

 FLORIDA ATLANTIC UNIVERSITY	NEW/CHANGE PROGRAM REQUEST Graduate Programs		UGPC Approval _____ UFS Approval _____ Banner Posted _____ Catalog _____
	Department Ocean and Mechanical Engineering College Engineering and Computer Science		
Program Name PhD in Ocean Engineering, PhD in Mechanical Engineering		<input type="checkbox"/> New Program <input checked="" type="checkbox"/> Change Program	Effective Date (TERM & YEAR) <p style="text-align: center;">Spring 2020</p>
Please explain the requested change(s) and offer rationale below or on an attachment This proposal requests changing the minimum number of credits of the PhD program from 84 to 72. Students entering the PhD program with a master's degree (which counts as 30 credits) will be required to take a minimum of 18 credits of graduate course work (reduced from 21 credits) and a minimum of 24 dissertation credits (reduced from 33 credits). This reduction in the number of credits will not impact the quality of the PhD program, while reducing the student cost.			
Faculty Contact/Email/Phone Dr. Francisco Presuel-Moreno, fpresuel@fau.edu, 954.924.7236		Consult and list departments that may be affected by the change(s) and attach documentation <p style="text-align: center;">None</p>	
Approved by Department Chair <u>Manuel Chaves</u> College Curriculum Chair <u>Dr. Ralp.</u> College Dean <u>M. Candee</u> UGPC Chair _____ UGC Chair _____ Graduate College Dean _____ UFS President _____ Provost _____		Date <u>7/7/2019</u> <u>10/8/2019</u> <u>10/15/2019</u> _____ _____ _____ _____	

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.

Ocean Engineering

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 a minimum of 42 54 credits of course and dissertation work after the M.S. degree for students transferring 30 credits (84-72 credits for those admitted to the Ph.D. directly after the B.S. degree). Of the 54 42 credits, 24-18 credits must be coursework;
2. Of the 24-18-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 24-18-credit minimum;
3. A minimum of 33 24 dissertation credits. No more than 39 30 dissertation credits may be counted toward the total credit requirement for the Ph.D. degree; Students admitted to the Ph.D. directly after the B.S. degree must take a minimum of 30 dissertation credits;
4. Must complete two semesters of EML 5937, Graduate Seminar (0 credits) with grade of Satisfactory ("S").
5. A major program of research and advanced studies in ocean engineering;
6. Unless otherwise stated, a minimum of 9 credits in advanced mathematics or equivalent beyond the B.S. degree;
7. Successful completion of General Examination 1, a written comprehensive examination of coursework;
8. Successful completion of General Examination 2, a dissertation proposal defense;
9. Prior to the defense, the student is required to have published or have accepted for publication a refereed research paper in a field of study deemed acceptable by the dissertation committee. A journal article is preferred, but a peer-reviewed conference paper is also acceptable;
10. 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;
11. Complied with the University's Graduate Policies and Regulations and satisfied the University's Graduate Degree Requirements.

* Only available for the Sustainable Infrastructure Engineering option.

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Core Course Requirements

All graduate students, regardless of option or specialty, must complete the following core courses or must offer a satisfactory substitute course of similar content from another university or an appropriate substitute consistent with the student's specialty preference for approval by the supervisory committee.

Core Courses - 15 credits <i>Select 9 credits from the following</i>	
Mathematical Methods in Ocean Engineering 1	EOC 5172
Engineering Data Analysis	EOC 6635
Physical Aspects of Oceanography	OCP 6050 or*
Offshore Structures [‡]	EOC 6431

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<i>In addition, two of the following courses must be taken:</i>	
Advanced Hydrodynamics 1	EOC 6185
Corrosion 1	EOC 6216C
Engineering Principles of Acoustics	EOC 6317C
Special Topics	EOC 6934
Advanced Strength of Materials* or	EGM 6533 or
Advanced Mechanics of Materials*	CES 6107
Introduction to Finite Element Methods* or	EGM 5351 or
Finite Element Methods in Civil Engineering*	CES 6119
Infrastructure Maintenance and Management*	CGN 6616
Special Topics ²	CGN 6930
Electives - 6 3 credits (for students entering with a master's degree)	
Select 6 3 credits at the 5000 or 6000 level from the College of Engineering and Computer Science or the College of Science	
Electives - 36 credits (for students entering with a bachelor's degree)	
Select 36 credits at the 5000 or 6000 level from the College of Engineering and Computer Science or the College of Science. Complete a minimum of 18 credits at the 6000 level and no more than 9 credits of Directed Independent Study (EOC 6908).	
Dissertation - 33 24 credits (minimum) (for students entering with a master's degree)	
Dissertation (may be taken over multiple terms)	EOC 7980

* Only available for the Sustainable Infrastructure Engineering option.

B.S. to Ph.D. Program

A student with outstanding scholastic achievement who holds only a baccalaureate degree (B.S.) may be admitted directly to the Ph.D. program in Ocean Engineering. The student with a B.S. will be required to complete a total of **84 72** credits of course and dissertation work for the Ph.D. Out of the minimum of 42 credits of graduate coursework, at least 18 27 of the credits must be taken from the Ocean Engineering list of courses, and all core course requirements must be satisfied. A minimum of **33 30** credits of doctoral dissertation research will be required. No more than 39 dissertation credits may be counted toward the **84 72**-credit requirement. The remaining credits may be selected from the listing of OE courses, advanced mathematics courses, elective courses, directed independent study (DIS) or dissertation. A minimum of 9 credits of graduate-level mathematics must be satisfied.

Mechanical Engineering

DOCTORAL PROGRAM

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.

A minimum of 72 graduate credits is required beyond a bachelor's degree. A master's degree in a related field is considered equivalent to 30 credits. Additional requirements are:

1. A minimum of **54 42** credits of coursework beyond the baccalaureate degree, or a minimum of 18 24 credits beyond the master of science degree;

2. No more than 3 credits of directed independent study may be used to satisfy the minimum ~~24~~ 18 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. Must complete two semesters of EML 5937, Graduate Seminar (0 credits) with grade of Satisfactory ("S").

5. Doctoral thesis research of ~~not less than 33~~ at least 24 credits for students entering with a master's degree, and at least 30 credits for students entering with a bachelor's degree;

6. Successful completion of General Examination 1;

7. Successful completion of General Examination 2;

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

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;

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