Environmental Geology

ENV 3130 Course Outline and Syllabus – Spring 2011

Instructor: Leslie Kanat, Ph.D.

Contact: Phone: (802) 635-1327, FAX: (802) 635-1461
Email: les.kanat@jsc.edu
Course web page: http://kanat.jsc.vsc.edu

Office hours: Scheduled office hours are from 8:30 to 9:30 a.m., Tuesday through Thursday; otherwise, stop in anytime or schedule an appointment. My office is located in Bentley 307. If you require extra help, have any concerns or questions about the course or course content, need advice, or just want to talk, then my door is always open. If the office hours listed above do not work with your schedule then please contact me and we will find a time to meet. We could set up regular meeting times if you so choose.

Sessions: Lecture on Tuesday and Thursday, 11:30 – 12:45, Bentley 102
Lab on Wednesday, 1:00 – 4:00, Bentley 102 or the PLUIMMS Lab (LLC 216)


Course description and objectives

Environmental geology is a branch of applied geology that focuses on the relationship between people and the physical environment; this relationship is interactive. This course will expose students to hazardous earth processes such as floods, seismic activity, landslides, volcanic activity, coastal threats, and other topics. An understanding of soil formation, soil texture, porosity, permeability, and groundwater flow is of utmost importance to environmental issues and will also be addressed in this course. The knowledge gained in this course should help one assess risk, make intelligent decisions about development in geologically reasonable regions, and make connections between human health and geological conditions. The textbook will be used in conjunction with the Internet, newspapers, and journal articles to develop a series of three papers on the topics relevant to this course.
Quantitative reasoning

Numbers are everywhere and numbers have meaning. Each of us must be competent in using and reading quantitative data, understanding quantitative evidence, and applying basic quantitative skills to solve today’s problems. We will develop and apply the following quantitative skills throughout the semester: read data tables; develop and interpret graphs; calculate percentages and ratios; use scientific notation, exponential growth and linear equations; and communicate information. This course meets the JSC requirements for a quantitatively enhanced course.

Writing intensive nature of this course

This course satisfies the writing intensive requirement for graduation at JSC. It is important that environmental scientists clearly communicate with others. A significant component of this course, therefore, will focus on the spoken word, the written word, and presentation style (on paper and in the classroom). We will focus on the following types of writing: email, research papers, lab reports, methods, and explanatory papers. Opportunities will exist to develop skills in the development of a thesis, abstract, structure of a document, use of technology, grammar, spelling, punctuation, and presentation style. Class time will be devoted to discussion of writing and speaking.

Oral presentations

Two oral presentations will be required; the second presentation will be scored according to the VSC Oral Communication Standards and thus count toward one of the two required oral presentations needed to graduate from JSC.

Assessment

21% Exploratory papers (5%, 7% and 9%, respectively)
35% Laboratory work and homework assignments
10% PowerPoint presentations (4% and 6%)
9% Quizzes
5% Effort (class participation, helping others, attitude, attendance)
20% Final exam: Tuesday, 10 May 2011 at 10:30 a.m. in B102
Class management

- The course is structured as a four-credit lecture, laboratory, and field-based course. We will use the meeting times as appropriate for our needs.
- Please come to class a few minutes early so that everyone is ready to start on time.
- I expect a lot out of you and I place a great deal of responsibility on you – I cannot do your learning for you.
- You will have several opportunities, during class, to work in small groups.
- I do not usually take attendance, but I do expect you to make up all work prior to the next class. Find out from another student what you missed and learn the material.
- A textbook is required for this course and supplemental reading material is available in the library; additional literature can be signed out from my office.
- Read appropriate sections from the book prior to attending lecture, get ready to discuss the content in class, keep good notes, ask questions in class, and come see me when difficulties arise.
- Do not use the following words in class: ‘you know’ and ‘like’; do not say ‘there is’ when ‘there are’ is correct – I will interrupt the speaker and help identify the problem (each time). Please be prepared to be interrupted and then re-focus on the question or comment. We will attempt to break poor speaking habits – it will be difficult for all of us involved, so please help.

Exams, quizzes, and homework

- All exams and quizzes are cumulative; no grades are dropped.
- Unannounced two-minute quizzes will be given throughout the semester at the start of the class period.
- All material submitted for a grade, including email, must be presented in professional form – use the technology.
- All activities, assignments, and brief lecture summaries will be posted online.
- Assignments are due at the beginning of the class period (according to the clock in the classroom) – otherwise they are late. For each calendar day (24-hour period – including weekends and holidays) an assignment is late it will be downgraded by 10%. If you come to class late, then the paper is late. I do not need to know why the paper was submitted after the start of class (for example, long print queues); accommodations, however, will be made for extraordinary circumstances.
- There are no opportunities to make-up missed laboratories or field work.
- I will be glad to help you with any assignment at any time except the day before the assignment is due – do not procrastinate.
Writing, library, and references

- See the course web page for writing guidelines and suggestions.
- Numerous books and journal articles will be placed on reserve in the library – please see appropriate list on the course web page and spend time in the library.

Prerequisites for this course

- Satisfactory completion of ENV 1050: Introduction to Earth Science.
- Satisfactory completion of ENG 1051: College Writing.
- Satisfactory completion of MAT 1080: Introduction to Quantitative Reasoning, or passing the Quantitative Reasoning Assessment.

Plagiarism

Students at Johnson State College are expected to be honest in all their academic work. Acts of dishonesty for which a student may be disciplined include, but are not limited to, receiving or providing unauthorized assistance on coursework or plagiarizing the work of others in writing assignments. The American Heritage Dictionary defines plagiarism in the following way: “To steal or use (the ideas or writings of another) as one’s own.” You are responsible for knowing what specific acts constitute plagiarism. If you are unsure, then consult me, or read the Undergraduate Catalogue. Academic dishonesty in any form is prohibited and unacceptable.

Accommodations

Students with a documented disability who require accommodations should acquire an Accommodations Form from Academic Support Services (Dewey 123, phone 635-1264).

Order of topics to be presented

There are many topics relevant to environmental geology that would be interesting to investigate. Look at the book… there is an abundance of exciting areas. We have limited time and therefore we have to make some hard choices to determine the important topics within each chapter. With this in mind, we will advance through the material in the book nearly equivalent to the way it is presented (and skip some of the topics along the way – presumably those that have been covered in other classes).
Assignments and due dates for Environmental Geology – Spring 2011

<table>
<thead>
<tr>
<th>Week</th>
<th>Chapter</th>
<th>Topic</th>
<th>Assignment</th>
<th>Lab (location and assignments)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Introduction to course content</td>
<td>Exploratory Paper 1: Population [F 10] HW 1: Email and citations [J 27]</td>
<td>PLUIMMS: Blackboard, Email, Word, and Excel</td>
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<td>4</td>
<td>6</td>
<td>Rivers and flooding</td>
<td>HW 4: Stream flow analysis [M 3]</td>
<td>PLUIMMS: Stream flow</td>
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<tr>
<td>5</td>
<td>8</td>
<td>Earthquakes</td>
<td>Exploratory Paper 2: Flooding or earthquakes [M 31]</td>
<td>PLUIMMS: Stream flow</td>
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<tr>
<td>6</td>
<td></td>
<td>Winter Break</td>
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<tr>
<td>7</td>
<td>9</td>
<td>Volcanoes</td>
<td>Exploratory Paper 3: Eustacy or water pollution [A 28]</td>
<td>No lab</td>
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<tr>
<td>8</td>
<td>10</td>
<td>Coastal Zones</td>
<td>PowerPoint 2: Earthquakes, groundwater, or eustatic changes [M 4]</td>
<td>B102: PowerPoint Presentations</td>
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<tr>
<td>9</td>
<td>12</td>
<td>Groundwater</td>
<td>HW 5: Permeameter lab report [M 24]</td>
<td>B104a: Permeameter lab</td>
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<tr>
<td>10</td>
<td>13</td>
<td>Water pollution</td>
<td>–</td>
<td>Trip: Johnson Water Treatment Facility</td>
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<tr>
<td>11</td>
<td>7</td>
<td>Mass wasting</td>
<td>–</td>
<td>Trip: Jeffersonville Landslide</td>
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<tr>
<td>12</td>
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<td>Spring Break</td>
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<td>13</td>
<td>3</td>
<td>Soil</td>
<td>HW 6: Soil texture lab report [A 21]</td>
<td>B104a: Soil texture lab</td>
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<td>14</td>
<td>15</td>
<td>Energy Resources</td>
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<td>Trip: CH2M HILL or ENPRO</td>
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<td>15</td>
<td>16</td>
<td>Climate change</td>
<td>–</td>
<td>B102: Climate lab</td>
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<tr>
<td>16</td>
<td>17</td>
<td>Air Pollution</td>
<td>–</td>
<td>B102: PowerPoint Presentations</td>
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F Final exam: Tuesday, 10 May 2011 at 10:30 a.m. in B102.

Due dates are in brackets [Month day].
Additional homework will be assigned as appropriate.
We will modify this syllabus, and the assignments, as necessary and fitting.