

University of Florida
FAS 4932 (3 credits)
Spatial Sciences for Marine Environmental Characterization

Fall 2018 Syllabus

Delivery Format: On-Campus, Reed Lab Room 402

Meeting day: Tuesday, 11:45AM-14:45PM

<https://ufl.instructure.com/courses/XXXXXX> (TBD)

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Office Hours: By appointment
Preferred Course Communications: email

Prerequisites

There are no prerequisites for this course. Previous exposure to Geographic Information Systems (GIS) is an asset.

PURPOSE AND OUTCOME

Course Overview

An introduction to the geospatial technologies, concepts and methods required to acquire, analyze and manage geographic data used in a context of marine habitat mapping. The fields of cartography, remote sensing, and geographic information systems (GIS) will be reviewed, and students will be introduced to quantitative methods relevant to the study of marine geomorphology and biology and how they combine to provide a spatial representation of marine habitats. Emphasis is given to the understanding and appreciation of maps as a mean of communication between stakeholders with different backgrounds and expertise.

Relation to Program Outcomes

This course provides an interdisciplinary perspective on the study of marine environments. It involves concepts from biology, ecology, geomorphology, oceanography and the spatial sciences. It is meant to bridge the Geomatics Program with the Fisheries and Aquatic Sciences Program by complementing existing courses in those programs (e.g. SUR4934 – Marine Geomatics, FAS6932 – Spatial Ecology and Modeling). The course is aimed at upper-level undergraduate students and graduate students from both programs, at students from the Department of Wildlife Ecology and Conservation, and any others with an interest in using the spatial sciences to map and study the marine environment.

Course Objectives and/or Goals

The overall goal of this course is to improve spatial awareness and map literacy in students. Upon successful completion of the course, students will be able to:

- Describe data collection techniques relevant to marine habitat mapping
- Explain the different components of marine habitats and how they can be quantified and situated in a geographic context
- Prepare different types of spatial data for their inclusion in a habitat mapping workflow
- Produce habitat maps in different contexts

Instructional Methods

Course concepts will be introduced using real examples to demonstrate how spatial sciences can assist in answering marine sciences questions. This course has a lab and field-based components in which students will learn how to collect spatial data and to perform GIS-based marine environmental characterization. The in-class time will be focused on discussions and building skillsets like spatial critical thinking and science communication. A series of assignments and in-class tasks will provide students with the opportunity to use spatial data and maps for both interpretation and analysis.

DESCRIPTION OF COURSE CONTENT

Topical Outline/Course Schedule

Weeks	Dates	Topics	Readings	Assignments
1	08/28	Course Introduction, Introduction to Maps	Costa et al. (2009) OR Knudby et al. (2010)	
2	09/04	Remote Sensing	Caquard (2011) OR Wright et al. (1997)	Summary #1
3	09/11	Cartography, Geographic Information Systems	Brown et al. (2011) OR McArthur et al. (2010)	Summary #2
4	09/18	Surrogacy, Marine Habitat Mapping	Erikstad et al. (2013) OR Roccinni et al. (2011)	Summary #3
5	09/25	Finding Data, Metadata, Data Quality, Fitness-for-Use	Florinsky (2017) OR Agumya & Hunter (1999)	Summary #4
6	10/02	Advanced Quantitative Techniques		Summary #5
7	10/09	<i>Mid-term exam</i>		
8	10/16	Field Trip		
9	10/23	Project Planning		
10	10/30	Lab and Team Work		
11	11/06	<i>Lightning Talks</i>		Proposal
12	11/13	Communicating with Maps, Stakeholders Involvement	Greene et al. (2005), Lecours (2017)	
13	11/20	Lab and Team Work		Report Part #1
14	11/27	Lab and Team Work		Report Part #2
15	12/04	<i>Project Presentation, Conclusion</i>		Final Report

Course Materials and Technology

The course will use a variety of GIS software, including open-source software that can be downloaded on any desktop computer and laptop, and the commercial ESRI ArcGIS Desktop software. ArcGIS is available by getting a license from the UF GeoPlan Center (https://www.geoplan.ufl.edu/licensed_software.shtml), in the UF computer labs (<https://labs.at.ufl.edu/>; note that the labs may be reserved for classes), or remotely from the UFApps (<https://info.apps.ufl.edu/>).

Technical support is available through the UF Help Desk at:

- Learning-support@ufl.edu
- (352) 392-HELP - select option 2
- <https://lss.at.ufl.edu/help.shtml>

ACADEMIC REQUIREMENTS AND GRADING

Assignments and Exams

- Readings will be provided throughout the semester. Students are expected to write a short summary of their assigned readings in preparation for class discussion. Five opportunities will be provided to write such summary; students have to submit at least three summaries over the course of the semester. If a student submits more than three summaries, those with the highest grades will be counted as part of the final grade.
- A comprehensive mid-term exam will be given to assess the students' ability to describe data collection techniques relevant to marine habitat mapping and explain the different components of marine habitats and how they can be quantified and situated in a geographic context.
- A team project will be assigned in the second half of the semester. Students will be asked to produce a variety of habitat maps for different purposes. The maps will be used to assess their ability to prepare different types of spatial data for their inclusion in a habitat mapping workflow. The evaluation of the project will be based on an oral (two presentations, 25% of the overall grade) and a written component (two reports, 40% of the overall grade). The final report will be submitted in sections, on which students will receive feedback and have the opportunity to get back partial grades if the feedback is integrated into the final version of the report.
- All assignments will be submitted on the course website. Presentation of the assignments must be neat, logical, organized and appropriately referenced. Poor presentation will be penalized up to a maximum of 20% of the value of assignments and exams.

Grading

Requirement	% of final grade
Reading Summaries (3)	5% each (15%)
Mid-Term Exam	20%
2-Pages Project Proposal	10%
Lightning Talk	10%
Final Report	30%
Final Presentation	15%

Points earned	93-100	90-92	87-89	83-86	80-82	77-79	73-76	70-72	67-69	63-66	60-62	Below 60
Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E

Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E	WF	I	NG	S-U
Grade Points	4.0	3.67	3.33	3.0	2.67	2.33	2.0	1.67	1.33	1.0	0.67	0.0	0.0	0.0	0.0	0.0

For greater detail on the meaning of letter grades and university policies related to them, see the Registrar's Grade Policy regulations at: <http://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Late Policy

Due dates are indicated in the calendar above. Any modifications to these dates will be announced by the instructor when assignments are given. A deduction of 10% will be made for each day that an assignment is late, with the first 10% being removed immediately after the due time.

Policy Related to Make-up Exams, Other Work, and Required Class Attendance

Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies. Please note all faculty are bound by the UF policy for excused absences. For information regarding the UF Attendance Policy see the Registrar website for additional details:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

STUDENT EXPECTATIONS, ROLES, AND OPPORTUNITIES FOR INPUT

Expectations Regarding Course Behavior

You are expected to actively engage in the course throughout the semester. You must come to class prepared by completing all out-of-class assignments. This preparation gives you the knowledge or practice needed to engage in higher levels of learning during the live class sessions. If you are not prepared for the face-to-face sessions, you may struggle to keep pace with the activities occurring in the live sessions, and it is unlikely that you will reach the higher learning goals of the course. Similarly, you are expected to actively participate in the live class. Your participation fosters a rich course experience for you and your peers that facilitates overall mastery of the course objectives.

In order to facilitate the creation of a functional learning community and out of respect for the instructor and the other students, it is expected that all cell phones and laptops be either set on silent mode or turned off, except when authorized by the instructor. Recording devices are strictly prohibited.

Opportunities for Input and Online Faculty Course Evaluation Process

Your comments are very valuable to the instructor. They will be used by the instructor to make specific improvements to the course (e.g. assignments) and teaching style. The instructor will be providing opportunities throughout the semester for students to provide direct feedback on the course. However, students are encouraged to email the instructor at any time if they have concerns or comments to share with the instructor.

Students are also expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

Academic Integrity

Students are expected to act in accordance with the University of Florida policy on academic integrity. As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge:

“We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.”

You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied:

“On my honor, I have neither given nor received unauthorized aid in doing this assignment.”

It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For additional information regarding Academic Integrity, please see Student Conduct and Honor Code or the Graduate Student Website for additional details:

<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>

<http://gradschool.ufl.edu/students/introduction.html>

Please remember cheating, lying, misrepresentation, or plagiarism in any form is unacceptable and inexcusable behavior.

Software Use

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Students Complaints

UF's complaints policy can be found at: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf

SUPPORT SERVICES

Accommodations for Students with Disabilities

If you require classroom accommodation because of a disability, you must register with the Dean of Students Office <http://www.dso.ufl.edu> within the first week of class. The Dean of Students Office will provide documentation of accommodations to you, which you must then give to the instructor of the course to receive accommodations. Please make sure you provide this letter to the instructor by the end of the second week of the course. The College is committed to providing reasonable accommodations to assist students in their coursework.

Counseling and Student Health

Students sometimes experience stress from academic expectations and/or personal and interpersonal issues that may interfere with their academic performance. If you find yourself facing issues that have the potential to or are already negatively affecting your coursework, you are encouraged to talk with an instructor and/or seek help through University resources available to you.

- The Counseling and Wellness Center (352-392-1575) offers a variety of support services such as psychological assessment and intervention and assistance for math and test anxiety. Visit their web site for more information: <http://www.counseling.ufl.edu>. Online and in person assistance is available.
- You Matter We Care website: <http://www.umatter.ufl.edu/>. If you are feeling overwhelmed or stressed, you can reach out for help through the You Matter We Care website, which is staffed by Dean of Students and Counseling Center personnel.
- The Student Health Care Center at Shands is a satellite clinic of the main Student Health Care Center located on Fletcher Drive on campus. Student Health at Shands offers a variety of clinical services. The clinic is located on the second floor of the Dental Tower in the Health Science Center. For more information, contact the clinic at 392-0627 or check out the website at: <https://shcc.ufl.edu/>
- Crisis intervention is always available 24/7 from the Alachua County Crisis Center (352-264-6789) <http://www.alachuacounty.us/DEPTS/CSS/CRISISCENTER/Pages/CrisisCenter.aspx>

Do not wait until you reach a crisis to come in and talk with us. You are not alone so do not be afraid to ask for assistance.

Inclusive Learning Environment

This course embraces the University of Florida's Non-Discrimination Policy, which reads, "The University shall actively promote equal opportunity policies and practices conforming to laws against discrimination. The University is committed to non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, gender identity and expression, marital status, national origin, political opinions or affiliations, genetic information and veteran status as protected under the Vietnam Era Veterans' Readjustment Assistance Act." If you have questions or concerns about your rights and responsibilities for

inclusive learning environment, please see the instructor or refer to the Office of Multicultural & Diversity Affairs website: www.multicultural.ufl.edu
