Syllabus - Fall 2013
EAS 308 -- ESS Modeling/Databases

Room: Marshak 044
Instructor: Prof. Karin Block
Office: MR 717; Hours by appointment
Email: kblock@ccny.cuny.edu
Phone: (212) 650-8543

Course Description: Application of principles of Earth System Science to the assessment and modeling of global and local environmental problems. Introduction to sampling, databases containing earth science data, data processing and analysis and models of earth systems. REQUIRED. Prerequisite: EAS 217

Course Structure: This three credit course has two 75 minute lectures per week.

Readings: Readings will be handed out or posted on Blackboard. Assignments and Powerpoint presentations will be on Blackboard. It is your responsibility to check the Blackboard site and email for any announcements.

Grading: Your grade is based on two exams, in-class exercises and homework. No makeup exams will be given except under compelling, documented circumstances. For example, a note from a qualified medical professional (i.e., a physician, physician’s assistant, or nurse practitioner).

20% Midterm Exam
20% Final Exam
50% Problem sets, homework assignments, individual and group exercises
10% Attendance

Attendance: Punctual attendance is mandatory. 10% of your grade will be the percentage of classes you attend. If you must miss a class, arrange to obtaining hand-outs, materials, notes from a classmate. If you miss more than 4 lecture classes, I reserve the right to assign you a grade of WU.

Academic Integrity: All students are expected to uphold the ethical standards of CUNY’s academic integrity policy. To obtain the details of the academic integrity policy, visit the following URL: http://www1.ccny.cuny.edu/current/integrity.cfm. In addition, the Policy of Academic Integrity can be found in the Undergraduate Bulletin. All students must read policies regarding plagiarism and cheating. Students who are caught plagiarizing or cheating will be reported to the Office of Academic Integrity and will automatically fail the assignment.

I strongly recommend that you read up on plagiarism here: (http://bit.ly/1dmVh3z) and take the self-test at the bottom of the page to make sure you understand how to cite properly and what constitutes plagiarism.

Students with Disabilities: The City College of New York complies with the Americans with Disabilities Act in making adjustments for qualified students with disabilities. Students who so qualify must identify themselves to their instructors at the beginning of the semester so that the latter may offer provisional accommodations.

Electronic Devices: Cell phones must be turned off or set on vibrate during lectures. During exams all electronic devices, except for calculator or computer, when needed, must be turned off. The class is being held in a computer lab, which may tempt you to be distracted. Anyone caught using their phones or
computers when not authorized, chatting on the web, doing other work, or checking social media during class will lose their attendance credit for the class and will be asked to leave.

**Course Learning Outcomes**

After successful completion of this course students will be able to:
1. Differentiate between data and information
2. Differentiate between data storage vessels, e.g., databases and spreadsheets
3. Identify models used in analysis of geologic data
   a. Conceptual, numerical, mathematical models
   b. Data models used for GIS and print maps
4. Make decisions on which data analysis tool is appropriate for a variety of problems
5. Determine the quality of existing (legacy), laboratory and field-based data
6. Find data/information quality using metadata
7. Analyze/interpret/visualize data and information on plots, graphs, charts, maps
8. Collect data in the field/lab, define data quality parameters, create metadata, articulate data quality, analyze data using statistical and/or visualization tools, and present project analysis findings

**To meet the objectives the course you will use:**

- Existing datasets and databases
- Statistical or Plotting software such as Excel, Origin, SPSS
- Data collection in the field
- Maps

**Data from anonymous course outcome surveys collected by the science division for accreditation purposes will be used to make improvements to the course. Participation is entirely voluntary. Students who do not wish to participate can opt out by not submitting a completed survey at the end of the course.**
**TENTATIVE SCHEDULE**

**Important Dates:**
- Thursday, 9/5/13  No classes
- Tuesday, 10/15/13  Monday schedule
- Thursday, 11/28/13  Thanksgiving

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<thead>
<tr>
<th>Topic</th>
<th>Readings</th>
<th>Assignment</th>
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<tbody>
<tr>
<td>Unit 1: Elementary Statistics</td>
<td>Weeks 2-4 9/3/13 to 9/17/13</td>
<td>U.S. Historical Climate; Problem Set 1</td>
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<td>Unit 2: Matrix Algebra</td>
<td>Weeks 4-5 9/19/13 to 9/24/13</td>
<td>Davis Ch. 3; Problem Set 2</td>
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<td>Unit 3: Sequences of Data</td>
<td>Weeks 5-7 9/26/13 to 10/8/13</td>
<td>Davis Ch. 4; Streams; Problem Set 3</td>
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End of Exam 1 material; Tentative Midterm date: 10/22/13

| Unit 4: Databases            | Weeks 7-10 10/10/13 to 10/31/13 | In Class Exercise, Field Exercise, Database Exercise |
| Unit 5: Geospatial Data      | Weeks 11-12 11/5/13 to 11/14/13 | TBA; Grinnell Glacier Exercise; sediments          |
| Unit 6: Multivariate Data    | Weeks 13-16 11/19/13 to 12/12/13 | Davis Ch. 5; Geochemical data, online exercise, Problem set 4 |

Final Exam