Onondaga Community College
Syracuse, New York

GEO-106: Environmental Geology
Section: 003 & 401 (9:30 – 10:45 & 6:00 – 7:15)
Fall 2017

Course Information:
Room(s): Ferrante 359 / 367
(9:30 – 10:45 & 6:00 – 7:15)

Textbook: Intr. to Environmental Geology, 5th Ed.,
by Edward Keller, Prentice Hall

Instructor:
Mr. Calvin K. Prothro; PG
Office: 371 Ferrante
Telephone: (315) 498-2062
E-mail: prothroc@sunyocc.edu
Webpage: http://myhome.sunyocc.edu/~prothroc/

Office Hours: M, W 2:00 – 2:45 pm & 5:00-6:00; T 11:00am – 1:30pm; Th 2:00 – 3:00; F 2:30 – 3:00
and by appointment.

Course Objectives: This course is an introduction to the principles of applied geological science, as it
relates to solving environmental problems. As such, the course provides an introduction into scientific
studies of human interaction with the geologic environment, including the lithosphere, hydrosphere,
atmosphere, and biosphere. Topics of study will include; human population dynamics, soil generation and
erosion, energy and mineral resources and management, waste management and disposal, water resources
and water rights, water and air pollution, climate change, and related geologic principles that interact with
these environmental problems. This course along with its optional laboratory course GEO-106L satisfies
the requirements of those curricula demanding a science or laboratory science course. Only GEO-106L
may be used with this course to represent a single laboratory science course. GEO-106 consists of three
one-hour lectures or equivalent.

STUDENT LEARNING OUTCOMES:

Upon satisfactory completion of this course, the successful student will be able to:

1) Utilize the vocabulary and basic models that describe Earth science phenomena.
2) Identify basic Earth materials (rocks and minerals) and the processes that are instrumental in their
   formation, and understand their economic & societal importance.
3) Demonstrate and understand the Earth’s internal structure and dynamics and relate these to other
   Earth systems (e.g. atmosphere, hydrosphere, and biosphere) so that students can describe
   environmental unity and relate this to the concept of sustainability.
4) Demonstrate and understand environmental change within the context of geologic time and human
   interaction.
5) Demonstrate and understand how human population has changed over time, and be able to
   describe how these changes have modified the geologic environment and how these changes relate
   to the concepts of sustainability and carrying capacity.
6) Describe the following human impacts and/or geologic processes and be able to relate human
   interactions to our understanding of sustainability; for
   a. Soil generation and erosion
   b. Water resources, their use and water rights
   c. Energy sources, their generation and use
   d. Mineral resources and development/exploitation
   e. Waste generation and waste disposal
   f. Pollution issues, for water and air.
Relate course material to global climate change, and be able to describe the processes that control the Earth’s climate.

**Grading and expectations:** You are expected to attend every lecture and to be on time. Your final grade will be determined as follows:

- **Written Homework assignments (TBA) 45%** Written homework assignments will be DUE AT THE START OF CLASS ON THE DATE SPECIFIED, unless otherwise noted. (See examples of how homework is to be handed in). 10% of assignment value will be deducted per day, after one (1) week assignment will not be accepted.
- Any QUIZES are counted same as homework assignments. **(Note: lowest quiz grade will be dropped)!**
- Three (3) in-class exams (TBA) 45%
- Comprehensive Final Exam (TBA during finals week) 10%.

NOTE: We will cover approximately one to two (1-2) chapters per week for the course.

**Attendance:** Experience demonstrates that regular attendance enhances academic success. Students are expected to attend each meeting of their registered courses, whether taught online or in the traditional classroom setting. Participation in classroom activities such as lectures, films, guest speakers, class discussions, labs, group activities, and online work contributes to student success in college level coursework.

It is the student’s responsibility to inform the instructor of an anticipated absence ahead of time. Students are responsible for completing any missed work, as allowed by the instructor’s syllabus and/or course outline.

Earned grades must be based on demonstration of student learning outcomes and/or participation, not solely on attendance.

For students that never attended by the College’s defined census date*, faculty are required to assign an ‘NA’ (“Never Attended”). This shall remove the student from the course.

For students that then cease to attend and who, in the professional judgment of the faculty member, are no longer de facto students in the course at the midpoint of the term*, faculty shall assign an ‘X’. This shall remove the student from the course.

Student appeals for reinstatement to a course after an ‘NA’ or ‘X’ has been assigned shall be adjudicated by the College’s Chief Academic Officer.

Students who wish to withdraw from a course must officially do so through the Registration system. Students must drop courses prior to the start of the semester to receive a full refund. The last day to drop and remove a class from the official transcript is the end of the third week of the semester*. After the third week of the semester*, drops are considered withdrawals and are recorded with a ‘W’ on the transcript. The last day to withdraw from a course is three weeks prior to the last day of classes. *

Students wishing to drop or withdraw from a course are responsible for doing so; it is not the responsibility of their instructor or advisor.

* The College shall post these dates for each term, and deadlines for courses other than 15 weeks in length shall be adjusted proportionally.

For more information, visit: [http://students.sunyocc.edu/index.aspx?menu=942&id=24572](http://students.sunyocc.edu/index.aspx?menu=942&id=24572)

**NOTE:** Make-up exams are different from the scheduled exam and will have different questions addressing the same material.
• **NOTE:** QUIZES can be given at anytime without prior notice and cannot be made up. Frequent absences will lower your course grade.

• **NOTE:** The lectures cover both material in your textbook, material not presented in your textbooks, and new, up-to-date material. *PowerPoint lecture materials will be posted on Blackboard, but NOT on reserve in the library!*

**Accommodations for Students with Disabilities**

The Office of Accessibility Resources (OAR) at Onondaga Community College assists students with documented disabilities of all types. If you have a disability or suspect you may have one, please contact their office at 315-498-2245, Coulter Library. If you need special accommodations for this class like extra time on tests and/or testing in a private setting, you can set up an accommodation plan. If you are already registered with the office, please submit a copy of your plan to your instructor. For more information, visit: [http://students.sunyocc.edu/index.aspx?id=70](http://students.sunyocc.edu/index.aspx?id=70)

**NOTE:** If you are Visually or Auditory (Hearing) impaired see me immediately!

**Learning Center Referral Statement**

Onondaga Community College has a Learning Center in the Gordon Student Center, Suite G202 (right next to the cafeteria), which is staffed with instructional personnel and equipped with computers to assist students. Services offered include tutoring, study skills help, writing skills tutoring, and services are offered both in-person and online. It is recommended that students use the Learning Center to get additional assistance with concepts learned in the classroom. For more information, visit: [http://students.sunyocc.edu/index.aspx?menu=928&id=34300](http://students.sunyocc.edu/index.aspx?menu=928&id=34300)

**HOW IS THE COURSE STRUCTURED?:** I teach the class using a variety of media types. A typical class will entail lecturing utilizing PowerPoint Slideshow and an assortment of video and/or multimedia tools to aid the lecture. *Reading the text is VERY important;* all of the exam materials will come from information presented in lecture, lab and text, including any Videos or guest speakers.

***NOTE:** If you are visually or Auditory (Hearing) impaired see me immediately!

**What if you miss a class?** You should speak to me ahead of time for missing class, and have a valid reason for missing class. If you DON’T have a valid reason or have not spoken to me before class, I will NOT help you. Class notes are posted on Blackboard at the start of each new lecture set.

**Academic Honesty:** Students are encouraged to student and work together; however, all written assignments that must be turned in must be in YOUR own words. Students who hand in identical answers will be subject to **disciplinary action by the college**! All work performed on exams are to be performed by yourself. Any student violating these rules will be dealt with severely and maybe subject to dismissal for the course and the college.

**Other needs:** Contact me if you are struggling with the class (or any part or topic covered in the lecture, lab or text). For exams, I am more likely to accommodate a person who contacts me with a problem BEFORE the exam than I am AFTER the exam. I check and respond to email promptly.

**NOTE:** If you are Visually or Auditory (Hearing) impaired see me immediately!
NOTES on HOMEWORKS:

All homework must be either neatly handwritten or typed. You must ONLY USE Black or Blue ink pens or pencils. No color ink! Homework format MUST be as follows:

<table>
<thead>
<tr>
<th>GEO-106 (Section #)</th>
<th>Your Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework #: title (i.e. Hydrology)</td>
<td>Date</td>
</tr>
</tbody>
</table>

Each question in the homework MUST be numbered and re-stated, (ex:)

1) According to the video, how long did it take Alfred Wegner to find his evidence to support Continental Drift? In addition, what was his evidence and where did he find each of them?
   - It took Alfred Wegner two years to find his evidence
   - His was -
     - Mesosaurus discovered in Brazil and South Africa
     - Glacial Scars and Scrapes discovered in Karoo Desert in South Africa
     - Coal Deposits discovered in Spitsbergen and Arctic Islands

2) List all of the factors given in the video that influence a stream’s velocity?
   - All of the factors given that influence a stream’s velocity are:
     1. Nature of the stream banks
     2. Amount of water passing over a given point
     3. Gradient or slope of the stream bed
     4. Shape
     5. Size
     6. Depth
     7. Roughness of the stream bed

3) Sketch the diagram of the Sand Volcano, include the "sand blow”, layers of material, dike structure, and earthquake wave direction of motion.

***NOTE: Any assignments handed in not following this format will be returned ungraded!
*** IMPORTANT NOTICE!! ***

TEXTING IN CLASS:  I DO NOT and WILL NOT tolerate texting, blogging, e-mailing or twittering during my class time. Penalties are as follows:

- **First offense** – You will be asked to put the communications device away.
- **Second offense** – You will be dismissed from the class for the rest of the class period.
- **Third offense** – You will be dismissed from the class for one full-week (even if this includes missing an exam period).
- **Fourth offense** – You WILL be dropped from the course.

Commonly asked questions:

- Are their Study Guides? NO! I give you sufficient notes to study from.
- What are the important things I need to know for the exams? EVERYTHING is fair game for exams. If it was not important, I would not be teaching it to you.
- Are their tutors available for this course? YES! You need to go to the Content Tutoring Center and ask for one.
- Do people get A’s in your course? YES, but they are the people who put the time and effort into the course. They come to every lecture, ask thoughtful questions in class, read the assigned chapters, do and review the homeworks before exams and quizzes, and come to the review sessions when offered.
- Do you have a review before exams? SOMETIMES! For exams only, they are usually on Fridays and/or Saturdays before the Exam. I DO NOT have reviews for quizzes. Exam reviews are NOT in-class reviews and are NOT during class time. Review sessions are volunteer.
- Are the lecture and lab connected? Loosely. Lab is a separate course, but they are tied in that you get hands-on lab exercises that cover the material in lecture.

**NOTE:** Laboratory is ONLY required if you need a four credit lab science or are planning to pursue a Geoscience degree

**Important Communication Note:**

“Onondaga Community College is now using the college email system to communicate important information to students. The college will no longer send emails to personal email accounts. All college related emails will be sent via OCC email or via Blackboard. Please be sure to check your OCC email account often.”
## GEO-106: Environmental Geology - Fall 2017

### Course Schedule

<table>
<thead>
<tr>
<th>Lectures</th>
<th>Activity</th>
<th>Reading/Assign.</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Lecture Topic#1: Introduction to the Environmental Geology</td>
<td>Chpt. 1, pp. 3-38</td>
</tr>
<tr>
<td>#2</td>
<td>Lecture Topic# 2: Composition of the Earth and Structure of the Earth</td>
<td>Chpt. 2, pp. 40-71</td>
</tr>
<tr>
<td>#3</td>
<td>Lecture Topic# 3: The Nature of Minerals &amp; Rocks</td>
<td>Chpt. 3, pp. 73-109</td>
</tr>
<tr>
<td></td>
<td>**** Exam # 1 (Lecture Sets # 1, 2 &amp; 3) ****</td>
<td></td>
</tr>
<tr>
<td>#4</td>
<td>Lecture Topic# 4: Weathering Soil Development &amp; Erosion</td>
<td>Chpt. 17, pp. 586-614</td>
</tr>
<tr>
<td>#5</td>
<td>Lecture Topic# 5: The Hydrologic Cycle-Rivers &amp; Groundwater</td>
<td>Chpt. 9, pp. 287-325</td>
</tr>
<tr>
<td>#6</td>
<td>Lecture Topic# 6: Water Pollution</td>
<td>Chpt. 14, pp. 464-497</td>
</tr>
<tr>
<td>#7</td>
<td>Lecture Topic# 7: Air Pollution</td>
<td>Chpt. 19, pp. 668-679</td>
</tr>
<tr>
<td></td>
<td>**** Exam # 2 (Lecture Sets # 4, 5, 6 &amp; 7) ****</td>
<td></td>
</tr>
<tr>
<td>#8</td>
<td>Lecture Topic# 8: Energy Resources</td>
<td>Chpt. 16, pp. 534-585</td>
</tr>
<tr>
<td>#9</td>
<td>Lecture Topic# 9: Waste Disposal</td>
<td>Chpt. 19, pp. 680-693</td>
</tr>
<tr>
<td></td>
<td>**** Exam # 3 (Lecture Sets # 8, &amp; 9) ****</td>
<td></td>
</tr>
<tr>
<td></td>
<td>*********** Thanksgiving ***********</td>
<td>Nov 22 – Nov 26</td>
</tr>
<tr>
<td>#10</td>
<td>Lecture Topic# 10: Glaciation &amp; Global Climate Change</td>
<td>Chpt. 18, pp. 616-661 Chpt. 19, pp. 680-693</td>
</tr>
<tr>
<td>TBA</td>
<td>*** * Comprehensive Final Exam ***</td>
<td>**(All Materials Cover in the Course) **</td>
</tr>
</tbody>
</table>

* NOTE: There are No Classes on September 4th and October 9th & 10th*