Course Syllabus for ISMT E-155 (23443)
Geographic Communication Today
Harvard Extension School
Spring 2013

(Last updated: Wednesday, March 6, 2013)

Course time and place: Wednesdays, 5:30-7:30 pm
Location: 53 Church Street, Room 201
Instructor: Jeff Blossom, M.A., jblossom@cga.harvard.edu
Office hour: Wednesdays, 4:30-5:30 pm, 53 Church Street, Room 201, or by appointment.
Teaching Assistant: Stacy Bogan, M.S., sbogan@cga.harvard.edu
Office hour: Wednesdays, 7:30-8:30 pm, 53 Church Street, Room 201, or by appointment.
Prerequisite: Familiarity with MS Office or OpenOffice software, internet browsing, downloading, and emailing.
Credits: 4, graduate credit
Website: http://isites.harvard.edu/course/ext-23443/2013/spring

Course Description
This course teaches the fundamental geographic, cartographic, and technological concepts required to produce informative, meaningful maps that illustrate geographic phenomena. By using a combination of internet and desktop geographic information software, students perform geocoding, thematic mapping, web map creation, and spatial analysis. Maps are generated from publicly available published and crowd-sourced data sets, and individual geographic data sets created from scratch. Students use Google Earth, MyMaps, Social Explorer, ArcGIS, Bing Maps, Quantum GIS, Batchgeo.com, and WorldMap to create and publish maps in various media formats including web maps, 3-D, and video. Understanding the nature of geographic data and how to best represent the data in mapped form is emphasized.

Course Objectives
To learn about the fundamental principles of geography - location, place, regions, human/environment interaction, and movement – and understand why they are important.

To obtain an understanding of how the earth and geographic information are modeled in order to represent spatial phenomena that communicates both human and physical concepts and ideas.

To understand and apply the cartographic principles of map projection, orientation, scale, layout, symbology, type, and color, to produce informative maps of publishable quality.
To gain experience using a variety of geographic information software programs, to be able to effectively convert geographic information into maps, presentations, and video, and to develop an advanced proficiency using a software of choice.

To understand the breadth and depth of the geospatial industry and Geographic Information Systems (GIS).

Course Learning Outcomes
Upon conclusion of this course students will be able to:

- Design and create informative, communicative maps of publishable quality.
- Effectively use maps for feature and place location, identification, distance and area measuring, route selection and navigation.
- Read maps with a critical eye.
- Complete basic analytical functions using GIS.
- Use free software and publicly available data to make maps and geographic visualizations.
- Describe the Global Positioning System (GPS) and its use.
- Produce static and animated 3d maps.
- Describe the concept of map projections and know which to use when.
- Produce video animations that communicate phenomena across space and time.
- Georeference tabular and textual information into various geographic data formats.
- Explain map data sources, and employ techniques to harvest data from various sources for map creation.
- Collect geographic information using GPS, online, and desktop mapping.
- Describe the concepts, technical issues, and applications of GIS technology.
- Conduct collaborative mapping.
- Understand when to normalize datasets by population and area, and how to do this.

Textbook
No textbook is required. Reading assignments will be a mix of chapters from various textbooks, journal articles, and online publications made available on the course website. See the Textbooks section below for a list of textbooks from which chapters will be used as reading material for this course. Hardcopies of the textbooks are available in the Harvard library system.

Course Format
With the exception of the midterm and class project presentation weeks, each 2 hour class will include 1) lecture 2) software demonstration 3) map analysis critique and discussion, 4) students filling out a “5 minute paper” (see details below under Grading section), and 5) lab introduction, with a brief review of the previous week’s lab, if applicable.
Course Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Wk.</th>
<th>Lecture</th>
<th>In-Class Demo</th>
<th>Lab Exercise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan. 30, 2013</td>
<td>1</td>
<td>Introduction, course overview. Modeling the Earth, the origins of mapping, and communicating geographically.</td>
<td>Online mapping</td>
<td>Lab 1: Using online maps for place lookup, distance and area calculations.</td>
</tr>
<tr>
<td>Feb. 6, 2013</td>
<td>2</td>
<td>Georeferencing, geocoding, scale, projection.</td>
<td>QuantumGIS</td>
<td>Lab 2: Geocode address and city data, create maps from the result using QuantumGIS.</td>
</tr>
<tr>
<td>Feb. 20, 2013</td>
<td>4</td>
<td>Geography, symbology, map layout.</td>
<td>Raster data in ArcGIS</td>
<td>Lab 4: Map layout design.</td>
</tr>
<tr>
<td>Feb. 27, 2013</td>
<td>5</td>
<td>Typography, color, GIS.</td>
<td>Typography and color in ArcGIS</td>
<td>Lab 5: Google Earth, Google Maps.</td>
</tr>
<tr>
<td>Mar. 13, 2013</td>
<td>7</td>
<td>Web mapping and online GIS. Final project introduction Midterm review. Guest speaker, Keith Ratner, Salem State University.</td>
<td>WorldMap</td>
<td>Lab 7: GPS, collaborative mapping.</td>
</tr>
<tr>
<td>Mar. 20, 2013</td>
<td>8</td>
<td>Spring break, no class</td>
<td>None</td>
<td></td>
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<tr>
<td>Mar. 27, 2013</td>
<td>9</td>
<td>Midterm exam</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Apr. 3, 2013</td>
<td>10</td>
<td>Data creation and editing using GIS. GIS analysis.</td>
<td>Data editing with ArcGIS</td>
<td>Lab 8: GIS analysis with ArcGIS.</td>
</tr>
<tr>
<td>Apr. 10, 2013</td>
<td>11</td>
<td>Final project idea discussion. GIS Analysis.</td>
<td>Analysis with ArcGIS</td>
<td>Final project proposals</td>
</tr>
<tr>
<td>Apr. 17, 2013</td>
<td>12</td>
<td>Volunteered geographic information, collaborative mapping, GIS projects at Harvard</td>
<td>To be determined</td>
<td>Work on final projects.</td>
</tr>
<tr>
<td>Apr. 24, 2013</td>
<td>13</td>
<td>Mobile mapping, location based services, guest speaker.</td>
<td>To be determined</td>
<td>Work on final projects.</td>
</tr>
<tr>
<td>May. 1, 2013</td>
<td>14</td>
<td>The power of maps, cartographic deception. Summary and future possibilities.</td>
<td>To be determined</td>
<td>Work on final projects.</td>
</tr>
<tr>
<td>May 8, 2013</td>
<td>15</td>
<td>Final project presentations</td>
<td></td>
<td></td>
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<tr>
<td>May 15, 2013</td>
<td>16</td>
<td>Final project presentations</td>
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Lab assignments will be due nine calendar days after assignment. For example, Lab 1 assigned on Wednesday, January 30th will be due the following Friday, February 8th. Assignments that are turned in late will be penalized 10% per day late.

**Grading**
Class participation will consist of coming to class, and, if assigned, filling out a “5 minute paper”. During the 15 weeks of class, ten papers will be assigned, no more than one per class (week). The papers will not be graded. Full credit will be awarded by completing and turning in the papers. Each paper will count toward 1% of the final grade. Lab assignments will be graded and returned within one week’s time of being turned in. Course grades will be determined as follows:

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>% each of final grade</th>
<th>Total % of final grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class participation</td>
<td>10</td>
<td>1</td>
<td>10%</td>
</tr>
<tr>
<td>Midterm</td>
<td>1</td>
<td>20</td>
<td>20%</td>
</tr>
<tr>
<td>Labs</td>
<td>8</td>
<td>5</td>
<td>40%</td>
</tr>
<tr>
<td>Final project plan</td>
<td>1</td>
<td>5</td>
<td>5%</td>
</tr>
<tr>
<td>Final project maps</td>
<td>1</td>
<td>10</td>
<td>10%</td>
</tr>
<tr>
<td>Final project presentation</td>
<td>1</td>
<td>15</td>
<td>15%</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>100%</strong></td>
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</table>

Grade assignment ranges:

- 100.0 to 92.5 = A
- 92.4 - 89.5 = A-
- 89.4 – 87.5 = B+
- 87.4 – 82.5 = B
- 82.4 – 79.5 = B-
- 79.4 – 77.5 = C+
- 77.4 – 72.5 = C
- 72.4 – 69.5 = C-
- 69.4 – 67.5 = D+
- 67.4 – 62.5 = D
- 62.4 – 59.5 = D-
- < 59.5 = E (failing grade)

The Harvard University Extension School grading policy applies to this course, and is explained here: [http://www.extension.harvard.edu/exams-grades-policies/grades](http://www.extension.harvard.edu/exams-grades-policies/grades)

**Textbooks**