SAMPLE SYLLABUS  GEP 204 / 504

BASIC MAPPING: APPLICATIONS AND ANALYSIS
GEP 204 (Undergraduate level)
GEP 504 (Graduate level)

3 Credits, 4 hours (2 hours lecture, 2 hours lab)
Class Meets on Wednesdays from 6:00 - 9:20 PM
Gillet Hall, Room 311
Instructor: Dr. Juliana Maantay - Gillet Hall, Room 303
Tel: (718) 960-8574 (718) 960-8574
FAX: (718) 960-8584
e-mail: maantay@aol.com
Office Hours: M, W, 4:30-5:30 PM, and by appointment

COURSE DESCRIPTION:

This course serves as an introduction to the world of maps - how to use, interpret, and analyze maps to obtain information about a wide variety of topics. Discussions include mental maps, aerial photos, remotely-sensed images, computer-assisted cartography, and Geographical Information Systems (GIS). Laboratory work includes digital map applications and GIS exercises.

Through a series of lectures, written assignments, map interpretation exercises, and computer cartography and GIS laboratory exercises, students are taught the variety of ways mapping and GIS can be used in the natural and social sciences and well as in many other fields.

The course will cover the history of cartography, basic mapping processes, map projections; scales and generalization, measurements from maps, terrain representation, contour interpretation, topographic features, qualitative and quantitative information, topographic features, use and understanding of cartograms, thematic maps, graphs and charts, digital map applications, and Geographical Information Systems.

REQUIRED WORKBOOK:  (Available at Lehman College Bookstore)

Getting to Know ArcView GIS, Environmental Systems Research Institute (ESRI), 1997, GeoInformation International, Cambridge, UK

REQUIRED TEXTBOOKS:  (Available at Lehman College Bookstore)

COURSE REQUIREMENTS:
Cartography Laboratory Assignments (2) 20%
Written Assignments - Map Use and Interpretation Exercises (2) 20%
Class Participation and Attendance 10%
Midterm Exam 25%
Final Exam 25%

THE LURE OF MAPPING

If you gather a group of people together and ask them about maps, you will always get a lively response. Like the universal fascination with moving water, or the dance of a fire's flame, maps hold some primal attraction for the human animal....

In our consumer society, mapping has become an activity primarily reserved for those in power, used to delineate the "property" of nation states and multinational companies. The making of maps has become dominated by specialists who wield satellites and other complex machinery. The result is that although we have great access to maps, we have also lost the ability ourselves to conceptualize, make and use images of place - skills which our ancestors honed over thousands of years....

Mapping can play a useful role in [the struggle to reclaim the commons]. The destruction of land and culture caused by big business and centralized government can be displayed visually with great effect. The wrong of clearcutting, suburbs on farmland, or toxic dumps which, in isolation, may seem unassociated, begin magically to communicate a larger evil when shown in graphic relationship. The cruel division of classes and the allocation of poverty based on race, sex, or age by the present political economy cannot be hidden when charted across our urban neighborhoods.

Maps can show a vision for the future more clearly than thousands of words...[However,] no map shows reality perfectly. A map is an icon - a potent representation - but only a skeleton of what is real. The mistake of science is that its goal is to describe the world as a complex machine, and to replace the vagaries of nature's chaos with "management." Counter-mapping is about something else: processes and relationships rather than disembodied facts. The notion that only experts can map is the type of disenfranchisement that [counter-mappers] confront and nullify. [The important thing is] the ability to try [to map], to fill the world again with personal and communal descriptions of time and space.

By Doug Aberley,
excerpted from "Boundaries of Home: Mapping for Local Empowerment,"
1993, New Society Publishers, Gabriola Island, BC

CLASS 1 August 29, 2001
Introduction to the Course;
History of Cartography
(This week's reading Assignment, to be done in advance of Week 2's class, is listed in CLASS 2, below. The reading to be done in advance of Week 3's class is listed in CLASS 3, etc.)

CLASS 2 September 5
Map Elements

Lab Exercise: ArcView GIS Demonstration

Readings: Dorling and Fairbairn, Chapter 1; and Campbell, Chapter 1

CLASS 3 September 12
Basic Mapping Processes

Lab Exercise: Getting to Know ArcView (GTKAV), Chapters 7 & 8

Readings: Dorling and Fairbairn, Chapter 2; and Campbell, Chapter 2

NO CLASSES September 19 and 26

CLASS 4 October 3
Map Projections; and Locational and Land-Partitioning Systems

Lab Exercise: GTKAV, Chapters 9 & 10

Readings: Dorling and Fairbairn, Chapter 3; and Campbell, Chapters 3 & 4

Written Assignment #1: Map Use and Interpretation Exercises (Due 10/17)

CLASS 5 October 10
Map Scales and Generalization Concepts; Measurements from Maps

Lab Exercise: GTKAV, Chapters 11 & 12

Readings: Dorling and Fairbairn, Chapter 4; and Campbell, Chapters 5 & 6

CLASS 6 October 17
Terrain Representation; Contour Interpretation; Topographic Features; Review of Written Assignment #1; Midterm Review

Lab Exercise: GTKAV, Chapters 13 & 14
Readings: Dorling and Fairbairn, Chapter 5; and Campbell, Chapters 8, 9, & 10

<table>
<thead>
<tr>
<th>CLASS</th>
<th>Date</th>
<th>Topic</th>
<th>Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLASS 7</td>
<td>October 24</td>
<td>Midterm Exam: Covers Dorling, Chapters 1-5; and Campbell, Chapters 1-6, 8-10.</td>
<td></td>
</tr>
<tr>
<td>CLASS 8</td>
<td>October 31</td>
<td>Qualitative and Quantitative Information</td>
<td>Campbell, Chapter 11</td>
</tr>
<tr>
<td>CLASS 9</td>
<td>November 7</td>
<td>Cartograms and Special Purpose Maps</td>
<td>Campbell, Chapter 14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Written Assignment #2: Thematic Map Selection and Interpretation (Due 11/28)</td>
<td></td>
</tr>
<tr>
<td>CLASS 10</td>
<td>November 14</td>
<td>Maps and Graphs</td>
<td>Campbell, Chapter 15</td>
</tr>
<tr>
<td>CLASS 11</td>
<td>November 21</td>
<td>Remote Sensing and Aerial Photography</td>
<td>Campbell, Chapters 17 &amp; 18; and Dorling and Fairbairn, Chapter 6</td>
</tr>
<tr>
<td>CLASS 12</td>
<td>November 28</td>
<td>Computer-Assisted Cartography and GIS</td>
<td>Campbell, Chapters 19 &amp; 21; and Dorling and Fairbairn, Chapter 7</td>
</tr>
</tbody>
</table>
CLASS 13 December 5
Map Mis-Use

Lab Exercise: GTKAV, Chapters 25 & 26

Readings: Dorling and Fairbairn, Chapters 8 & 9; and Campbell, Chapter 16

CLASS 14 December 12
Course Review

Lab Exercise: Lab Assignment #2

CLASS 15 December 19
Final Exam: Covers Dorling, Chapters 6-9; and Campbell, Chapters 11, 14-19, & 21.

FURTHER RECOMMENDED READING:


