**Instructor:** Maria Luisa Estevanez  
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**Class Schedule:** Mondays and Wednesdays  
9:00 am – 10:15 am/10:30 am – 11:45 am

**Office Hours:** Mondays and Wednesday 1:30 pm – 4 pm  
or by appointment

**Class Objectives**  
Understand the concept of spatial data analysis.  
Apply GIS concepts and create simple GIS models for marine science/marine policy applications using ArcGIS 10.

**Class Materials:** All class materials are available from UM Blackboard (courses.miami.edu)

**Textbook:** Introduction to Geographic Information Systems 5\textsuperscript{th} edition by Kang Tsung Chang

**Grading:**  
Lab exercises and attendance: 25%  
Homework: 15%  
BiWeekly Quizzes: 30%  
Individual Project: 30%

**Weekly Quizzes:** There will be a 20 minute quiz every second Monday. The quiz will cover the class materials from the 2 previous weeks.

**Group Project:** There will be an individual class project. You will choose your own project. You will be required to present your project and write a paper. The guidelines for the presentation and paper will be available at the Blackboard. A sample presentation and paper will available for your use.

The project will be completed during class hours (see schedule below). The project will be presented at the last 2 weeks of classes. The project paper is due at the last day of class.
<table>
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<tr>
<th>Week</th>
<th>Topic</th>
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| Week 1 (August 25) | Class Syllabus  
Class Policy  
Reading 1 |                    |                    |                                                        |                                                        |
| Week 2   | What is GIS  
Map Projection | Week2.zip          | Chang – Ch.1, 2 Hand-out | Gulf of Mexico Oil Spill  
World Map Projection | Create a Map Layout using Gulf Oil Spill Data  
Create World Map Projections |
| Week 3   | Vector Data Model-  
Spatial and Attribute | Week3.zip          | Chang- Ch. 3, 8,  
10 | Data Display and Attribute Table manipulation  
Data Statistics | Mapping Atlantic Hurricanes 2009  
Mapping SE Florida Coral Reef and Critical Habitat |
| Week 4   | Vector Data Analysis  
Geocoding | Week4.zip          | Chang- Ch. 10,  
1617 | Data Manipulation (Pre-  
processing of data)  
Map Overlay and Buffering | Tongass National Park |
| Week 5   | Continue Vector Data Analysis  
(Using Model Builder) | Week5.zip          | Chang- Ch. 4, 12 | Simple GIS data models  
Create a Flow Chart | Biscayne National Park |
| Week 6   | Continue Vector Data Analysis | Week6.zip          | Chang- Ca. 13 | Creating A Decision Support Model  
Ecosystem Based Management | Marine Protected Areas EBM Modeling |
| Week 7   | Raster Data Model | Week 7.zip         |                    | Terrain Mapping | TBA |
| Week 8   | Continue Raster Data Model | Week 8.zip         |                    | Using a simple Marxan Model | TBA |
| Week 9-14 | Projects to do in Class  
Group Projects Presentation |                    |                    |                                                        |                                                        |