Science 210A

Lectures: M, F 12:00 - 12:50 pm, Parkinson 124

Labs: Life Science II 0453 (check your schedule for your lab section)

Instructor: Lea Gilbertson
Office: Parkinson 208
E-mail: lagilber@siu.edu, lagilber@gmail.com (use this one, as I check it)
Phone: (618) 453-4579
Office Hours: MW 3-5, T12-2, or by appointment, or any time you see me in my office except MWF before 2

Class Readings:
Conceptual Integrated Science, by Hewitt, Lyons, Suchocki and Yeh, lab exercises must be downloaded from D2L (siu online). Your TA will not provide any copies

Course Rationale:
Students pursuing Illinois certification to teach K-8 (Elementary Education major at SIUC need a comprehensive background in the physical sciences, earth/space science and the life sciences. SCI 210A and 210B provide an introduction to the content delineated in the national and state science education standards. Science 210A emphasizes the physical and earth sciences. A passing grade in SCI 210A is strongly recommended before taking SCI 210B. Completion of a college-level algebra course or a strong high school math background is highly recommended.

Instructional Mode:
The course will be organized into weekly units as follows:
- Monday lecture
- Lab: hands on exercise relating to this week's topic
- Friday lecture

Desire to learn (D2L): helpdesk website for students: http://cte.siu.edu/d2lhelp
- you need to have access to D2L in order to
  o download lecture notes
  o download weekly labs
  o get other important information

Homework assignments:
There will be homework assigned during the lecture time. While homework may be prepared with a friend or study partner it is expected to be your own original work. Plagiarism, defined as representing the work of another person as one’s own personal work, will not be tolerated. If you use ideas presented by another person, you must “quote” or put their ideas into your own words and reference the citation appropriately. Such work (or works of both parties if copying is involved) will be given a zero and the incident reported for possible disciplinary action under the auspices of the academic dishonesty section of the student conduct code.

Extra Credit:
Two extra credit assignments requiring a time commitment outside the classroom are available (each is worth 5% on top of your final grade). These are voluntary commitments and it might require effort to schedule these opportunities on your part!
1. egg drop experiment (will take place at Neckar’s)
2. Astronomy night (requires to be very flexible during the evening hours!!!
In-class activities = attendance:
In addition to homework assignments, there will be activities (questions, problems, etc) presented during lecture time that will contribute 15% to your final grade. These activities are to be turned in at the end of the lecture in person unless instructed otherwise. In-class activities cannot be made up. A 0 for any in-class activity will only be dropped from a students’ grade book, if the student has an acceptable documented excuse for his/her absence.

Labs:
Labs need to be downloaded from D2L. While notes and data are shared in many labs, it is expected that lab reports will be your own original work. Also in labs, plagiarism will not be tolerated. It is highly recommended that you keep back-up copies of lab reports on some permanent storage media in case a question might arise.

Quizzes:
There will be a quiz before every laboratory session. Generally there are no makeup quizzes. Please see the quiz make-up policy for the list of valid exceptions. The lowest two quiz grades will be dropped. Quizzes will cover material from that week’s laboratory reading, and test how well you are prepared for the lab. Your TA will give your further instructions. The lowest quiz grade will be dropped.

Exams:
There will be three exams. They will not be cumulative. The exams will cover the topics from the last exam date up the next exam date. Each exam is worth 10%. Should you miss an exam, please see the make-up policy for the list of valid exceptions. Not attending an exam will result in a 0 in the grade book.

Policy on Making-Up Quizzes and Exams:
In order to get a make-up quiz/exam you will need to fill the appropriate request form (go to http://www.siu.edu/~vcaap/PVC%20Forms.htm to get them). Make-up quizzes/exams will only be given for documented valid reasons. Valid reasons that justify a make-up quiz/exam are limited to the following list:
- Religious observance;
- Military service;
- Jury duty or having to appear in court;
- Bereavement (i.e., death of members of your immediate family);
- Official University business (properly documented, using appropriate forms by an athletic or academic advisor);
- Properly documented medical reason that prevents you from taking the quiz. A slip that the student attended the Student Health Center does not fulfill this requirement; being hospitalized, or having a doctor’s certificate stating that you cannot take the quiz/exam, does.
If you need, and qualify for, a make-up quiz/exam, you need to contact the instructor at the earliest possible time, before the quiz/exam (unless it is an emergency).

Readings:
Students are expected to complete assigned readings by the due dates and to take concise, well organized notes. Questions from the reading assignments will be included in the exams.

Grading:
Lab Quizzes …….15 %
Labs …………………….30 %
Homework ……………10 %
In-class activities…15 %
3 Exams ………………30 %
Course Schedule for Science 210A (Subject to Change)

**Week 1**
M 8/24  Introduction  
Lab 1: Basics
F 8/28  Describing motion
Reading due  
Chapter 1

**Week 2**
M 8/31 Motion and vectors  
Lab 2: Motion
F 9/4 Newton’s laws of motion
Reading due  
Chapter 2

**Week 3**
M 9/7 NO CLASS: Labor Day  
Lab: NO LABS
F 9/11 Momentum and energy
Reading due  
Chapter 4

**Week 4**
M 9/14 Work, power and energy (first extra credit option available)  
Lab 3: Newton’s second Law
F 9/18 Heat: Temperature and absolute zero
Reading due  
Chapter 4

**Week 5**
M 9/21 The laws of thermodynamics, heat transfer  
Lab 4: Heat
F 9/25 Midterm 1
Reading due  
Chapter 6 cont.

**Week 6**
M 9/28 Electricity and magnetism, Coulomb’s law  
Lab 5: Electricity
F 10/2 Magnetic fields
Reading due  
Chapter 7

**Week 7**
M 10/5 Waves --- Sound and light  
Lab 6: Reflection/Refraction
F 10/9 Atoms and the periodic table
Reading due  
Chapter 8

**Week 8**
M 10/12 NO CLASS: Fall Break  
Lab: NO LABS
F 10/16 Investigating matter
Reading due  
Chapter 13

**Week 9**
M 10/19 Chemical bonds and mixtures  
Lab 7: Boyles Law
F 10/23 Chemical reactions
Reading due  
Chapter 11

**Week 10**
M 10/26 Midterm 2  
Lab 8: Rocket Science
F 10/30 Chemical reactions continued
Reading due  
Chapter 12

**Chapter 13 cont.**
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<th>Week 11</th>
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<th>Chapter. 23</th>
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<tbody>
<tr>
<td>M 11/2</td>
<td>Minerals</td>
<td></td>
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<td>F 11/6</td>
<td>Igneous and metamorphic rocks</td>
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<td>Chapter. 23</td>
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<tr>
<th>Week 12</th>
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<th>Chapter 23</th>
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<tr>
<td>M 11/9</td>
<td>Sedimentary rocks with an introduction to stratigraphy</td>
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<td><strong>Lab:</strong> NO LABS Veterans Day</td>
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<td>F 11/13</td>
<td>Continental Drift: Plate Tectonics Precursor</td>
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<th>Week 13</th>
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<th>Chap. 24.1 – 24.4</th>
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<tbody>
<tr>
<td>M 11/16</td>
<td>Modern Plate tectonics</td>
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<td><strong>Labs 10: Rocks</strong></td>
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<td>Chapter 22</td>
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<td>F 11/20</td>
<td>Mountains and plains</td>
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<tr>
<th>Week 14</th>
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<th>Chap. 27.1 – 27.2</th>
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<tr>
<td>M 11/23</td>
<td>Earthquakes and their effects</td>
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<td><strong>Lab:</strong> NO LABS Thanksgiving</td>
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<td>Chapter 28</td>
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<tr>
<td>F 11/27</td>
<td>NO CLASS: Thanksgiving</td>
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<th>Week 15</th>
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<th>Chapter 29</th>
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<tr>
<td>M 11/30</td>
<td>The solar system</td>
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<tr>
<td><strong>Lab 11: Earthquakes</strong></td>
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<tr>
<td>F 12/4</td>
<td>The universe</td>
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<th>Week 16</th>
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<th>Chap 23, p. 696-698</th>
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<td>M 12/7</td>
<td>A brief history of the earth: evolution of the species</td>
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<td><strong>Lab 12: Dinosaurs</strong></td>
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<td>Chapter 29</td>
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<tr>
<td>F 12/11</td>
<td>A brief history of the earth: dance of the continents</td>
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| Week 17: Finals Week |          |          |
| Dec. 14 | Final Exam 12:30 to 2:30 |          |

**Emergency Procedures.** Southern Illinois University Carbondale is committed to providing a safe and healthy environment for study and work. Because some health and safety circumstances are beyond our control, we ask that you become familiar with the SIUC Emergency Response Plan and Building Emergency Response Team (BERT) program. Emergency response information is available on posters in buildings on campus, available on BERT's website at www.bert.siu.edu, Department of Safety's website www.dps.siu.edu (disaster drop down) and in Emergency Response Guideline pamphlet. Know how to respond to each type of emergency.

Instructors will provide guidance and direction to students in the classroom in the event of an emergency affecting your location. It is important that you follow these instructions and stay with your instructor during an evacuation or sheltering emergency. The Building Emergency Response Team will provide assistance to your instructor in evacuating the building or sheltering within the facility.