Making the impossible, possible

A GIS Course Serving Diverse Purposes & Students

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A GIS Course Serving Diverse Purposes & Students

• Range of material and skill development
• Varied student levels and backgrounds
• Varied majors
Majors from Anthropology to Recreation & Park Management

- Geography
- Atmospheric Science
- Planning
- Rec. & Park Mgmt.
- Indust. Tech. - Design
- Political Science
- Criminal Justice
- Geology
- Anthropology
- Computer Science
- Environ. Health
- Undeclared
What do you think of ...
Course Objectives Map

- Develop a knowledge base of essential mapping concepts, comprehend their significance & apply them appropriately in the use of GIS.
- Understand how geographic information represents, analyzes, & communicates aspects of human & environmental activities and events on our planet.
- Employ a variety of data sources and techniques in creating map products.
- Master an introductory level skill set with the ESRI ArcGIS desktop software.
- Demonstrate all of the above by completing an independent GIS project at semester’s end.

Essential Concepts

- Describe the choice and uses of data and coordinate systems
- Describe absolute and relative scale and how scale impacts
- Describe the component parts and levels of ArcGIS Desktop
- Describe and create qualitative maps
- Define GIS and GNSS and how they contribute to GIS

Designing & Creating Map Products

- Describe a DEM for relief
- Create hillshade, aspect, & slope
- Describe and implement GIS applications
- Describe and implement GIS strategies

Software Training

- Describe, create, and employ ESRI data formats, especially the geodatabase
- Create and edit spatial data and attributes
- Use GIS analysis to ask questions, get answers and present results
- Work with geoprocessing tools and models
- Use map projections and coordinate systems

Understand how Geographic Information Represents and Communicates

- Plan, execute and present an independent GIS project
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Blackboard Implementation

Textbook reading
Quiz on reading - Bb
Short lecture
Supportive materials
Lab exercise on chapter topic
Software training
Quiz on software training, Bb
Evaluation Weeks: Exams & Competency

Software Competency Evaluation 2

Part II. 40pts. I strongly recommend checking off each step as you go.

1. If you have not already, access your LearnArcGIS10\Reference folder in your ArcGIS training data.

2. Download and save (not open yet) the map document from Blackboard into your LearnArcGIS10\Reference folder so that the data links will still be functional. Open it in ArcMap. If the data links are not working -- if the data does not show on screen. Try putting the map document exactly where I suggested and then open it again and or confirm that you have uncompressed your data.

3. Save the map document with your last name. Example: mulcahyEval2.mxd. 2pts.

4. You will be creating a map of the 1870 transatlantic cable route similar to the image included. Since you are focusing on a region rather than the world, you will need to zoom in to the area around the cable route. Use the zoom tools from the toolbar or right-click on the cable layer and choose zoom to layer.

5. Symbolize the bathymetry with the cyan-light to blue-dark color ramp (If you are asked if you want to compute statistics be certain to answer YES) and be certain that the deep ocean is dark while the shallows are light by inverting the color ramp. 6pts.

6. Find the minimum, maximum, and midpoint latitude for the cable line as well as the longitude of the middle of the cable line. Record them here as degrees and minutes. 6pts.

<table>
<thead>
<tr>
<th>Minimum Latitude</th>
<th>Maximum Latitude</th>
<th>Longitude</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. Next you will change the map projection to one that is appropriate for mid-latitudes and in #8 be sure to use the correct projection parameters. Go to the data frame properties and change the projection to one suitable that shows true distance from a point. Locate the: North America, Equidistant Conic (Check the Project Systems/Continental/North America) 4pts.

North American to Europe: the 1870 Transatlantic Cable

[Map of North American to Europe with the 1870 Transatlantic Cable highlighted]
“A choropleth map of 2010 population.

A dot density map of 2010 population.

There are no detailed instructions provided for this evaluation. You have created these types of maps before.”
Final Projects

Tar-Pamlico

Potential Pocosin Restoration and Mitigation

Tobacco Production in Pounds, 2002

Tobacco Production in Pounds, 2007
Some Current Final Project Topics

• Esri Community Basemap development
  – East, medical, sports, and recreation campus areas
  – City parks
• Spatial analysis of 3 Roommate rule near campus
• Maps for Study of NY Flooding
• Spatial Analysis of Burials at Town Creek, NC
• Exploratory Mapping of Mexican Social Networking Site
Custom Student Opinion of Effectiveness

Number of hours of study per hour of coursework.
Questions?