

 <b>FLORIDA ATLANTIC UNIVERSITY</b>	<b>NEW COURSE PROPOSAL</b> <b>Graduate Programs</b>		UGPC Approval _____ UFS Approval _____ SCNS Submittal _____ Confirmed _____ Banner Posted _____ Catalog _____
	<b>Department</b> Biology <b>College</b> Science <i>(To obtain a course number, contact erudolph@fau.edu)</i>		
<b>Prefix</b> OCB <b>Number</b> 6715	<i>(L = Lab Course; C = Combined Lecture/Lab; add if appropriate)</i> <b>Lab Code</b>	<b>Course Title</b> Marine Fisheries Ecology and Management	
<b>Credits</b> <i>(Review Provost Memorandum)</i> 4	<b>Grading</b> <i>(Select One Option)</i> <b>Regular</b> <input checked="" type="radio"/> <b>Sat/UnSat</b> <input type="radio"/>	<b>Course Description</b> <i>(Syllabus must be attached; see Guidelines)</i> This course will involve the advanced study of theory and techniques in fisheries science including behavior and ecology of exploited fisheries populations (shellfish, finfish, etc.) and protected resources including applications to resource management.	
<b>Effective Date</b> <i>(TERM &amp; YEAR)</i> Spring 2018			
<b>Prerequisites</b> Enrollment in MS/Ph.D. in Biology, Environmental Science, Marine Science; or by permission		<b>Corequisites</b> None	<b>Registration Controls</b> <i>(Major, College, Level)</i>
<b>Prerequisites, Corequisites and Registration Controls are enforced for all sections of course</b>			
<b>Minimum qualifications needed to teach course:</b> Member of the FAU graduate faculty and has a terminal degree in the subject area (or a closely related field.)		<b>List textbook information in syllabus or here</b> In Syllabus	
<b>Faculty Contact/Email/Phone</b> Dr. Matthew Ajemian/majemian@fau.edu/772-242-2730		<b>List/Attach comments from departments affected by new course</b>	

<b>Approved by</b> Department Chair _____ College Curriculum Chair _____ College Dean <u>Dr. Charles Roberts</u> UGPC Chair _____ Graduate College Dean _____ UFS President _____ Provost _____	<b>Date</b> <u>1-11-17</u> <u>1-13-17</u> <u>1-13-2017</u> _____ _____ _____
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Email this form and syllabus to [UGPC@fau.edu](mailto:UGPC@fau.edu) one week before the UGPC meeting.

**Course Syllabus**  
**Marine Fisheries Ecology and Management**

- 1. Course title/number, number of credit hours**  
Marine Fisheries Ecology and Management, OCB 6715, 4 cr.
- 2. Course prerequisites**
  - a. Enrollment in the graduate program (MS/PhD) in Biology, Environmental Science, or Marine Science at FAU  
or
  - b. Permission of the instructor
- 3. Course logistics**
  - a. Term – **Spring (beginning 2018)**
  - b. Notation if online course – N/A
  - c. Class location and time (if classroom-based course) – **Harbor Branch Oceanographic Institute (HBOI)**
- 4. Instructor contact information**
  - a. Instructor's name – Dr. Matthew Ajemian
  - b. Office address – Harbor Branch Oceanographic Institute, Lab 1, Rm 139
  - c. Office hours – To be determined
  - d. Contact telephone number – office (772) 242-2730
  - e. E-mail address – majemian@fau.edu
- 5. TA contact information (if applicable)**  
N/A
- 6. Course description**

This course will involve the advanced study of theory and techniques in fisheries science including behavior and ecology of exploited fisheries populations (shellfish, finfish, etc.) and protected resources including applications to resource management.
- 7. Course objectives/student learning outcomes**

This course aims to introduce students to the fundamentals of fisheries science and develop appreciation for the interdisciplinary nature of the field which integrates marine science, oceanography, ecology, organismal biology, spatial ecology and population demographics. At the culmination of the course, students will be able to:

  - Understand links between the environment and fisheries production
  - Participate in and understand the stock assessment and management process

- Appreciate the biological, sociological, and economic complexities surrounding fisheries science

Work will include readings in recent text, current literature, and a research project. The lab will emphasize practical sampling design and data interpretation, and include field trips on multiple fishery-independent surveys allowing students to experience various means of collecting fisheries data and processing samples for research. Students will also sit in on a public hearing of the FWCC (or NOAA Fisheries) so they may interact with scientists and gain a hands-on experience with the management process. Students will be asked to write a critique of a current fishery management plan and contribute to in-class discussions of recent publications on topical fisheries issues.

**Student Learning Outcomes:**

- Establish future leaders and professionals with an in-depth marine fisheries education
- Educate future leaders and professionals with specialized skills by teaching methods of collecting, interpreting, analyzing, and presenting scientific data both orally and written
- Enable future leaders and professionals to contribute to the profession

**8. Course evaluation method**

There will be graded lab assignments accounting for 20% of the student's cumulative performance, a Fishery Management Plan/presentation (10%), Lab Reports (10%), a midterm exam, accounting for 30% of the student's cumulative performance, and a final exam that accounts for 30% of the cumulative performance. The overall grade in the course is derived from the cumulative performance according to the following table.

**9. Course grading scale (optional)**

Cumulative Performance	Grade
>94%	A
>90% - 94%	A-
>87% - 90%	B+
>83% - 87%	B
>80% - 83%	B-
>75% - 80%	C+
>65% - 75%	C
>60% - 65%	C-
>57% - 60%	D+
>53% - 57%	D
>50% - 53%	D-
<50%	F

**10. Policy on makeup tests, late work, and incompletes**

If a student cannot attend an exam or hand in a homework project on time due to circumstances beyond their control then the instructor may assign appropriate make-up work. Students will not be penalized for absences due to participation in University-approved activities, including athletic or scholastics teams, musical and theatrical performances, and debate activities. These students will be allowed to make up missed work without any reduction in the student's final course grade. Reasonable accommodation will also be made for students participating in a religious observance. Also, note that grades of Incomplete ("I") are reserved for students who are passing a course but have not completed all the required work because of exceptional circumstances. A grade of "I" will only be given under certain conditions and in accordance with the academic policies and regulations put forward in FAU's University Catalog. The student must show exceptional circumstances why requirements cannot be met. A request for an incomplete grade has to be made in writing with supporting documentation, where appropriate.

### **11. Special course requirements (if applicable)**

#### **Laboratories:**

Labs will be held for 3 hours immediately following lectures each Tuesday. We will be doing various activities in lab including presentations, experiments, and local/regional mandatory field trips. Details will be discussed in laboratory.

#### **Course Projects:**

You will be assigned two major projects during the semester. Details for these projects will be discussed in class. These assignments are briefly described below.

##### **1. Topic Presentation:**

A major focus of this course will be a review of the current literature. Students will be assigned to specific groups to address one of the discussion topics assigned during class. You are expected to thoroughly investigate the topic by compiling the most current research and review journal articles concerning the issue (preferably review papers). During class you will lead the discussion of the selected topic. Ideally, you give the general background of the topic area and then discuss major issues including differing viewpoints. Key articles must be provided to classmates two weeks prior to presentation.

##### **2. Fisheries Management Plan:**

Using the guidelines presented in class prepare a Fisheries Management Plan or amend a current plan for a species or your choice. You will prepare an oral and written presentation of your Management Plan before the "Fisheries Management Council (Class)" (15 minutes, 5 minutes for Q&A). Ability to explain and defend your plan to the Mock FMC will be the major focus of the presentation.

## 12. Classroom etiquette policy (if applicable)

University policy on the use of electronic devices states: “In order to enhance and maintain a productive atmosphere for education, personal communication devices, such as cellular telephones and pagers, are to be disabled in class sessions.”

## 13. Disability policy statement

In compliance with the Americans with Disabilities Act (ADA), students who require special accommodation due to a disability to properly execute coursework must register with the Office for Students with Disabilities (OSD) -- in Boca Raton, SU 133 (561-297-3880); in Davie, MOD 1 (954-236-1222); in Jupiter, SR 117 (561-799-8585); or at the Treasure Coast, CO 128 (772-873-3305) – and follow all OSD procedures.

## 14. Honor Code policy statement

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty, including cheating and plagiarism, is considered a serious breach of these ethical standards, because it interferes with the University mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the University community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see University Regulation 4.001 at

[http://www.fau.edu/regulations/chapter4/Reg\\_4.001\\_5-26-10\\_FINAL.pdf](http://www.fau.edu/regulations/chapter4/Reg_4.001_5-26-10_FINAL.pdf)

**Cheating is a serious offense. If you are caught cheating, you will receive an F in the course. In addition, you will be referred to the Dean of Student Services and charged with an academic crime. Test procedures and rules will be stated at the beginning of each exam.**

## 15. Required texts/readings

*Fisheries Techniques, 3<sup>rd</sup> Edition* (A.V. Zale, D.L. Parrish, and T.M. Sutton, eds.) ISBN 978-1-934874-29-5. American Fisheries Society, Bethesda, MD, USA.

## 16. Supplementary/recommended readings (optional)

Additional readings will be provided from topical literature related to marine fisheries.

Recommendations:

Hilborn, R. and C.J. Walters. *Quantitative Fisheries Stock Assessment: Choice, Dynamics & Uncertainty*.

Haddon, M. 2011. *Modelling and Quantitative Methods in Fisheries*, Second Edition. SBN 9781584885610

### 17. Course topical outline

<b>Week</b>	<b>Module I: INTRODUCTION, TECHNIQUES, &amp; HABITATS</b>	<b>Lab</b>	<b>Homework</b>
1	The World's Fisheries: An Introduction	Fish Banks 1	Reading: Tragedy of Commons
2	Fisheries Oceanography I (Bio-physical Coupling, Climate Oscill.)	Fish Banks 2	Reading: Lehodey et al. 2006
3	Observing Populations I (Experimental Design, Sampling techniques)	FMP Topic research	Reading: Fish. Tech. (1, 6, 7, 17)
4	Observing Populations II (Ageing, Trophic/Reproductive Analyses)	Field Trip 1-inshore	Reading: Fish. Tech. (14-16)
5	Tagging and Tracking of Marine Fishes	Mark-recapture game	Reading: Fish. Tech. (11, 18)
6	Coastal Fisheries and the Estuarine Link	Field Trip 2-inshore	Reading: Beck et al. 2001
7	Offshore/Hardbottom/Pelagic Fisheries	Field Trip 3-offshore	Reading: Carr and Hixon 1997
8	<i>EXAM I</i>		
	<b>Module II: DYNAMICS, ASSESSMENT, &amp; MANAGEMENT</b>		
9	Population Dynamics and Stock Assessment	Field data workup 1	Reading: Stock Assess. Guide
10	Fisheries Models - Ricker, B/H, VPA, and Catch-at-Age	Field data workup 2	Lab Report 1
11	Fisheries Management and Governance of the Sea	Field data workup 3	Lab Report 2
12	Ecosystem-Based Management and Essential Fish Habitat	FWC Hearing	Reading: Fish. Man. For Fishers
13	Human Dimension of Fisheries Science	NOAA Hearing	Reading: Fish. Tech. (19-21)
14	Major Issues in Marine Fisheries: Bycatch, Overfishing	FMP Presentation	FMP Draft
15	Aquaculture and Stock Enhancement	FMP Presentation	FMP Final
16	<i>EXAM II</i>		