Basic Mapping: Applications and Analysis
GEP204/GEP504, EES70300
Lehman College, Fall 2011

Instructor:  Dr. Elia Machado-Machado
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E-mail: basicmapping@gmail.com  (I prefer to be reached by email)

Class hours & location:  Monday, 6:00 PM to 9.30 PM, Gillet Hall, Room 322

Office hours:  Monday, 3 to 4:30 PM or by appointment
Gillet Hall, Room 307C (entrance from room 309)

Required Textbooks:

Recommended reading:

Course Description and Objectives:
This course is an introduction to the world of maps and geographic information. It has been designed to provide students new to the world of maps a foundational basis on how to use, interpret, and analyze geographical information. Through a series of lectures, map interpretation exercises, and laboratory exercises, students are taught the variety of ways mapping and GIS can be used in the natural and social sciences as well as in many other fields.

Students will learn about the history of cartography, map projections, map reading and analysis scales and generalization, use and generation of thematic maps, and graphs and charts, as well as digital map applications. In addition, the laboratory sessions will provide hands-on experience with Google Earth, Remote Sensing and Geographical Information Systems applications.

After successful completion of this course, students will be able to:
•  Demonstrate an understanding of the history and social significance of cartography, mapping, and geographic thought.
• Demonstrate an understanding of the elements, projections, and mathematical processes necessary for mapping.
• Demonstrate the ability to interpret maps and cartographic products produced in different eras, for different purposes, and by different cultures.
• Demonstrate the ability to create maps and cartographic products using Geographic Information Systems software.
• Demonstrate an understanding of qualitative and quantitative data and their use in cartographic products.
• Demonstrate an understanding of the principles of Geographic Information Systems and Remote Sensing, as well as their applications.

Prerequisites:
There are no formal prerequisites for this course. However, it is recommended to be familiar with the use of personal computers, files management, and the windows operating system.

Attendance Policy:
I expect you to attend and to be in time for each class. Your participation and contribution are very important, it will greatly benefit you and the rest of the class. Lateness, early leavings, and absences will be noted on the attendance sheets.

Course Guidelines and Ground Rules:
• Come to class in time, read the assigned materials, and be ready to participate. Ask questions if you do not understand something. Asking questions is a key part of learning, and will give me a chance to clarify materials for others as well.
• The office hours are for you. Email me to schedule an appointment if necessary (basicmapping@gmail.com) to discuss your questions or any concerns you have with the class.
• It is recommended that you exchange phone numbers/emails with at least two other students in the class. If you miss a class, it is your responsibility to contact another classmate to get the work you missed, including notes, new assignments, etc. Absence from class will not be a valid excuse for ignorance.
• Please, no cell phones, beepers, checking the internet (unless required in class), or working on other class assignments.
• A grade of “Incomplete” for this course will only be granted in case of a medical or family emergency, discussed with me IN ADVANCE of the Final Exam.
• Failure to show up for the Final Exam will result in a grade of “F” for the course, not an automatic “Incomplete.” “Make-Up” Final Exams will be given only in those cases where it was discussed and I agreed to it IN ADVANCE due to an emergency situation.
• When in doubt about any of the above, COMMUNICATE WITH ME. I have been known to be QUITE REASONABLE in working things out with students.
**Backboard:**
Class information and materials will be posted to Blackboard. Check it often; it is your responsibility to do so.

**Strategies to succeed and grades:**
Your successful performance in this course depends on the following: regular attendance to lectures, active and well prepared participation, timely completion of the assignments, Presentation of one subject in front of the class, and exam performance.

Your final grade will be determined as follows:
- **Assignments:** 40% of the total course grade
- **Midterm exam:** 25% of the total course grade
- **Attendance and Participation:** 10% of the total course grade
- **Final Exam:** 25% of the total course grade

I expect that your work will be of the highest quality. Mediocrity is not rewarded and graduate-level students will be graded more critically than undergraduate students.

**Laboratory work and assignments:**
- Do not take the chance of losing your work. Back it up! Save it to a Flash Drive (1GB or larger should be sufficient) and/or email your work to yourself regularly.
- We will have nine laboratory assignments this semester. Unless otherwise noted, the assignments are due at the beginning of the next class session (e.g., Lab 2 will be due at the beginning of the class introducing Lab 3). Refer to the course schedule (page 5) for a list of the due dates. Assignments received after the class starts will be considered late. If you are not able to come to class the day an assignment is due, it is your responsibility to contact me to let me know that you will not be in class, and you must still get the work to me by the due date.
- Late assignments will not be accepted unless approved by me IN ADVANCE of the due date, and only if due to legitimate medical or family emergency.
- You can learn a lot from consulting with others (without disrupting the class) during the lab sessions and map interpretation exercises. BUT, I expect that the assignments you turn in are your own work. Individual assignments that are too similar to other student’s work will be considered plagiarism, and will result in disciplinary actions for all students involved (the copIER as well as the copyEE).

**Lab Report Format:**
- All lab reports should be written with 12 point type, 1.5 spacing between lines, and 1” margins all around and the pages should be numbered.
- The first page should include your full name and lab number. Please include also your name on the other pages.
• Hand written work will not be accepted except when required in class.
• It is very important for me that you also include a short paragraph at the end of your report regarding your experience with the lab, what worked, what did not work, etc. If things are not working well, I want to know!
• Unless otherwise specified, your lab report file should be saved as a word document (.doc or .docx) using this naming convention: YOURLASTNAME_Lab#, for example: Jones_Lab1.doc. This work should be emailed to basicmapping@gmail.com.

Class Presentations:
We will have two class sessions towards the end of the semester dedicated to class presentations. The presentations will focus on how geographical analysis and techniques can be used in a subject area of your choice such as Conservation Planning, Public Health, Urban Planning, Natural Resource management, Climate change research, Transportation, Defense, Education, Marketing & Real State, Risk mapping and Emergency Management, Humanitarian Assistance, Community Empowerment, Environmental Justice, etc...

The students will work in pairs and prepare a 10-15 minutes presentation (PowerPoint) that addresses three major points: 1) the focus and importance of their subject area, 2) how geographical methods and/or analysis can contribute to their area, and 3) an illustration of point 2 with some specific examples. The outline of the presentations should be discussed with me at least 4 days before the presentation is due. The presentations will be evaluated based on your timing, talk delivery, and the quality of the information provided. This last point is very important, the presentations should include all relevant references (minimum of four) from varying sources such as scientific journals and news papers (not only Wikipedia and similar).

Academic Integrity
Lehman College is committed to a standard of academic integrity for all students. Students are responsible for the honest completion and representation of their work, for the appropriate citation of sources, and for respect of others' academic endeavors." Students are subject to disciplinary action for academic misconduct. Please refer to the College Policies and Procedures regarding Academic Integrity in the Lehman Undergraduate College Bulletin (http://www.lehman.edu/undergraduate-bulletin/academicintegrity.htm) and the Student Handbook (http://www.lehman.cuny.edu/student-affairs/documents/student-handbook-02.pdf) for detailed information.

Accommodating Disabilities
Lehman College is committed to providing access to all programs and curricula to all students. Students with disabilities who may need classroom accommodations are encouraged to register with the Office of Student Disability Services. For more information, please contact the Office of Student Disability Services, Shuster Hall, Room 238, phone number, 718-960-8441.
Schedule (subject to change, additional readings will be provided).

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<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Subject/Activity</th>
<th>Read BEFORE class</th>
<th>Lab Sessions</th>
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<tbody>
<tr>
<td>1</td>
<td>Aug. 29</td>
<td>Introduction to the course &amp; History of Cartography</td>
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<tr>
<td>2</td>
<td>Sep. 05</td>
<td>No Class!! Labor Day</td>
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<td>3</td>
<td>Sep. 12</td>
<td>Map Elements</td>
<td>Campbell: Ch. 1</td>
<td>Lab 1: Google Earth</td>
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<td>*DF: Ch. 1</td>
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<td>4</td>
<td>Sep. 19</td>
<td>Coordinate Systems and Map Projections</td>
<td>Campbell: Ch. 2, 3, &amp; 4</td>
<td>Lab 2: Map Projections</td>
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<td></td>
<td>**KW: Ch. 5</td>
<td>(Lab 1 Due)</td>
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<td>5</td>
<td>Sep. 26</td>
<td>Map Scales &amp; Generalization Concepts</td>
<td>Campbell: Ch. 5 &amp; 6</td>
<td>Lab 3: Map Reading and Analysis</td>
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<td></td>
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<td></td>
<td>DF: Ch. 2 (pp. 38-42) &amp; 5</td>
<td>(I) (Lab 2 Due)</td>
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<td>KW: Ch. 5(pp. 94-95)</td>
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<td>6</td>
<td>Oct. 03</td>
<td>Terrain Representation &amp; Contour Interpretation</td>
<td>Campbell: Ch. 8, 9 &amp; 10</td>
<td>Lab 4: Map Reading and Analysis</td>
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<td>Midterm Review</td>
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<td>(II) (Lab 3 Due)</td>
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<td>7</td>
<td>Oct. 10</td>
<td>No Class!!</td>
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<td>8</td>
<td>Oct. 17</td>
<td>Midterm</td>
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<td>9</td>
<td>Oct. 24</td>
<td>GIS Introduction and Spatial Models</td>
<td>Campbell: Ch. 21</td>
<td>Lab 5: Introduction to ArGIS</td>
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<td>(Lab 4 Due)</td>
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<td>11</td>
<td>Nov. 07</td>
<td>Representing Information in GIS &amp; Cartographic design</td>
<td>Campbell: Ch. 11</td>
<td>Lab 6: Mapping with ArcGIS</td>
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<td>DF: Ch. 7</td>
<td>(Lab 5 Due)</td>
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<td>12</td>
<td>Nov. 14</td>
<td>Maps and Graphs &amp; GIS Operations</td>
<td>Campbell: Ch. 15</td>
<td>Lab 7: Vector operations</td>
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<td>(Lab 6 Due)</td>
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<td>13</td>
<td>Nov. 21</td>
<td>Remote Sensing &amp; Aerial Photography</td>
<td>Campbell: Ch. 17 &amp; 18</td>
<td>Lab 8: Introduction to Remote</td>
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<td>DF: Ch. 6</td>
<td>Sensing with Idrisi</td>
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<td>14</td>
<td>Nov. 28</td>
<td>Remote Sensing &amp; Raster Operations</td>
<td>Readings TBD</td>
<td>Lab 9: Raster applications</td>
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<td>(Lab 8 due)</td>
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<tr>
<td>15</td>
<td>Dec. 05</td>
<td>GIS and RS applications</td>
<td>Readings TBD</td>
<td>Case studies presentations</td>
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<tr>
<td>16</td>
<td>Dec. 12</td>
<td>The Power of Maps &amp; Class Wrap UP</td>
<td>Campbell: Ch. 16</td>
<td>Case studies presentations</td>
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<td>DF: Ch. 4 &amp; 8</td>
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<td>17</td>
<td>Dec. 18</td>
<td>Final Exam</td>
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*DF: Dorling and Fairbairn, **KW: Krygier and Wood (provided in class)