

## Academic Programs – Ocean Engineering Program

The program objectives and outcomes should be changed to the following text (where the text in red indicates the change)

### Ocean Engineering Program Educational Objectives

Graduates of the ocean engineering baccalaureate program at the Florida Atlantic University, within a few years after graduation, will:

1. Demonstrate the ability to carry out engineering tasks in the multi-disciplinary field of ocean engineering.
2. Make meaningful contributions in terms of design, development and integration of engineering systems, particularly for applications in the ocean environment.
3. Pursue further study for the graduate degree and/or participate in professional societies.
4. Develop and exhibit leadership qualities in their engineering work.
5. Understand various complexities and issues of the contemporary society and make professional contributions in the larger and long-term interest of the society.

### Educational Outcomes for Student Performance

The program will meet the above objectives by establishing the following educational outcomes for student performance. At the time of graduation, the students will attain the following:

- a. An ability to apply knowledge of mathematics, science, and engineering
- b. An ability to design and conduct experiments, as well as analyze and interpret data
- c. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- d. An ability to function on multidisciplinary teams
- e. An ability to identify, formulate, and solve engineering problems
- f. An understanding of professional and ethical responsibility
- g. An ability to communicate effectively
- h. The broad education necessary to understand the impact of engineering solutions in a global, economic, and societal context
- i. A recognition of the need for, and an ability to engage in lifelong learning
- j. A knowledge of contemporary issues
- k. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

The table of courses in the Ocean Engineering Core should be changed to the following. The changes consist of: 1) the Electronics I EEE3300 (4 credit hours) is replaced by Electro-Mechanical Devices EGM 4045 (3 credit hours), 2) the 2 Non-Required Elective courses are no longer offered, and should be removed.

Ocean Engineering Core		
Introduction to Logic Design	CDA 3201C	4
Circuits 1	EEL 3111	3
<b>Electro-Mechanical Devices</b>	<b>EGM 4045</b>	<b>3</b>
Fundamentals of Engineering	EGN 1002	3
Statics	EGN 3311	3
Dynamics	EGN 3321	3
Strength of Materials	EGN 3331	3
Engineering Thermodynamics	EGN 3343	3
Engineering Materials 1	EGN 3365	3
Fabrication of OE Systems	EOC 2801	1
Vibrations	EOC 3114	3
Fluid Mechanics 1	EOC 3123	4
Ocean Engineering Lab	EOC 3130L	3
Materials 1 – Marine Topics	EOC 3213	1
Acoustics 1	EOC 3306	3
Structural Analysis 1	EOC 3410C	3
Ocean Engineering Systems Control and Design	EOC 4804	3
Ocean Engineering Systems Control and Design Project	EOC 4804L	4
Ocean Thermal Systems	EOC 4193	3
Ocean Wave Mechanics	EOC 4422	3
Dynamic Systems	EGN4432	3
Ocean and Environmental Data Analysis	EOC 4631C	3
Choose two of the following four courses:		
Structural Analysis 2	EOC 4412	4
Fluid Mechanics 2	EOC 4124	4
Acoustics 2	EOC 4307C	4
Engineering Materials 2	EOC 4201C	4

Non-Engineering Core (grade of "C" or higher required)		
Engineering Math 1	MAP 3305	3
Engineering Math 2	MAP 4306	3
C for Engineers	EEL 2161	3

Engineering Graphics	EGS 1111C	3
Oceanography	OCE 3008	3

Non-Required Electives		
<del>Professional Development</del>	<del>EOC 2902</del>	<del>1</del>
<del>Ocean Engineering Diving</del>	<del>EOC 2131C</del>	<del>1</del>

**The sample four-year program of study for BSOE should be changed to the following. The only change consists of: the Electronics I EEE3300 (4 credit hours) is replaced by Electro-Mechanical Devices EGM 4045 (3 credit hours).**

First Year, Fall (14 credits)		
College Writing 1	ENC 1101*	3
Engineering Chemistry 1 or General Chemistry I	EGN 2095 or CHM 2045	3
Engineering Chemistry 1 Lab or General Chemistry 1 Lab	EGN 2095L or CHM2045L	1
Calculus for Engineers 1	MAC 2281	4
Fundamentals of Engineering	EGN 1002	3

First Year, Spring (14 credits)		
College Writing 2	ENC 1102*	3
Oceanography	OCE 3008	3
Physics for Engineers 1	PHY 2043	3
General Physics 1 Lab	PHY 2048L	1
Calculus for Engineers 2	MAC 2282	4

First Year, Summer (10 credits)		
Calculus with Analytic Geometry 3	MAC 2313	4
Engineering Graphics**	EGS 1111C	3
<a href="#">Foundations of Society and Human Behavior course</a>		3

Second Year, Fall (14 credits)		
Engineering Math 1	MAP 3305	3
Physics for Engineers 2	PHY 2044	3
General Physics 2 Lab	PHY 2049L	1
Statics	EGN 3311	3
C for Engineers	EEL 2161	3

Second Year, Spring (13 credits)		
Dynamics	EGN 3321	3
Engineering Thermodynamics	EGN 3343	3
Fabrication of OE Systems	EOC 2801	1
Ocean Engineering Lab	EOC 3130L	3
Engineering Math 2	MAP 4306	3

Second Year, Summer (9 credits)		
Circuits 1	EEL 3111	3
<a href="#">Foundations of Global Citizenship course*</a>		3
<a href="#">Foundations of Creative Expressions course</a>		3

Third Year, Fall (15 credits)		
Dynamic Systems	EGN 4432	3
Strength of Materials	EGN 3331	3
Engineering Materials 1	EGN 3365	3
Introduction to Logic Design	CDA 3201	4
<a href="#">Foundations of Society and Human Behavior course</a>		3

Third Year, Spring (13 credits)		
Acoustics I	EOC 3306	3
Fluid Mechanics 1	EOC 3123	4
Ocean Thermal Systems	EOC 4193	3
Structural Analysis 1	EOC 3410C	3

[Top](#)

Third Year, Summer (9 credits)		
Electro-Mechanical Devices	EGM 4045	3
<a href="#">Foundations of Global Citizenship course</a>		3
<a href="#">Foundations of Creative Expressions course*</a>		3

Fourth Year, Fall at SeaTech Campus (13 credits)		
Ocean Systems Control and Design	EOC 4804	3
Vibrations	EOC 3114	3
Ocean and Environmental Data Analysis	EOC 4631C	3
Materials 1 - Marine Topics	EOC 3213	1
Ocean Wave Mechanics	EOC 4422	3

Fourth Year, Spring at SeaTech Campus (12 credits)		
Ocean Engineering Systems Control and Design Project	EOC 4804L	4
Fluid Mechanics 2***	EOC 4124	4
Engineering Materials 2***	EOC 4201C	4
Acoustics 2***	EOC 4307C	4
Structural Analysis 2***	EOC 4412	4
Total		136

In the following we are removing the Electronics I (EEE 3300, 4 credit hours) course from our course description, and replacing it with the Electro-Mechanical Device (EGM 4045, 3 credit hours)

**UNDERGRADUATE COURSES/[LINK TO GRADUATE COURSES](#)**

**Introduction to Logic Design (CDA 3201C) 4 credits**

*[\(See Computer Science and Computer Engineering courses, this section\)](#)*

~~**Electronics 1 (EEE 3300) 4 credits**~~

**Electro-Mechanical Device (EGM 4045) 3 credits**

**C for Engineers (EEL 2161 ) 3 credits**

**Circuits 1 (EEL 3111) 3 credits**

Replace the following course description

**Dynamic Systems (EOC 4620) 3 credits**

*Prerequisite: EOC 3114, EEL 2161*

Course examines mathematical modeling of dynamic systems, linear systems analysis in the time and frequency domains, and analysis and design of control systems.

Students are also exposed to practical control implementation issues through real time control experiments.

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**Dynamic Systems (EGN 4432) 3 credits**

*Prerequisite: EGN 3321 - Dynamics or equivalent, EEL 2161 C for Engineers, MAP 3305 – Engineering Mathematics I*

To acquaint Ocean and Mechanical Engineering students with basic knowledge about dynamic systems, systems stability analysis and basic controller design

<p><b>Approved by:</b></p> <p>Department Chair: <u>Zawad Jafari</u></p> <p>College Curriculum Chair: <u>[Signature]</u></p> <p>College Dean: <u>[Signature]</u></p> <p>UUPC Chair: <u>[Signature]</u></p> <p>Undergraduate Studies Dean: <u>[Signature]</u></p> <p>UFS President: _____</p>	<p><b>Date:</b></p> <p><u>10/22/13</u></p> <p><u>11/26/2013</u></p> <p><u>12/4/2013</u></p> <p><u>12/16/13</u></p> <p><u>12/12/13</u></p> <p>_____</p> <p>_____</p>	<p>1. Syllabus must be attached; syllabus checklist recommended; see guidelines and checklist: <a href="http://www.fau.edu/academic/registrar/UUPCinfo">www.fau.edu/academic/registrar/UUPCinfo</a></p> <p>2. Review Provost Memorandum: Definition of a Credit Hour <a href="http://www.fau.edu/provost/files/Definition_Credit_Hour_Memo_2012.pdf">www.fau.edu/provost/files/Definition_Credit_Hour_Memo_2012.pdf</a></p> <p>3. WAC approval (attach if necessary)</p> <p>4. Gen. Ed approval (attach if necessary)</p> <p>5. Consent of affected departments (attach if necessary)</p>
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