GEOG 9023: GIS and Remote Sensing for Coastal and Marine Science Syllabus

Description

Use of geospatial technologies to map physical coastal and ocean processes is necessary for analysis of conservation issues, effective coastal zone management, and designation of marine protected areas. This intensive application course focuses on using GIS for spatial analysis and basic image processing to support coastal and marine research. Covered topics include benthic habitat mapping, spatial analysis of marine animal movements, habitat modeling, and mapping of marine protected areas. Fundamental knowledge of geospatial analysis theory and tools is required, as outlined in the prerequisites above. Class Format: Approximately 40% lecture, 60% lab exercises.

Instructor

Anna Studwell

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Course Objectives

• Understand how marine and coastal space is characterized / defined
• Understand methods for working with *in situ* and remotely sensed data to map species distributions
• Understand tools to work with satellite (MODIS) and multibeam sonar data to evaluate environmental & bathymetric variables

We will use Esri's ArcGIS Pro (Version 2.5)

Grading

This course is graded Credit/Non-Credit. To receive a Credit grade, students must demonstrate completion of each section by introducing themselves, turning in answers to lab assignments and participating in a reflection forum. **All assignments and forum participation must be completed by 11pm Sunday, October 18, 2020.**

Course Sections

Lectures	Associated Lab Exercise(s)	Suggested Completion Date
Characterizing Coastal and Marine Space	Introduce Yourself	Tuesday, Oct. 13
	SUBMIT: Lab 1 Answers	
Measuring the Coastal and Marine Environment	SUBMIT: Lab 2 Answers	
Modeling Species Distributions in a GIS	SUBMIT: Lab 3 Answers	Thursday, Oct. 14
Remote Sensing: Exploring Sea Surface Temperature with MODIS	SUBMIT: Lab 4 Answers	
	REFLECT: Post your seabird distribution AGOL Web Map url	
Remote Sensing: Exploring the Sea Floor with a Multibeam GRID	SUBMIT: Lab 5 Answers	Friday, Oct. 15

GIS Licensing Policy

San Francisco State University has excellent educational discounts for ArcGIS software and we are fortunate to be able to provide our students with the installation and licensing files needed to install the software up on a home computer.

Please remember that when you use ArcGIS Online or install ArcGIS software on your computer, you are agreeing to only use the software only for your own teaching and learning purposes. You should not use or permit others to use ESRI education products for consulting or any other form of commercial or profit-generating activities with your license. Please review our full site license agreement in the link below for a more comprehensive understanding of this policy.

ESRI ArcGIS Permitted Uses

(https://sfsu.box.com/s/7i3319kej7f8qlxuhnnbk0pxuw959s6q)

SF State Policies

Disclosures of Sexual Violence (Title IX)

SF State fosters a campus free of sexual violence including sexual harassment, domestic violence, dating violence, stalking, and/or any form of sex or gender discrimination. If you disclose a personal experience as an SF State student, the course instructor is required to notify the Dean of Students. To disclose any such violence confidentially, contact:

• The SAFE Place – (415) 338-2208; psyservs.sfsu.edu/content/safe-place

• Counseling and Psychological Services Center – (415) 338- 2208; psyservs.sfsu.edu

Disability Access

Students with disabilities who need reasonable accommodations are encouraged to contact the instructor. The Disability Programs and Resource Center (DPRC) is available to facilitate the reasonable accommodations process. The DPRC is located in the Student Service Building and can be reached by telephone (voice/TTY 415-338-2472) or by email to dprc@sfsu.edu.