html>). The rules and regulations in the Bulletin govern all graduate students at USC. **All graduate students must carefully read the Graduate Bulletin and this Handbook.**

Other general sources of information published by USC include the following:

1. Master Schedule of Classes (http://registrar.sc.edu/html/Course_Listings/)
2. Master's Thesis Guidelines
<http://www.gradschool.sc.edu/doclibrary/documents/thesis.guidelines.pdf>
3. Doctoral Dissertation Guidelines
<http://www.gradschool.sc.edu/doclibrary/documents/thesis.guidelines.pdf>

Additional information can be obtained from the Graduate School (<http://www.gradschool.sc.edu/>).

You may also contact Ms. Renee Jenkins (email address: jenkinsr@engr.sc.edu) of the DME Student Services Office for issues related to graduate records and forms, and Dr. Tony Reynolds (email address: reynolds@engr.sc.edu), DME Graduate Director and chair of the DME Graduate Studies Committee, if you have questions about graduate policies.

B. ADMISSIONS

The Department of Mechanical Engineering offers six graduate degree programs: Master of Science (M.S.) in Mechanical Engineering and in Nuclear Engineering, Master of Engineering (M.E.) in Mechanical Engineering and in Nuclear Engineering, and Doctor of Philosophy (Ph.D.) in Mechanical Engineering and in Nuclear Engineering. The Graduate School, based on recommendations from the department, grants admissions to these degree programs. All applications to the degree programs must be processed through the Graduate School office on the Columbia campus. Application information and forms can be obtained from the Graduate School's "FUTURE STUDENTS" website at <http://www.gradschool.sc.edu/futurestudents/index.html> . Applications can be made online at the above website or by submitting the application forms to:

The Graduate School
University of South Carolina
Columbia, SC 29208, U.S.A.

USC admission standards are described in the USC Graduate Studies Bulletin. Specific admission requirements for graduate degree programs offered by DME are described below.

Admission Requirements

In general, the admission processes for the ME, MS, and PhD programs in Mechanical Engineering and in Nuclear Engineering are highly competitive. Admission decisions are based on the quality of the applicant's previous university-level academic work (as reflected by grade point average or GPA), letters of recommendation, GRE scores, and other evidence of past accomplishments. GRE General Test scores must be submitted by (1) all applicants seeking assistantships and/or tuition support, (2) all applicants applying for a research based degree program (PhD or MS), and are recommended for all other applicants as well.

International applicants must also submit TOEFL or the IELTS Intl. Academic Course Type 2 exam scores. The minimum required TOEFL and IELTS scores are set by the graduate school and can be found here: <http://www.sc.edu/bulletin/grad/GGradschool.html> .

C. ADVISEMENT

The temporary academic advisor for all new graduate students is assigned by the Graduate Director. A permanent Major Advisor (the Academic Advisor) should be chosen after consultation with faculty members whose interests are close to those of the student. Teaching Assistants (TAs) and Research Assistants (RAs) will also have a faculty member who acts as a supervisor for their work. This person may or may not be the student's Major Advisor.

D. GRADUATE COMMITTEES

Members of mechanical engineering graduate student committees (e.g. 2nd readers, thesis committee, dissertation committee, etc.) must be a tenure-track faculty member in the University of South Carolina system, on a term appointment as a Graduate School faculty, or approved by the department Graduate Studies Committee and the Graduate School on a case-by-case basis.

E. THE APOGEE PROGRAM

The Department of Mechanical Engineering offers a graduate distance-learning program called APOGEE (A Program of Graduate Engineering Education) to help engineering professionals earn graduate credit/degrees while maintaining full-time employment and without the constraints of on-campus attendance. A student enrolled in the APOGEE program can register for the degrees of Master of Engineering, Master of Science, or PhD. Prerequisites for enrollment and graduation are identical to those required for students registered on-campus in graduate programs of the Department of Mechanical Engineering.

APOGEE is a quality distance educational program designed to meet the needs of busy full-time employed professionals by providing flexibility in course content delivery. APOGEE courses are available via Windows Media Player video-streaming or download from the World Wide Web. This enables the student to access individual classes and course materials at any time and place according to the student's convenience. Thus the student will be able to participate in the enrolled course of study while still maintaining a busy work schedule, including any travel and/or

reassignment. If preferred, the student can receive a videotape copy of class lectures in lieu of receiving the lectures via web access.

The APOGEE program option is available only to those who physically reside in the USA.

Further information on APOGEE can be obtained online at <http://www.me.sc.edu/apogee/> or by calling the Office of Student Services in the Department of Mechanical Engineering at 803-777-9549, or by writing to:

Office of Student Services
Department of Mechanical Engineering
300 Main Street
Columbia, SC 29208

F. FINANCIAL AID

Three types of financial aid are available to qualified graduate students:

1. Teaching Assistantships (TAs)
2. Research Assistantships (RAs)
3. Fellowships and Scholarships

Students receiving a Teaching or Research Assistantship must be registered for 6 or more semester hours of credit during regular semesters and 1 semester hour in a six-week summer session. Loss of the assistantship may occur at any time due to poor academic or work performance.

Teaching Assistantships

Teaching Assistantships of 1/4 time (6 hrs/wk) or 1/2 time (12 hrs/wk), are available for qualified graduate students. Generally, 4 to 6 new assistantships are available each year and they are awarded competitively on the basis of academic potential and performance, not on the basis of need. Grades, GRE and TOEFL or IELTS scores, recommendations, and teaching experience are used in the evaluation process. All TAs must pass a TA training/evaluation required by the State of South Carolina and administered by the Graduate School.

Research Assistantships

Research Assistants are generally supported by external grants and contracts. Individual faculty members who have sponsored research projects select the recipients of these assistantships. Students should contact faculty members in their area of interest to ascertain if support is available.

G. SEMINAR REQUIREMENTS

All DME graduate students who are on assistantship are required to participate in the DME Seminar series. Participation will be defined as attending a minimum of 80% of the seminars. Any student who does not attend 80% of the seminars will not be allowed to continue to receive

research and/or teaching assistantships from DME in future semesters. Any student whose attendance falls below 50% during a semester will be subject, at the discretion of the DME Graduate Studies Committee, to immediate termination of his/her assistantship. Students involved in off-campus research, e.g. at a national lab, government facility, or a collaborating university, will be exempt from this requirement during their absence from USC. Other reasons for missing the seminar will be considered on a case-by-case basis.

Any student whose assistantship is terminated or not renewed based on attendance to seminars may appeal to the DME Graduate Studies Committee. The appeal must include a letter of support by the student's advisor as well as a letter of explanation for lack of attendance. The DME Graduate Studies Committee will make a recommendation to the full faculty who will vote yes or no to the question of whether the student's eligibility for assistantship is to be renewed.

PART II. DEGREE PROGRAMS

Graduate programs offered by the USC Department of Mechanical Engineering lead to six possible graduate degrees: M.S. in Mechanical Engineering and Nuclear Engineering, M.E. in Mechanical Engineering and Nuclear Engineering, and Ph.D. in Mechanical Engineering and Nuclear Engineering.

Graduate students must meet all the requirements of the USC Graduate School and of the Department of Mechanical Engineering. When a conflict exists, the University rules supersede those of the Department. Deviations from the stated requirements must be requested in writing and approved by the DME Graduate Faculty.

A. MASTER'S DEGREE PROGRAMS

Four Master's degree programs are offered by USC Department of Mechanical Engineering: M.S. and M.E. in Mechanical Engineering and M.S. and M.E. in Nuclear Engineering.

Maximum Time Allowed

Students should plan their activities so as to complete the M.S. or M.E. programs of study within four semesters of full-time study (not counting summers). The maximum period allowed for Master's degree work is six years. In the event that more time is spent on the program, the student must petition for special arrangements with DME and the Graduate School.

Transfer Credit

Transfer credits from a previous graduate degree program must be approved by both DME and the Graduate School. The credits must be dated within the six-year period allowed for a Master's degree. A maximum of 12 credits can be transferred from another school with a grade of B or better.

Programs of Study

All students must consult with their academic advisor and complete a Program of Study form during the first semester of enrollment. A new form must be submitted whenever it is necessary to modify the program of study.

It is the goal of the Department of Mechanical Engineering to have students, with the advice of their academic advisor, create a program of study that fits their interests while ensuring that they are well educated in the traditional areas of mechanical engineering or nuclear engineering.

All Master's degrees require a minimum of 30 credit hours at the 500-level or above. An M.E. degree will be granted upon successful completion of the course work as described below. An M.S. degree requires the successful completion of the course work described below as well as a thesis. Students must complete at least half of non-thesis credit requirements in courses numbered 700 or above. Students earning an M.S. must have at least 6 hours of thesis preparation and only 6 hours of thesis preparation may be applied to the required 30 hours.

Program of Study for Master of Science (M.S.) in Mechanical Engineering

All M.S. candidates entering the program during or after the Spring 2009 semester will be required to take core courses as listed below (candidates entering prior to Spring 2009 may use these requirements or the requirements in place at the time that they entered the program):

1. EMCH 508 (Finite Element)
2. EMCH 584 (Advanced Mechanics of Materials) or EMCH 532 (Intermediate dynamics)
3. EMCH 794 (Thermodynamics) OR EMCH 751 (Advanced heat transfer)
4. ENCP 707 (Continuum Mechanics)

All remaining work must be taken from an approved list of courses which currently includes all engineering courses numbered 500 or above and math courses numbered 700 or above. Business courses numbered 500 or above may be taken with advance approval by the advisor and the Graduate Studies Committee. Other courses will be added to the list as approved by the faculty.

Program of Study for Master of Engineering (ME) in Mechanical Engineering

All M.E. candidates entering the program during or after the Spring 2009 semester will be required to take core courses as listed below (candidates entering prior to Spring 2009 may use these requirements or the requirements in place at the time that they entered the program):

1. EMCH 508 (Finite Element)
2. EMCH 584 (Advanced Mechanics of Materials) or EMCH 532 (intermediate dynamics)
3. Any two of EMCH 794 (Thermodynamics), EMCH 751 (Advanced heat transfer) and ENCP 707 (continuum mechanics)

Program of Study for M.S. and M.E. in Nuclear Engineering

For both the M.S. and M.E. degrees, the following list of courses will constitute a required core:

EMCH 552: Introduction to Nuclear Engineering
EMCH 553: Nuclear Fuel Cycles
EMCH 755: Advanced Nuclear Engineering
EMCH 757: Radiation Shielding (or EMCH 557 Introduction to Radiation Shielding and Sources)
EMCH 758: Reactor Systems (or EMCH558 Introduction to Reactor Systems)

Elective Courses (to total 24 hours for MS or 30 hours for ME):

(at least 2 for MS or at least 4 for ME; approval by your advisor is required and documented in your program of study)

EMCH 555: Radiation Detection and Instrumentation
EMCH 561D: Licensing and Regulation
EMCH 561N: Radiation Damage in Materials
EMCH 754: Thermal Hydraulic Design of Nuclear Reactors

EMCH 756: Safety Analysis of Energy Systems
EMCH 759: Waste Management
EMCH 772: Nuclear Materials

Engineering Elective (to total 24 hours for MS or 30 hours for ME):

(up to 1 course upon approval by your advisor and documented in your program of study)

- Any NE elective (from above)
- A math course (should be advised as which would be most appropriate)
- Any Engineering course at 500 level or higher.
- GEOL 650: Microscopy & Microanalysis

Additional Program of Study Requirements

At least half of all courses must be taken at the 700 level and above.

Courses not satisfying the requirements for a graduate degree are:

1. Any course with a grade of D+, D or F.
2. More than 12 credits with grade of C+ or below (the 4-C Rule).
3. Any course taken on a non-letter grade basis (except thesis).
4. More than 12 semester hours of credits from a previous graduate degree program.

The student must maintain a **minimum grade point average of 3.0** in:

1. All courses taken as part of the official degree program.
2. All courses numbered 700 or above.
3. All courses taken for graduate credit, including those not included in the official degree program.
4. Pass/Fail – A "fail" grade counts toward the 4-C rule.

Publication Requirement for M.S. Students

An educational objective for M.S. students is that they have the ability to communicate their research results through oral presentations and written publications. Consistent with this objective, an M.S. student is required to submit, based on research performed while at USC, at least one conference paper (or abstract with presentation) or one journal paper prior to graduation.

Master's Thesis

A thesis is required of all students seeking the M.S. degree. The student's academic advisor must approve the subject of the thesis. The Graduate School will furnish general thesis regulations upon request. Any student who wishes to use University facilities or to confer with the faculty on thesis work must be officially enrolled for thesis credit.

Three typewritten or printed copies of the finished thesis must be submitted to the professors concerned, and after their approval, to the Graduate School. Students who plan to complete their Master's degree requirements during the summer must submit their thesis in sufficient time to ensure the approval and signature of the final draft and its delivery to the Graduate School, twenty (20) days prior to the end of the second summer session. The student should anticipate the absence of the professor for at least part of the summer. Information on the fees associated with the thesis submission is available in the [Master's Thesis Guidelines](#) or from the Graduate School.

Thesis Committee

A student's M.S. Thesis Committee consists of the student's advisor and the second reader of the student's thesis.

Thesis Presentation and Defense

The thesis presentation is to be open to all members of the University community and guests. During the Fall and Spring semesters, the presentation and defense are to be conducted during normal business hours and on a day that faculty are expected to be on campus. The Graduate Director must approve the date and time of presentations given during the summer sessions.

At least 7 days prior to the thesis presentation and defense, the student must submit a printed copy of a complete thesis to the advisor, the second reader and the Graduate Director. At least 14 days prior to the presentation and defense, a notice consisting of presentation title, abstract, time, place, and the names of the advisor and second reader is to be delivered to the Graduate Director. The notice is to be approved by the Graduate Director, dated and placed in the student's file. Using the information supplied, the Graduate Studies Committee will publicize the thesis and defense.

A Graduate Studies Committee representative will attend the presentation and defense. This representative will be selected by the Graduate Studies Committee and will be a Mechanical Engineering tenure-track faculty member who is not part of the student's thesis committee. This representative will report to the Graduate Studies Committee the results of the presentation and defense.

Comprehensive Examination

A comprehensive examination covering the major field of study is required of all candidates for the M.S. degree, which is conducted immediately following the thesis defense. The student's thesis committee administers this exam.

For the M.E. degree, a student passes the comprehensive exam by demonstrating mastery of the required course work in the core classes. This mastery may be demonstrated by obtaining a 3.0 average in the core courses.

Graduation

Within 15 days after the beginning of the semester of graduation, the student should submit an Application for Degree Form to the Graduate School. Dates for submission for each term are

published by the USC Registrar's Office (<http://registrar.sc.edu/html/graduation/>). If a student fails to meet the requirements for graduation, a new application must be submitted for the subsequent graduation term.

Timetable of Action for Master's Degree Students

A timetable of actions needed for the Master's degrees is presented below. Required forms should be submitted to the Graduate School unless otherwise noted. The student bears the complete responsibility to see that all deadlines are met and all forms have the required Departmental and College approvals and that the forms are submitted to the Graduate School by the stated deadlines.

<u>Form or Action</u>	<u>Deadline</u>
Program of Study Form	End of first semester enrolled as graduate student Prior to graduation
Publication Requirement for MS Students	Prior to Graduation
Comprehensive Exam for M.E. students	Prior to graduation
Application for Degree Form	Within the first 15 days after the beginning of the last semester before graduation
Submit Thesis Presentation Notice to Graduate Director for Approval	14 days prior to thesis presentation and defense
Submission of Thesis to Thesis Committee and Graduate Director	At least 7 days before thesis presentation and defense
Filing of Thesis Form with required copies of Approved Thesis	20 days before the end of the last semester

B. DOCTOR OF PHILOSOPHY DEGREE PROGRAM

Residency

Residence at an approved university is required for at least three academic years, or their equivalent, after the candidate has begun graduate work. At least one year of the three must be spent on the Columbia campus of the University of South Carolina and all must be within eight years of the date at which the degree is to be granted.

The year of residence on the Columbia campus after admission to a doctoral program can be fulfilled by successful completion of two consecutive semesters of 9 or more graduate credits per semester, or three consecutive semesters of 6 or more graduate credits per semester. Enrollment in a summer term (both sessions) may be counted as equivalent to a semester, but enrollment in summer is not required to maintain continuity. Of the 18 hours, only 12 may be Dissertation Preparation (899).

The intent of the residency requirement is to ensure that doctoral students benefit from and contribute to the complete spectrum of educational and professional opportunities provided on the campus of a comprehensive university. When establishing residency, the student should interact with faculty and peers by regularly attending courses, conferences, and seminars, and utilize the library and laboratory facilities provided for graduate education.

Maximum Time Allowed

All work to be applied toward the Ph.D. must be completed within eight years prior to graduation.

Transfer Credit

Transfer credits from a previous graduate degree program must be approved by both the Department of Mechanical Engineering and the Graduate School. The credits must be dated within eight years. Based on recommendations of the student's Advisory Committee, a maximum of 9 semester credits with a grade of B or better may be transferred. The course work must be relevant to the current degree and have course content and level of instruction equivalent to that offered by the University's own graduate degree programs.

Advisory Committee

During the first semester after enrollment in the Ph.D. degree program and prior to the Ph.D. Qualifying Exam, the student, in consultation with the student's advisor, must submit the names of the Advisory Committee. The Advisory Committee consists of a minimum of four faculty members, one of which must be from outside DME. The student's academic advisor is typically the chairman of the committee. This committee guides the student's dissertation work and advises on the Program of Study. Typically, the student will ask those faculty members closely associated with the research topic to be members of this committee. Faculty members have the right to decline any invitation to serve on a particular committee. The Advisory Committee must be approved by the Chair of the Department of Mechanical Engineering and by the Dean of the Graduate School.

Committees for Comprehensive Exam, Dissertation, and Dissertation Examination

A student's Advisory Committee also serves as the students' Comprehensive Exam Committee, Dissertation Committee, and Dissertation Examination Committee.

Program of Study

The Ph.D. degree requires a minimum of 60 graduate semester hours (including only 12 hours of dissertation preparation) beyond the Bachelor's degree. A student with a master's degree in mechanical engineering or a closely related field must take at least 18 hours of graded graduate courses (half of which must be 700-level or above), and a student without a master's degree must earn 48 graduate semester hours (42 or more hours must be graded graduate courses, half of which must be at 700 or above). Students not holding a Master's degree at the time of entry into the PhD program are subject to the same core course requirements as Master of Science candidates (see page 6 of this handbook).

Students entering the Ph.D. program holding a Master's degree in a subject other than mechanical engineering will be required to take as part of their 18 hours of required, graded, course work, the core courses required of all Master of Science students or they must show equivalence in previous, graduate, course work.

Prior to taking the Ph.D. qualifying exam, the student, in cooperation with the student's Academic Advisor, must complete the Ph.D. Program of Study Form. This form lists courses to be taken, courses to be transferred to USC, and courses already taken at USC.

Publication Requirement

An educational objective for Ph.D. students is that they have the ability to communicate their research results through oral presentations and written publications. Consistent with this objective, a Ph.D. student is required to submit, based on research performed while at USC, at least one peer-reviewed journal paper prior to graduation.

Ph.D. Qualifying Exam

The qualifying exam must be passed before a Ph.D. student can be admitted to candidacy. The exam, consisting of both written and oral components, is created and conducted by the student's advisory committee. The advisory committee, based on the exam results, determines if the student is qualified to pursue the Ph.D. degree program.

The designated date of the written and oral portions of the exam must be reported to the Graduate Director at least 14 days before the exam and a copy of the written portion of the exam submitted to the graduate director at least 7 days prior to the exam date. The written and oral portions need not be on the same nor on consecutive days. It is permissible for the advisory committee to devise a written exam which extends over several days.

A Mechanical Engineering tenure-track faculty member who is not part of the student's exam committee will be appointed by the Graduate Studies Committee to serve as the Graduate Studies

Committee representative at the oral exam. This representative will observe the exam, ensure the exam is conducted according to the established procedure, and report the exam result and problems (if any) to the faculty via the DME student services office.

A student, after being admitted to the Ph.D. degree program, will take the exam in the first spring semester after completing three graded graduate courses at USC or at an earlier time specified by the student's exam committee.

If the exam committee determines that a student is not qualified to pursue the Ph.D. degree program, then the student cannot continue in the Ph.D. degree program but may apply for entrance into the M.S. or M.E. degree program in the Department of Mechanical Engineering. A student may re-apply for the Ph.D. degree program (a) after completing an M.S. or M.E. degree or (b) after not being enrolled as a USC mechanical engineering student for two years.

Admission to Candidacy

The dean of The Graduate School admits a student to doctoral candidacy after the student has (1) passed the Ph.D. qualifying exam; (2) been fully admitted to the doctoral degree program; and (3) filed an approved doctoral program of study with The Graduate School. The Graduate School will notify the student and the graduate director of the admission to candidacy. Completion of all three components of the admission to candidacy procedure should be at least one full academic year before granting of the degree.

Comprehensive Exam

The Ph.D. Comprehensive Exam for the Department of Mechanical Engineering is to consist of both a written and oral parts. The examination is to be conducted by the student's Comprehensive Exam Committee. The examination is to focus on the student's proposed dissertation work. The student is to prepare a written dissertation proposal that will include background information, literature review, and proposed work. This written dissertation proposal will be considered the student's written examination and will be delivered to the examination committee no less than 7 days prior to the oral portion of the exam. The oral portion of the examination will consist of a 30 to 45 minute presentation of the proposed work followed by questions from the attendees. The presentation is to be open to all members of the University community and guests. After questions are complete from the general audience all non-faculty guests will be asked to leave the room. The remaining faculty may ask questions of the candidate on any subject related to the proposed work. The presentation is to be conducted during normal business hours and on a day on which faculty members are expected to be on campus.

At least 14 days prior to the oral portion of the examination, a notice consisting of a presentation title, abstract, time, place, name of student's advisor, and names of the student's Comprehensive Examination Committee members is to be delivered to the DME Graduate Director. The notice is to be approved by the Graduate Director and a copy of the notice placed in the student's file. Using the information supplied, the Graduate Studies Committee will publicize the oral portion of the examination.

The Graduate Studies Committee will appoint a DME faculty member who is not part of the student's comprehensive exam committee to serve as the Graduate Studies Committee Representative. This representative will observe at the student's comprehensive exam and report the results of the exam to the Graduate Studies Committee.

Within 7 days after completion of the student's exam, the examination committee and the committee representative will inform the Graduate Studies Committee of the examination committee's assessment of the student's performance on the exam. The examination committee shall recommend one of the following options; 1) the student's proposal is satisfactory, 2) the student's proposal is unsatisfactory but only minor revisions are needed or 3) the student's proposal is unsatisfactory and major revisions are needed. In the case of option 2), the student must revise the proposal to the satisfaction of the examination committee. Once the revisions are completed to the satisfaction of the examination committee the student will have passed the exam. In the case of option 3), the student will have one year to retake the exam. The student must complete both the written and oral portions. If a student's performance is unsatisfactory and major revisions are needed again, then the student will be removed from the Ph.D. program.

Passage of the exam is required at least 12 calendar months prior to graduation. A student must attempt the examination within 24 months (36 months for APOGEE students) after enrolling in the Ph.D. degree program. The student must successfully pass the exam within 36 months (48 months for APOGEE). Any student who does not pass the examination within the specified time limit cannot continue in the Ph.D. program. A student may appeal to the Graduate Studies Committee for a 12-month extension. This appeal must include reasons for the student not completing the exam on time, the plan for the student to complete the exam within 12 months, and endorsement from the student's dissertation committee.

Any student removed from the Ph.D. program, either for failure to take the exam or failure of the exam, will be ineligible to reapply for the Ph.D. program unless the student has earned an M.S. degree after being removed or has not been enrolled at USC for 2 years after being removed.

Doctoral Dissertation

No later than five years after the Comprehensive Exam, the student must present a dissertation based on research that has been approved by the student's Dissertation Committee and the Dean of the Graduate School.

Three copies of the approved dissertation and abstract must be filed in the Graduate School office at least 20 days prior to the end of the semester that the student wishes to graduate. Information on the fees associated with dissertation submission is available in the [Doctoral Dissertation Guidelines](#) or from the Graduate School. During the preparation of the dissertation, any student who wishes to use University facilities or to confer with the faculty on dissertation work must be officially enrolled for dissertation credit. Registration for a minimum of 12 credits in Dissertation Preparation is required of all doctoral candidates.

Dissertation Presentation and Defense/Examination

The dissertation presentation is to be open to all members of the University community and guests. During the Fall and Spring semesters, the presentation and defense is to be conducted during normal business hours and on a day that faculty are expected to be on campus. The Graduate Director must approve the date and time of presentations given during the summer sessions.

At least 14 days prior to the presentation and defense, a notice consisting of presentation title, abstract, time, place, name of student's advisor, and names of the student's Dissertation Examination Committee members is to be delivered to the Graduate Director. The notice is to be approved by the Graduate Director and a copy of the notice placed in the student's file. Using the information supplied, the Graduate Studies Committee will publicize the dissertation and defense.

At least 7 days prior to the presentation and defense, the student must deliver a printed copy of the complete dissertation to members of the student's Dissertation Examination Committee and to the Graduate Director.

The Graduate Studies Committee will appoint a DME faculty member who is not part of the student's dissertation committee to serve as the Graduate Studies Committee Representative. This representative will observe at the student's dissertation presentation and defense and will report to the Graduate Studies Committee the results of the presentation and defense.

Immediately following the dissertation presentation, the student must orally defend the dissertation before their Dissertation Examination Committee and other members of the DME Graduate Faculty. This dissertation exam is primarily concerned with evaluation of the student's dissertation and understanding in the student's area of specialization. The exam will be interpreted as pass or fail. Students who fail the exam may be allowed to correct the dissertation and/or re-stand the oral examination, depending upon the decision of their Dissertation Examination Committee. A student who is not granted a re-examination or does not properly correct the dissertation may not receive a Ph.D. degree in the DME.

Graduation

Within 15 days after the beginning of the semester of graduation, the student should submit an Application for Degree Form to the Graduate School. Dates for submission for each term are published by the USC Registrar's Office (<http://registrar.sc.edu/html/graduation/>). If a student fails to meet the graduation requirements, a new application must be submitted for the subsequent term.

Timetable of Action for Ph.D. Degree Students

A timetable of actions needed for the Ph.D. degree is presented below. Required forms should be submitted to the Graduate School unless otherwise noted. The student bears the complete responsibility for seeing that all deadlines are met, that all forms have the required Departmental and College approvals, and that the forms are submitted to the Graduate School by the stated deadlines.

Form or Action	Deadline
Advisory Committee formed	Within the 1 st semester after enrollment in the program and before the Ph.D. Qualifying Exam

Program of Study Form	Prior to taking the Ph.D. Qualifying Exam and whenever changed
Ph.D. Qualifying Exam	Exam schedule to Graduate Director 14 days before the exam; Exam in the first spring semester after completing three graded graduate courses at USC or at an earlier time specified by the student's exam committee.
Comprehensive Examination	During the first 24 months (36 months for APOGEE students) after enrollment in the Ph.D. degree program and 12 months prior to graduation
Publication requirement	Prior to graduation
Submit notice for the oral portion of the Comprehensive Examination to the Graduate Director	14 days prior to the Oral Comprehensive Examination date
Submission of Dissertation Proposal to the Comprehensive Examination Committee and to the Graduate Director	At least 7 days prior to the oral portion of Comprehensive Examination
Application for Degree Form	15 days after the beginning of the last semester
Submit Dissertation Presentation Notice to Graduate Director	14 days prior to dissertation presentation
Submission of Dissertation to Dissertation Committee and to the Graduate Director	At least 7 days prior to dissertation presentation
Filing of Dissertation Form with required copies of the approved dissertation and abstract	20 days before the end of the last semester(See the <u>Graduate Studies Bulletin</u> and <u>Doctoral Dissertation Guidelines</u> for additional requirements)

APPENDIX

MECHANICAL ENGINEERING FACULTY AND THEIR RESEARCH

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