

Name: Geographic Information Systems (GIS) for Field Scientists

Dates: June 11 - 18, 2007

Course number: Cornell (BIOSM 275)

Credits: 2 credits

Instructors:

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Description:

This course will:

- 1) Train students in the technology and applications of Geographic Information Systems (GIS)
- 2) Guide participants as they develop GIS projects specific to Appledore Island and the surrounding area

Goals:

1. Provide an introduction to GIS concepts.
2. Introduce GIS technology (ArcGIS release 9.1)
3. Introduce GPS technology (Garmin handheld)
4. Provide GIS operational skills: creating data, managing data, representing data, data analysis, making maps
5. Provide field instruction in GPS operation
6. Teach skills required for importing of GPS data into GIS
7. Teach methods for linking pictorial documentation to GIS data
8. Guide students through the process of applying GIS to projects
9. Work with researchers to apply student project efforts to current Shoals research

Materials:

Manuals will all instructional materials (exercises, lectures) will be provided to each student. For duration of the course, each student will have the use of one laptop with GIS and GPS software, one handheld GPS unit and one camera.

Time	Activity	Topic
June 11th		
4:30 - 5:00	Discussion	Introductions and overview
5:00 - 6:00	Instruction	GIS Concepts/ Tour of ArcMap
6:00 - 7:00		Dinner
7:00 - 8:30	Discussion	GIS applications and project ideas
	Homework	Develop two ideas about applying GIS to a project
June 12th		
8:30 - 9:00	Discussion	Discussion: project ideas
9:00 - 10:15	Instruction	Attribute Tables
10:15 - 10:30		<i>Break</i>
10:30 - 11:30	Instruction	Selecting
11:30 - 12:30	Instruction	Thematic Maps
12:30 - 1:30		Lunch
1:30 - 2:00	Instruction	GPS Technology Overview
2:00 - 2:15	Instruction	Hands-on with GPS units
2:15 - 3:30	Field practice	GPS data collection
3:30 - 3:45		<i>Break</i>
3:45 - 4:15	Instruction	GPS Accuracy
4:15 - 4:30	Instruction	Digital photography
4:30 - 4:45	Instruction	Hands-on with digital cameras
4:45 - 6:00	Field practice	GPS data and photo collection
6:00 - 7:00		Dinner
7:00 - 8:30	Discussion	Project ideas
	Homework	Develop a data collection plan for your project
June 13th		
8:30 - 9:30	Discussion	Project data collection plans
9:30 - 10:00	Instruction	Import of GIS data, linking of images
10:00 - 10:30	Instruction	Incorporating GPS data into GIS maps
10:30 - 10:45		<i>Break</i>
10:45 - 11:15	Instruction	Joining Tables
11:15 - 12:30	Instruction	Georeferenced data/ ArcCatalog
12:30 - 1:30		Lunch
1:30 - 2:30	Discussion	Project selection and planning
2:30 - 5:00	Projects	Fieldwork/Labwork/Meetings
5:00 - 6:00	Instruction	Metadata and data structure
6:00 - 7:00		Dinner
7:00 - 8:30	Projects	Labwork
	Homework	Detail project tasks and develop timeline

Time	Activity	Topic
June 14th		
8:30 - 9:30	Discussion	Project tasks and timelines
9:30 - 10:30	Exercises	Geoprocessing
10:30 - 10:45		<i>Break</i>
10:45 - 11:45	Exercises	Importing
11:45 - 12:30	Exercises	Developing New Data
12:30 - 1:30		Lunch
1:30 - 5:00	Projects	Fieldwork or Labwork
5:00 - 6:00	Exercises	Advanced Tables & Summarizing
6:00 - 7:00		Dinner
7:00 - 8:00	Discussion	Project updates
	Homework	Work on project

June 15th		
8:30 - 9:15	Exercises	Labels
9:15 - 10:30	Exercises	Layout
10:30 - 10:45		<i>Break</i>
10:45 - 11:30	Exercises	Advanced Layout
11:30 - 12:00	Exercises	Layer Files
12:00 - 12:30	Discussion	Project questions
12:30 - 1:30		Lunch
1:30 - 6:00	Projects	Fieldwork or Labwork
6:00 - 7:00		Dinner
7:00 - 7:30	Discussion	Project questions
7:30 - 8:30	Projects	Labwork
	Homework	Work on project

June 16th		
8:30 - 12:30	Projects	Labwork
12:30 - 1:30		Lunch
1:30 - 4:30	Presentations	Project presentations from each student
4:30 - 6:00	Discussion	Project feedback
6:00 - 7:00		Dinner
7:00 - 8:00	Discussion	Review of project expectations
	Homework	Work on project

June 17th		
8:30 - 10:00	Projects	Labwork
12:30 - 1:30		Brunch
11:00 - 3:30	Projects	Labwork
3:30	Projects	Projects due
3:30-5:00	Discussion	Project feedback and wrap-up
5:00 - 6:00		Dinner
6:00 - 11:00		Community building festivities