

 FLORIDA ATLANTIC UNIVERSITY	NEW/CHANGE PROGRAM REQUEST Undergraduate Programs	UUPC Approval <u>2/27/23</u> UFS Approval _____ Banner Posted _____ Catalog _____
	Department Ocean and Mechanical Engineering College Engineering and Computer Science	
Program Name Ocean Engineering	<input type="checkbox"/> New Program <input checked="" type="checkbox"/> Change Program	Effective Date (TERM & YEAR) Fall 2023
Please explain the requested change(s) and offer rationale below or on an attachment 1. Addition of a Credit-Earning Internship (IDS 3949) as part of the junior technical elective. This gives students an option to complete their degrees on time while having an opportunity to gain internship experiences 2. Programming Course Change. EEL 2161 (C for Engineers, 3 credit hours) will be dropped from the existing curriculum, and replaced with EGN 2213 (Computer Applications in Engineering 1, 3 credit hours).		
Faculty Contact/Email/Phone P. Edgar An/pan@fau.edu/561-297-2792	Consult and list departments that may be affected by the change(s) and attach documentation EECS	
Approved by Department Chair <u>Pierre Philippe Beaujean</u> College Curriculum Chair <u>Hongbo Su</u> College Dean _____ UUPC Chair <u>Ethlyn Williams</u> Undergraduate Studies Dean <u>Dan Meeroff</u> UFS President _____ Provost _____	Date <u>1/30/2023</u> <u>02/09/2023</u> <u>2/9/23</u> <u>2/27/23</u> <u>2/27/23</u> _____ _____	

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

MEMORANDUM

TO: UUPC
FROM: P. Edgar An, Department of Ocean and Mechanical Engineering
SUBJECT: Requested Ocean Engineering Curricular Changes
DATE: 30 January 2023

1. Addition of a Credit-Earning Internship

The OE Program is proposing a vetted engineering internship, with no less than 135 hours over the course of a semester, to be counted as a Junior Technical Elective (3 credit hours). Currently, OE students can choose one of two courses as the junior technical elective: Finite Element Analysis (EGM 4350) or Innovative Sensing and Actuation Technologies (and EGN 4670C). With the proposed changes, students will have an additional option to satisfy the junior elective requirement; see the list below.

Junior Technical Elective (3 Credit Hours, choose one of the following options)

1. Innovative Sensing and Actuation Technologies (EGN 4670C, 3 credit hours, elective)
2. Finite Element Analysis (EGM 4350, 3 credit hours, elective)
3. **IDS 3949 Professional Internship (3 credit hours, elective)**

IDS 3949 is an existing professional internship course run by the FAU Career Center. It is a fully online course and is offered on a semester basis (spring, summer, or fall). Students must first secure an internship prior to enrolling in IDS 3949. Through this course, the Career Center acts as a liaison between a pre-approved employer and the student, checking the student's eligibility for pursuing an internship. Faculty are not required to evaluate each student's internship case although faculty can choose to do so via the Advising Office.

2. Programming Course Change

The OE Program is proposing to drop EEL 2161 (C for Engineers, 3 credit hours) from its existing curriculum, and replace it with EGN 2213 (Computer Applications in Engineering 1, 3 credit hours).

University Catalog Changes

Ocean Engineering Core		
C for Engineers	EEL 2161	3
Computer Applications in Engineering I	EGN 2213	3
Electro-Mechanical Devices	EGM 4045	3
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
Vibration Synthesis and Analysis	EGN 4323	3
Dynamic Systems	EGN 4432	3
Fabrication of OE Systems	EOC 2801	1
Ocean Engineering Fluid Mechanics	EOC 3123	4
Ocean Engineering Lab	EOC 3130L	3
Materials 1 – Marine Topics	EOC 3213	1
Acoustics for Ocean Engineers	EOC 3306	3
Structural Analysis	EOC 3410C	3
Ocean Thermal Systems	EOC 4193	3
Ocean Wave Mechanics	EOC 4422	3
Ocean and Environmental Data Analysis	EOC 4631C	3
RI: Ocean Engineering Systems Control and Design	EOC 4804	3
RI: Ocean Engineering Systems Control and Design Laboratory	EOC 4804L	4
Choose one of the following <i>three</i> junior elective courses:		
Innovative Sensing and Actuation Technology	EGN 4670C	3
Finite Element Analysis for Engineering Design	EGM 4350	3
Professional Internship	IDS 3949	3
Choose two of the following <i>four</i> courses:		
Ocean Structures	EOC 4412	3
Ship Hydrodynamics	EOC 4124	3
Underwater Acoustics	EOC 4307C	3
Marine Materials and Corrosion	EOC 4201C	3

First Year, Fall (14 credits)		
College Writing 1*	ENC 1101	3
General Chemistry 1	CHM 2045	3
General Chemistry 1 Lab	CHM 2045L	1
Calculus with Analytic Geometry 1	MAC 2311	4
Fundamentals of Engineering	EGN 1002	3

First Year, Spring (14 credits)		
College Writing 2*	ENC 1102	3
Oceanography	OCE 3008	3
General Physics for Engineers 1	PHY 2048	3
General Physics 1 Lab	PHY 2048L	1
Calculus with Analytic Geometry 2	MAC 2312	4

First Year, Summer (7 credits)		
Calculus with Analytic Geometry 3	MAC 2313	4
Foundations of Humanities course		3

Second Year, Fall (13 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
Computer Applications in Engineering I	EGN 2213	3

Second Year, Spring (15 credits)		
Engineering Graphics***	EGN 1111C	3
Dynamics	EGN 3321	3
Strength of Materials	EGN 3331	3
Engineering Thermodynamics	EGN 3343	3
Ocean Engineering Lab	EOC 3130L	3

Second Year, Summer (6 credits)		
Electro-Mechanical Devices	EGM 4045	3
Foundations of Humanities course*		3

Third Year, Fall (13 credits)		
Engineering Materials 1	EGN 3365	3
Vibrations Synthesis and Analysis	EGN 4323	3
Ocean Engineering Fluid Mechanics	EOC 3123	4
Foundations of Global Citizenship course*		3

Third Year, Spring (13 credits)		
Dynamic Systems	EGN 4322	3
Fabrication of Ocean Engineering Systems	EOC 2801	1
Acoustics for Ocean Engineers	EOC 3306	3
Structural Analysis	EOC 3410C	3
Ship Hydrodynamics	EOC 4124	3 or
Marine Materials and Corrosion	EOC 4201C	3

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Third Year, Summer (6 credits)		
Foundations of Global Citizenship course		3
Foundations of Society and Human Behavior course		3

Fourth Year, Fall (13 credits)		
Materials 1 - Marine Topics	EOC 3213	1
Ocean Thermal Systems	EOC 4193	3
Ocean Wave Mechanics	EOC 4422	3
Ocean and Environmental Data Analysis	EOC 4631C	3
RI: Ocean Engineering Systems Control and Design	EOC 4804	3

Fourth Year, Spring (13 credits)		
Finite Element Analysis for Engineering Design	EGM 4350	3 or
Innovative Sensing and Actuation Technologies	EGN 4670C	3 or
Professional Internship	IDS 3949	3
Underwater Acoustics****	EOC 4307C	3 or
Ocean Structures****	EOC 4412	3
RI: Ocean Engineering Systems Control and Design Laboratory	EOC 4804L	4
Foundations of Society and Human Behavior course		3
Total		127

* WAC (Gordon Rule) course.

** Engineering Graphics should typically be taken at FAU.

*** Choose one course from these two courses.

**** Choose two courses from these four senior elective courses.