FLORIDA ATLANTIC UNIVERSITY

NEW/CHANGE PROGRAM REQUEST
Graduate Programs

Department Marine Science and Oceanography

College Science

UGPC Approval _____
UFS Approval _____
Banner _____
Catalog _____

Program Name

Master of Science in Marine Science and Oceanography

☐ **New Program***

☑ **Change Program***

Effective Date *(TERM & YEAR)*

Fall 2020

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

Based on our experience in teaching the MS Marine Science and Oceanography over the last three years, and from feedback from students, we would like to make the following changes:

1. Split the existing required course OCE 6057 Biological and Chemical Oceanography into two new required courses OCB 6066 Biological Oceanography and OCE 6050 Chemical Oceanography. The amount of material that needs to be covered is too great for a single three credit course; the individual courses will provide the students with a greater understanding of these fundamental oceanography subjects.
2. Change the existing required colloquium GEO 6920 to a new required colloquium course OCE 6922 Marine Science and Oceanography Colloquium. The new course will be crafted to provide appropriate and specific material for students in the Marine Science and Oceanography program.
3. The changes listed above increases the required component to 10 credits, consequently we will reduce the number of elective credits to 15-21 for thesis track
4. We will remove the requirement that at least one elective be selected from each of four core areas; we have found this to be restrictive and problematic for the students. Students will now be able to select any courses from the list approved for the program.
5. We are requesting that we add GLY 6908C Beach Morphodynamics to the list of electives. This course is very relevant to our program and has been requested by the students and faculty.

*All new programs and changes to existing programs must be accompanied by a catalog entry showing the new or proposed changes.

Faculty Contact/Email/Phone

Peter McCarthy/6-2632/pmccart5@fau.edu

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

Approved by		*Date*
Department Chair		2/24/2020
College Curriculum Chair	2020.03.06 11:39:33 -05'00'	
College Dean	William David Kalie	March 9, 2020
UGPC Chair	Paul R. Poluso	03/27/2020
UGC Chair	Paul R. Poluso	03/27/2020
Graduate College Dean	Digitally signed by member: 8ED423C9-A9FA-4DA0-B0B9-C422E945C5E7 7852D92B-2334-43D3-B364-BB8C8A5BEE19 Date: 2020.03.30 16:50:33 -04'00'	
UFS President		
Provost		

Email this form and attachments to UGPC@fau.edu 10 days before the UGPC meeting.

Curriculum Information	
Current Program	
Master of Science	
Program:	Master of Science in Marine Science and Oceanography
College:	C.E. Schmidt College of Science
Major:	Marine Science and Oceanography

Master of Science with Major in Marine Science and Oceanography

This is an interdisciplinary program designed to provide students with specialized training in Marine Science and Oceanography jointly administered by the Charles E. Schmidt College of Science and Harbor Branch Oceanographic Institute. Participating faculty have appointments at HBOI and the College of Science.

Students are required to take most of the coursework spread across the core subject areas listed below. The exact courses taken are to be determined by students and their advisory committees. The application deadline is January 15 for the fall semester and October 15 for the spring semester.

Admissions Requirements

In addition to meeting all of the University and College admission requirements for graduate study, each applicant for the M.S. MSO program must:

1. Have a minimum of 3.0 GPA (B or better average) on the last 60 hours of undergraduate credits, or established graduate level proficiency.
2. Provide two letters of recommendation,
3. Have minimum GRE scores of 151 Verbal and 151 Quantitative for GREs taken during or after August 2011 (or a cumulative score of 1000 on the Verbal and Quantitative portions of the GRE prior to Oct 2011). GRE scores older than 5 years prior to admission will not be accepted.
4. Obtain a "sponsor" from within the faculty of the M.S. MSO program, who will then act as the student's advisor until a thesis topic has been chosen.

For sponsor selection suggestions, go to the departmental web pages to examine the fields and interests of individual faculty. When you find a faculty member in your field of interest, contact them directly. Your application package must contain a signed sponsor form from the faculty member.

Thesis Option

A student curriculum consists of a minimum of 37 credits taken in the following three categories:

Required Courses: ~~Three~~ Four courses (~~7~~ 10 credits) are required of all M.S. MSO students. ~~They should be taken at the beginning of the graduate program.~~

MSO Required Courses		
Physical & Geological Oceanography	~~–~~OCE 6097	3
Biological ~~and Chemical~~ Oceanography	OCB 6050~~E 6057~~	3
Chemical Oceanography	OCE 6050	3
~~Geosciences Colloquium Series~~Marine Science and Oceanography Colloquium	~~GEO 6920~~OCE 6922	1
Total Research Core		~~7~~10

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~~*Core Subject Areas and*~~ *Electives:* ~~18~~15~~-24~~-21 credits from the ~~core subject areas and~~approved ~~electives,~~course list ~~with at least one course from each of four different core subject areas~~. Up to 6 credits designated as "Special Topics" courses may be taken with the approval of the Thesis Advisor.

No more than 6 credits of electives taken outside ~~the core areas~~of the approved course list will be counted toward the degree. No courses under the 5000 level may be taken. No more than 3 credits of Directed Independent Research (OCE 6908) may be counted toward this degree.

Thesis: 6 to 12 credits (OCE 6972)

Non-Thesis Option

A student curriculum consists of a minimum of 37 credits taken in the following three categories:

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Biological ~~and Chemical~~ Oceanography	OCB 6066~~E 6057~~	3
Chemical Oceanography	OCE 6050	3
~~Colloquium~~Marine Science and Oceanography Colloquium	~~GEO 6920~~OCE 6922	1
Total Research Core		~~7~~10

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Electives~~Core Subject Areas~~: A minimum of 24 credits from the ~~core subject areas, with at least one course from each of four different core subject areas~~areas approved course list. Up to 6 credits designated as "Special Topics" courses may be taken with the approval of the student's Advisor.

~~*Electives and Directed Independent Study:*~~ No more than 6 credits of electives taken outside ~~the core areas~~the approved course list will be counted toward the degree. No courses under the 5000 level may be taken. No more than 3 credits of Directed Independent Research (OCE 6908) may be counted toward this degree.

~~Core Subject Areas~~	
~~Marine Biology~~	
~~Marine Invertebrate Zoology~~	~~ZOO 6256~~
~~Marine Invertebrate Zoology Lab~~	~~ZOO 6256L~~
~~Biology of Sea Turtles~~	~~ZOO 6406~~
~~Biology of Sharks and Their Relatives~~	~~ZOO 6409~~
~~Natural History of Fishes~~	~~ZOO 6456~~
~~Natural History of Fishes Lab~~	~~ZOO 6456L~~
~~Seminar in Ichthyology~~	~~ZOO 6459~~
~~Histology of Fishes & Aquatic Invertebrates~~	~~ZOO 6757~~
~~Aquatic Animal Health~~	~~PCB 6772~~
~~Physiology of Marine Animals~~	~~PCB 6775~~
~~Advances in Finfish Aquaculture~~	~~BSC 6342~~
~~Marine Molecular Biology~~	~~PCB 6465~~
~~Sensory Biology & Behavior of Fishes~~	~~PCB 6871~~
~~Introduction to Marine Biotechnology~~	~~BSC 6346~~
-	
~~Coastal and Geological Science~~	
~~Marine Global Change~~	~~OCE 6019~~
~~Shore Erosion and Protection~~	~~GLY 5575C~~
~~Marine Geology~~	~~GLY 5736C~~
~~Comparative Carbonate Sedimentology~~	~~GLY 6352~~
~~Coastal Environments~~	~~GLY 6737~~
~~Global Environmental Change~~	~~GLY 6746~~
~~Methods in Hydrogeology~~	~~GLY 6838~~
~~Coastal Hazards~~	~~GLY 6888~~
~~Advanced Topics in Applied, Coastal, and Hydrogeology~~	~~GLY 6934~~
-	
~~Conservation and Ecology~~	

Natural History of the Indian River Lagoon	OCB 6810
Coastal Plant Ecology	BOT 6606
Coastal Plant Ecology Lab	BOT 6606L
Coral Reef Ecosystems	OCB 6266
Coral Reef Ecosystems/Lab	OCB 6266L
Conservation Biology	PCB 6045
Advanced Ecology	PCB 6046
Marine & Estuarine Community Dynamics	PCB 6316
Marine Ecology	PCB 6317
Marine Conservation	BSC 6936
Marine Ecology Lab and Field Studies	PCB 6317L
Biogeography	GEO5305
Restoration Implementation and Management	EVR 6358
Ecological Theory	PCB 6406
Marine Fisheries Ecology and Management	OCB 6715C

Remote Sensing and GIS	
Digital Image Analysis	GIS 5033C
Remote Sensing of the Environment	GIS 5038C
Principles of Geographic Information Systems	GIS 5051C
Applications in Geographic Information Systems	GIS 5100C
Programming in Geographic Information Systems	GIS 5103C
Advanced Remote Sensing	GIS 6039
Topics in Geoinformation Science	GIS 6120
Hyperspectral Remote Sensing	GIS 6127
Underwater Optical Imaging for Marine Scientists	OCE 6267
Marine Optics	OCE 6269
Data Processing for studies & Modeling of Marine Systems	OCB 6673
Image & Video Processing & Vision in Marine Environment	EVS 5385
Ocean Monitoring Systems & Implementation Strategies	OCE 6680

Chemistry	
Chemistry for Environmental Scientists	CHS 6611
Environmental Geochemistry	GLY 5243
Dynamics of Marine Biogeochemical Processes	OCE 6350

Statistics and Communication	
Experimental Design and Biometry	PCB 6456
Advanced Multivariate Biometry	PCB 6457
Scientific Communication	BSC 6846

Approved Course list:

Course Code	Course Name
BOT 6606	Coastal Plant Ecology
BOT 6606L	Coastal Plant Ecology Lab
BSC 6342	Advances in Finfish Aquaculture
BSC 6346	Introduction to Marine Biotechnology
BSC 6846	Scientific Communication
BSC 6936	Marine Conservation
CHS 6611	Chemistry for Environmental Scientists
EVR 6358	Restoration Implementation and Management
EVS 5385	Image & Video Processing & Vision in Marine Environment
GEO5305	Biogeography
GIS 5033C	Digital Image Analysis
GIS 5038C	Remote Sensing of the Environment
GIS 5051C	Principles of Geographic Information Systems
GIS 5100C	Applications in Geographic Information Systems
GIS 5103C	Programming in Geographic Information Systems
GIS 6039	Advanced Remote Sensing
GIS 6120	Topics in Geoinformation Science
GIS 6127	Hyperspectral Remote Sensing
GLY 5243	Environmental Geochemistry
GLY 5575C	Shore Erosion and Protection
GLY 5736C	Marine Geology
GLY 6352	Comparative Carbonate Sedimentology
GLY 6708C	Beach Morphodynamics
GLY 6737	Coastal Environments
GLY 6746	Global Environmental Change
GLY 6838	Methods in Hydrogeology
GLY 6888	Coastal Hazards
GLY 6934	Advanced Topics in Applied, Coastal, and Hydrogeology
OCB 6266	Coral Reef Ecosystems
OCB 6266L	Coral Reef Ecosystems/Lab
OCB 6673	Data Processing for studies & Modeling of Marine Systems
OCB 6715C	Marine Fisheries Ecology and Management
OCB 6810	Natural History of the Indian River Lagoon
OCE 6019	Marine Global Change
OCE 6267	Underwater Optical Imaging for Marine Scientists
OCE 6269	Marine Optics

OCE 6350	Dynamics of Marine Biogeochemical Processes
OCE 6680	Ocean Monitoring Systems & Implementation Strategies
PCB 6045	Conservation Biology
PCB 6046	Advanced Ecology
PCB 6316	Marine & Estuarine Community Dynamics
PCB 6317	Marine Ecology
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PCB 6406	Ecological Theory
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PCB 6465	Marine Molecular Biology
PCB 6772	Aquatic Animal Health
PCB 6775	Physiology of Marine Animals
PCB 6871	Sensory Biology & Behavior of Fishes
ZOO 6256	Marine Invertebrate Zoology
ZOO 6256L	Marine Invertebrate Zoology Lab
ZOO 6406	Biology of Sea Turtles
ZOO 6409	Biology of Sharks and Their Relatives
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