

 FLORIDA ATLANTIC UNIVERSITY	NEW/CHANGE PROGRAM REQUEST Graduate Programs	UGPC Approval _____ UFS Approval _____ Banner Posted _____ Catalog _____
	Department Ocean & Mechanical Engineering College Engineering & Computer Science	
Program Name Ph.D. Mechanical Engineering	<input type="checkbox"/> New Program <input checked="" type="checkbox"/> Change Program	Effective Date (TERM & YEAR) <p style="text-align: center;">Fall 2018</p>
<p>Please explain the requested change(s) and offer rationale below or on an attachment</p> <p>This program change has been proposed in order to:</p> <p>1) Provide for flexibility in the Mechanical Engineering General Examination 1 by allowing students to:</p> <p style="margin-left: 40px;">a) Replace one core subject with an elective course, and also</p> <p style="margin-left: 40px;">b) Choose two of the following three courses as their ME core course selections</p> <p style="margin-left: 40px;">EGM 6533 Advanced Strength of Materials EML 6726 Advanced Fluid Dynamics EML 6233 Mechanical Vibrations or EML 6317 Advanced Control Systems.</p> <p>2) Explicitly state that an Engineering Mathematics course, at the graduate level, is required</p> <p>The provisions of the ME General Examination 1 have been revised to reflect the above changes.</p> <p>These Program Changes have been approved by the Department Graduate Committee.</p>		
Faculty Contact/Email/Phone Tsung-Chow Su, Eng. Sc.D. su@fau.edu 561-2973896	Consult and list departments that may be affected by the change(s) and attach documentation None- The change only affects this Department.	
Approved by Department Chair _____ College Curriculum Chair _____ College Dean _____ UGPC Chair _____ UGC Chair _____ Graduate College Dean _____ UFS President _____ Provost _____	Date 2-23-18 2/28/2018 2/28/2018 _____ _____ _____	

Email this form and attachments to UGPC@fau.edu one week before the UGPC meeting so that materials may be viewed on the UGPC website prior to the meeting.

Doctor of Philosophy with Major in Mechanical Engineering

Doctor of Philosophy with Major in Mechanical Engineering

The degree of Doctor of Philosophy with major in Mechanical Engineering is conferred by the University primarily in recognition of a demonstrated ability for independent and original research in the discipline. This ability must be supported by a comprehensive and coordinated plan of advanced study designed to provide a strong background in the fundamentals of mechanical engineering and related areas.

Admission Requirements

Minimum requirements for admission to doctoral studies in mechanical engineering are as follows:

1. A baccalaureate in engineering or a related field from a recognized institution;
2. An average of "B" or better in the last 60 credits of work attempted;
3. A score of 145 or higher on the verbal and 150 or higher on the quantitative portions of the Graduate Record Examination (GRE) or a combined score of 1000 or higher on the verbal and quantitative portions of the GRE taken prior to fall 2011. GRE scores more than five years old will not be accepted;
4. Demonstrated proficiency in both written and spoken English. A student from a non-English-speaking country is required to take the test of English as a Foreign Language (TOEFL) and achieve a score of at least 550 (CBT-213, iBT-79);
5. Three letters of reference attesting to the student's potential for graduate studies in mechanical engineering;
6. Approval for admission by the Department of Ocean and Mechanical Engineering. Usually, an applicant admitted will have a strong record of achievement that exceeds the minimum requirements. It is anticipated almost every applicant will already have a master's degree, but it is not an absolute requirement. Approval for admission by the department will be based on an evaluation of the student's record in terms of likelihood of success in the Ph.D. program.

Admission to doctoral studies does not constitute admission to candidacy for the degree.

Admission to Doctoral Status

Admission to doctoral status is granted after students have:

1. Successfully completed General Examination 1;
2. Been accepted by a department faculty member willing to serve as their dissertation advisor;
3. Had their plan of coursework approved by their advisor, by the department graduate coordinator and by the Graduate College.

Admission to Candidacy

Admission to candidacy requires formulation of a supervisory committee approved by the department graduate coordinator as well as successful completion of General Examination 1.

Degree Requirements

A central requirement for the Ph.D. degree in Mechanical Engineering is submission and defense of a dissertation based upon original research in an area of focus acceptable to the student's supervisory committee. The completed dissertation must be approved by the committee, the department chair and the Graduate College. Additional requirements are:

1. A minimum of 51 credits of coursework beyond the baccalaureate degree, or 21 credits beyond the master of science degree;
2. No more than 3 credits of directed independent study may be used to satisfy the minimum 21 credits of coursework;

3. A minimum of 12 credits must be in Mechanical Engineering courses, including **two** of the following three core courses. **In addition, a graduate level Engineering Mathematics course is required, which may include but not limited to, EOC 5172 Mathematical Methods in Ocean Engineering 1 or PHZ 5115 Mathematical Physics. EGM 6533, Advanced Strength of Materials; EML 6223, Mechanical Vibrations or EML 6930, Special Topics (Control); and EML 6716, Advanced Fluid Dynamics;**

Core courses (Choose two of the three courses below)
1. EGM 6533 Advanced Strength of Materials
2. EML 6726 Advanced Fluid Dynamics
3. EML 6233 Mechanical Vibrations or EML 6317 Advanced Control Systems
Mathematics
4. One Engineering Mathematics Course (Graduate Level)

4. Doctoral thesis research of not less than 33 credits;

5. Successful completion of General Examination 1;

6. Successful completion of General Examination 2;

7. Submitted and defended a dissertation based on original research in the student's area of specialization. The supervisory committee, the department chair and the Graduate College must have approved the dissertation;

8. Satisfaction of all University regulations and requirements for the Ph.D. degree;

9. **General Examination 1:** After the completion of ~~three~~ **two** Mechanical Engineering core courses and two elective courses, the student will be required to take a General Examination 1, or Ph.D. Qualifying Exam. The primary purpose of General Examination 1 is to evaluate the student's ability, not only to demonstrate a thorough knowledge of Mechanical Engineering course material, but to evaluate original thinking. The written examination will be in four parts: One covering the **two** core courses **and an elective treated as a core course**, one covering **other** elective subjects, one covering Mathematics, and one is a review and analysis of a research paper. The exam on the ~~three~~ **two** core courses **and the elective core course** will be three hours in duration and will require three problems to be answered. The electives exam will be a ~~two-hour~~ **one-hour** exam and will require one problem ~~from two elective courses~~ to be answered. The exam on Engineering Mathematics will be a two-hour exam and the student must answer two problems. The research paper exam will be a two-day take home exam requiring the student to answer questions on a specific research paper. A new set of examinations will be prepared and questions and problems from previous examinations are not available to students. It is expected that the examination on the elective courses will focus on the student's area of specialization;

An overall grade of 70 percent on each and every part of the written examination is passing. Students who score below 70 percent on certain parts of the written examination are given the option of re-taking exams on areas in which they scored less than 70 percent before the beginning of the next semester. The student must score 70 percent in each subject that is retaken. Alternatively the student may retake the entire exam when it is next offered. There would only be one opportunity to retake all or part of the exam. General Examination 1 is scheduled immediately after the last day of the final examination period in the fall semester and in the spring semester each year.

10. For students who have obtained the M.S. in Mechanical Engineering at FAU, General Examination 1 must be taken no later than the beginning of the third semester of Ph.D. study or at the first opportunity it is offered thereafter. Those admitted to the Ph.D. program directly after the B.S. degree may take the examination after completing 24 credits of graduate coursework. For students not so previously enrolled, the exam must be taken by the beginning of the fourth semester or as soon as it is offered thereafter;