FLORIDA ATLANTIC UNIVERSITY

NEW/CHANGE PROGRAM REQUEST
Graduate Programs

UGPC Approval _____
UFS Approval _____
Banner Posted _____
Catalog _____

Department Ocean & Mechanical Engineering

College Engineering and Computer Science

Program Name
Ocean and Mechanical Engineering PhD programs

☐ **New Program**

☑ **Change Program**

Effective Date
(TERM & YEAR)
Fall 2019

Please explain the requested change(s) and offer rationale below or on an attachment

This proposal is to update the degree requirements for the PhD programs in the Ocean and Mechanical Engineering department. Prior to defense, doctoral candidates are required to have published or have accepted for publication a refereed research paper in the field of study as deemed acceptable by the dissertation committee. Journal article is preferred, but peer reviewed conference paper is also acceptable.

The proposal has been approved by the Department's Faculty.

Faculty Contact/Email/Phone

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Consult and list departments that may be affected by the change(s) and attach documentation

This change does not affect any other Department.

Approved by	***Date***
Department Chair	11-19-18
College Curriculum Chair	11/19/18
College Dean	11/20/2018
UGPC Chair	
UGC Chair	
Graduate College Dean	
UFS President	
Provost	

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.

GRADUATE COLLEGE

NOV 26 2018

Received

Doctoral Program

Doctor of Philosophy with Major in Ocean Engineering

Degree Requirements
The degree of Doctor of Philosophy in Ocean Engineering will be conferred on candidates who have fulfilled the following requirements:

1. Completed 54 credits of course and dissertation work after the M.S. degree (84 credits for those admitted to the Ph.D. directly after the B.S. degree). Of the 54 credits, 21 credits must be coursework;

2. Of the 21-credit minimum of coursework, at least 12 credits must be from the Ocean, Mechanical*, Civil* or Geomatics* Engineering programs. No more than 3 credits of directed independent study may be used to satisfy the 21-credit minimum;

3. A minimum of 33 dissertation credits. No more than 39 dissertation credits may be counted toward the total credit requirement for the Ph.D. degree;

4. A major program of research and advanced studies in ocean engineering;

5. Unless otherwise stated, a minimum of 9 credits in advanced mathematics or equivalent beyond the B.S. degree;

6. Successful completion of General Examination 1, a written comprehensive examination of coursework;

7. Successful completion of General Examination 2, a dissertation proposal defense;

8. Prior to the defense, the student is required to have published or have accepted for publication a refereed research paper in the field of study as deemed acceptable by the dissertation committee. Journal article is preferred, but peer reviewed conference paper is also acceptable;

~~8~~9. 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;

~~9~~10. Complied with the University's Graduate Policies and Regulations and satisfied the University's Graduate Degree Requirements.

Doctor of Philosophy with Major in Mechanical Engineering

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.

Core courses (select two of the following three courses)		
Advanced Strength of Materials	EGM 6533	3
Advanced Fluid Dynamics	EML 6726	3
Mechanical Vibrations	EML 6223 **or**	3
Advanced Control Systems	EML 6317	3
Mathematics		
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. Prior to the defense, the student is required to have published or have accepted for publication a refereed research paper in the field of study as deemed acceptable by the dissertation committee. Journal article is preferred, but peer reviewed conference paper is also acceptable;

~~7~~8. 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~~9. Satisfaction of all University regulations and requirements for the Ph.D. degree;

~~9~~10. **General Examination 1:** After the completion of three 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 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 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~~11. 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;

~~11~~12. **General Examination 2:** At an appropriate point in the student's graduate studies, normally within 12 months of passing General Exam 1, the student must complete General Examination 2. This is the dissertation proposal defense, in which students defend the choice of a dissertation topic and answer a series of questions on fundamental issues related to their research topic. Students must have passed General Examination 1, selected the dissertation topic, formed a supervisory committee and completed a literature survey prior to the dissertation proposal defense;

In General Examination 2, students should be prepared to demonstrate the ability to perform research on a topic approved by the supervisory committee by presenting a comprehensive literature survey combined with a critical analysis of the state of the art in the particular field. While this examination will be centered around the particular research area, it will not necessarily be limited to that subject. If unsuccessful in the examination, the student may, at the discretion of the department, either remain in the doctoral program and retake the examination at a later date or withdraw from the program. No more than two attempts will be permitted.