

 <b>FLORIDA ATLANTIC UNIVERSITY</b>	<b>NEW/CHANGE PROGRAM REQUEST</b> <b>Undergraduate Programs</b>		UUPC Approval <u>4/24/23</u> UFS Approval _____ Banner Posted _____ Catalog _____
	Department Ocean & Mechanical Engineering College Engineering & Computer Science		
Program Name Ocean Engineering	<input type="checkbox"/> New Program <input checked="" type="checkbox"/> Change Program	Effective Date (TERM & YEAR) Fall 2023	
<p><b>Please explain the requested change(s) and offer rationale below or on an attachment</b></p> <p>Addition of Directed Independent Research (DIR, EGN 4915) as part of the junior technical elective. This gives students an option to earn a UG research certificate without taking extra credit hours.</p>			
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	
<b>Approved by</b> Department Chair <u>Pierre Philippe Beaujean</u> College Curriculum Chair <u>Hongbo Su</u> College Dean _____ UUPC Chair <u>Eblyn Williams</u> Undergraduate Studies Dean <u>Dan Meeroff</u> UFS President _____ Provost _____		<b>Date</b> <u>4/6/2023</u> <u>04/10/2023</u> <u>04/12/2023</u> <u>4/24/23</u> <u>4/24/23</u> _____ _____	

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



COLLEGE OF ENGINEERING & COMPUTER SCIENCE  
Department of Ocean and Mechanical Engineering  
777 Glades Road, EG 190  
Boca Raton, FL 33431  
561.297.3430, fax: 561.297.3885  
*ome.fau.edu*

## MEMORANDUM

**TO:** UUPC  
**FROM:** P. Edgar An, Department of Ocean and Mechanical Engineering  
**SUBJECT:** Requested Ocean Engineering Curricular Changes  
**DATE:** April 6, 2023

### **1. Addition of a Directed Independent Research (EGN 4915)**

The OE Program is proposing to add Directed Independent Research (EGN 4915, 3 credit hours) to the Junior Technical Elective course list. Currently, OE students can choose one of three courses as the junior technical elective: Finite Element Analysis (EGM 4350) or Innovative Sensing and Actuation Technologies (EGN 4670C), and IDS 3949 Internship. With the proposed change, students will have the opportunity to earn the UG research certificates without taking extra credits.

#### 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 Internship (3 credit hours, elective)
4. **EGN 4915 (Directed Independent Research)**

## University Catalog Changes

<b>Ocean Engineering Core</b>		
Computer Applications in ME 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
<b>Choose one of the following <i>four</i> junior elective courses:</b>		
Innovative Sensing and Actuation Technology	EGN 4670C	3
Finite Element Analysis for Engineering Design	EGM 4350	3
Internship	IDS 3949	3
<b>Directed Independent Research</b>	<b>EGN 4915</b>	<b>3</b>
<b>Choose two of the following <i>four</i> courses:</b>		
Ocean Structures	EOC 4412	3
Ship Hydrodynamics	EOC 4124	3
Underwater Acoustics	EOC 4307C	3
Marine Materials and Corrosion	EOC 4201C	3

<b>First Year, Fall (14 credits)</b>		
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

<b>First Year, Spring (14 credits)</b>		
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

<b>First Year, Summer (7 credits)</b>		
Calculus with Analytic Geometry 3	MAC 2313	4
<a href="#">Foundations of Humanities course</a>		3

<b>Second Year, Fall (13 credits)</b>		
Engineering Math 1	MAP 3305	3
Physics for Engineers 2	PHY 2044	3
General Physics 2 Lab	PHY 2049L	1
Statics	EGN 3311	3
<b>Computer Applications in ME I</b>	<b>EGN 2213</b>	<b>3</b>

<b>Second Year, Spring (15 credits)</b>		
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

<b>Second Year, Summer (6 credits)</b>		
Electro-Mechanical Devices	EGM 4045	3
<a href="#">Foundations of Humanities course*</a>		3

<b>Third Year, Fall (13 credits)</b>		
Engineering Materials 1	EGN 3365	3
Vibrations Synthesis and Analysis	EGN 4323	3
Ocean Engineering Fluid Mechanics	EOC 3123	4
<a href="#">Foundations of Global Citizenship course*</a>		3

<b>Third Year, Spring (13 credits)</b>		
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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<b>Third Year, Summer (6 credits)</b>	
<a href="#">Foundations of Global Citizenship course</a>	3
<a href="#">Foundations of Society and Human Behavior course</a>	3

<b>Fourth Year, Fall (13 credits)</b>		
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

<b>Fourth Year, Spring (13 credits)</b>		
Finite Element Analysis for Engineering Design	EGM 4350	3 or
Innovative Sensing and Actuation Technologies	EGN 4670C	3 or
Internship	IDS3949	3 or
<b>Directed Independent Research</b>	<b>EGN4915</b>	<b>3</b>
Underwater Acoustics****	EOC 4307C	3 or
Ocean Structures****	EOC 4412	3
RI: Ocean Engineering Systems Control and Design Laboratory	EOC 4804L	4
<a href="#">Foundations of Society and Human Behavior course</a>		3
<b>Total</b>		<b>127</b>

\* 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.