Earth Science Syllabus, GEOL 1401-23501
Brookhaven College, Spring 2020

Contact Information
Diana Vineyard: Email: dvineyard@dcccd.edu
Alexander Zekulin: Email: azekulin@dcccd.edu

Lecture [Diana Vineyard]: Tuesday, 5:40 – 8:30 PM; Room K108
Lab [Alexander Zekulin]: Thursday, 5:40 – 8:30 PM; Room K108

Required Materials:
- TEXTBOOK: Foundations of Earth Science
  Edition: 8th, 2017
  ISBN: 9780134184814
  Author: Lutgens
  Publisher: Pearson

- LAB MANUAL: Applications & Investigations in Earth Science
  Edition: 9th, 2019
  ISBN: 9780134746241
  Author: Tarbuck
  Publisher: Pearson

Course Description: This course is for the non-science major. It is an introductory survey of physical geology, historical geology, oceanography, meteorology, and astronomy. It relates the interaction of the earth sciences to the physical world. (3 Lec, 3 Lab.)

Learning Outcomes:

GEOL 1401 Lecture learning outcomes. Upon successful completion of this course, students will:
1. Explain the current theories concerning the origin of the Universe and of the Solar System.
2. Explain the place of Earth in the Solar System and its relationships with other objects in the Solar System.
3. Relate the origin and evolution of Earth’s internal structures to its resulting geologic systems, including Earth materials and plate tectonic activities.
4. Explain the operation of Earth’s geologic systems and the interactions among the atmosphere, the geosphere, and the hydrosphere, including meteorology and oceanography.
5. Explain the history of the Earth including the evolution of earth systems and life forms.

GEOL 1401 Lab learning outcomes. Upon successful completion of this course, students will:
1. Classify rocks and minerals based on chemical composition, physical properties, and origin.
2. Apply knowledge of topographic maps, diagrams, and/or photographs to identify landforms and explain the processes that created them.
3. Differentiate the types of plate boundaries, explain the processes that occur at each and identify associated structural features on maps, block diagrams and cross sections.
4. Apply relative and numerical age-dating techniques to construct geologic histories.
5. Measure atmospheric processes that affect weather and climate.
6. Describe the composition and motion of ocean water and analyze the factors controlling both.
7. Compare properties and motions of objects in the solar system.
8. Demonstrate the collection, analysis, and reporting of data.

Attendance Policy: Roll will be taken at every lecture and lab as part of the course’s requirement.

Exam/Quiz Policy: The purpose of the course schedule is to give you advance notice of required readings and exam dates. On the day of exam, no one may begin an exam or quiz after another student has finished and turned in his/her exam paper. Don’t be late. If you leave the room during an exam, you have finished the exam. Anyone suspected of cheating on an exam will receive a zero for the exam grade. Don’t cheat.
METHOD OF EVALUATION

ASSIGNMENTS POINTS
Lecture Assignments 65 %
Weekly Discussion Questions/Quizzes 15 %
Midterm Exam 25 %
Final Exam 25 %

Lab Assignments 35 %
10 labs at 2% each 20%
1 Lab Practical (Rock and Mineral Identification) 10%
Rock or Mineral Elevator Speech EC Presentation 5%

Total: 100 %

Final grade determination: A=90-100; B=80-89; C=70-79; D=60-69; F=0-59

KEY DATES FOR SPRING SEMESTER 2019
Professional Development: Thursday - Friday, February 27 - 28
Spring Break: Monday - Friday, March 16 - 20
Last day to drop: Thursday, April 16
Good Friday Holiday: Friday, April 10
Final Exam: Tuesday, May 12; 6:00 PM

COURSE SCHEDULE
The course schedule may vary slightly. Any changes to this syllabus will be announced in advance and posted on eCampus. Some lectures may be accompanied with relevant films/videos. Please visit the “External Links” often for useful websites that provide support information.

<table>
<thead>
<tr>
<th>DATE</th>
<th>LECTURE TOPICS</th>
<th>CHAPTER</th>
<th>LAB DATE and TOPICS</th>
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</thead>
<tbody>
<tr>
<td>Jan 21</td>
<td>The Nature of the Solar System</td>
<td>Ch 15</td>
<td>Jan 23 Introduction &amp; Global Locations</td>
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<td>Jan 28</td>
<td>Beyond Our Solar System</td>
<td>Ch 16</td>
<td>Jan 30 Patterns in the Solar System</td>
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<td>Feb 4</td>
<td>Matter and Minerals</td>
<td>Ch 1</td>
<td>Feb 6 Minerals</td>
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<td>Feb 11</td>
<td>Rocks: Materials of the Solid Earth</td>
<td>Ch 2</td>
<td>Feb 13 Rocks</td>
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<td>Feb 18</td>
<td>Landscapes Fashioned by Water</td>
<td>Ch 3</td>
<td>Feb 29 Rock &amp; Mineral Identification (TEST)</td>
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<td>Feb 25</td>
<td>Glacial and Arid Landscapes</td>
<td>Ch 4</td>
<td>Feb 27 (NO LAB)</td>
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<td>Mar 3</td>
<td>MIDTERM EXAM, Chapter 15, 16, 1-4</td>
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<td>Mar 5 Rock &amp; Minerals Elevator Speech</td>
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<td>Mar 10</td>
<td>Plate Tectonics</td>
<td>Ch 5</td>
<td>Mar 12 Plate Tectonics</td>
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<td>Mar 16-20</td>
<td>SPRING BREAK</td>
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<td>SPRING BREAK</td>
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<td>Mar 24</td>
<td>Restless Earth: Earthquakes, Structure</td>
<td>Ch 6</td>
<td>Mar 26 Earthquakes</td>
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<td>Mar 31</td>
<td>Volcanoes and Other Igneous Activity</td>
<td>Ch 7</td>
<td>Apr 2 Volcanoes</td>
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<td>Apr 7</td>
<td>Geologic Time</td>
<td>Ch 8</td>
<td>Apr 9 Geologic Time</td>
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<td>Apr 14</td>
<td>Oceans and our Survival</td>
<td>Ch 9</td>
<td>Apr 16 Oceanography</td>
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<td>Apr 21</td>
<td>The Restless Ocean</td>
<td>Ch 10</td>
<td>Apr 23 Waves, Currents and Tides</td>
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<td>April 28</td>
<td>Heating the Atmosphere and Thermodynamics</td>
<td>Ch 11</td>
<td>Apr 30 Heating the Atmosphere</td>
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<td>May 5</td>
<td>Atmosphere in Motion</td>
<td>Ch 12</td>
<td>May 7 Final Presentations</td>
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<td>May 12</td>
<td>FINAL EXAM, Chapters 5-12; 6:00 PM</td>
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INSTRUCTOR’S RIGHT TO MODIFY: The instructor has the right to add, delete, or revise segments of this course syllabus.
You must pass the Lab, in order to pass the class.