Instructor: Larry Lemke
Office: 0224 Old Main
Email: ldlemke@wayne.edu
Phone: 313-577-6412
Office Hours: Tu-Th 11:00-11:30 am, Tu 2-4 pm, and by appt.

Class Times and Location
Lecture: Tuesday and Thursday, 9:35 – 11:00 a.m. Room 0151 Old Main
Laboratory: TBA Room 0307 Old Main

General Information
GEL 1000 is the gateway geoscience course for Wayne State University’s Environmental Science Program. It is open to science and non-science majors alike. GEL 1000 is a four credit course with a weekly laboratory or take-home assignment.

Note: For non-science majors, GEL-1000 does not fulfill WSU’s General Education Requirement for a Physical Science with a Laboratory.

Required Text

Purpose
Geology is the scientific study of Planet Earth. Environmental geology investigates the many interconnected systems and processes that formed our world, continuously change it, and, ultimately, sustain life on it. In this course we will explore dynamic processes that shape the lithosphere, hydrosphere, atmosphere, and biosphere over time periods ranging from a few hours or days to millions of years. Each of these processes can exert a profound influence on human development and can, in turn, be influenced (intentionally or unintentionally) by individual or aggregate human activities. By the end of the course, students will be familiar with major environmental issues such as global warming and climate change.

The main objectives of this course are to:
1. Provide students with an understanding of primary Earth systems and processes;
2. Prepare students for responsible participation in societal, political, and economic decision-making involving stewardship of the earth’s environment and natural resources.
3. Give students a foundation for additional studies in Earth and/or Environmental Sciences.

Student Responsibilities
It is the responsibility of students to:
- uphold academic integrity in all activities.
- attend classes regularly and punctually.
- complete reading assignments prior to class and actively participate in class discussions.
- adhere to university policies on attendance, withdrawal, and other special procedures.
- notify the instructor promptly of any circumstances that prevent the student from completing any required assignment or exam.
**Examinations**
Examinations will assess student mastery of material covered in lectures and assigned readings. In general, exam questions will emphasize material discussed in lectures. Lecture attendance is therefore highly recommended. Nevertheless, students are responsible for all material covered in assigned readings. Test questions will consist of multiple choice, true or false, matching, and short answers.

A total of four examinations will be given over the course of the semester. The lowest exam grade for each student will be dropped. If for any reason a student is unable to take a regularly scheduled exam, that exam will be dropped. *No make-up exams will be given under any circumstances*. Any student missing more than one exam will be withdrawn from the course with a failing grade (WF). The final exam is scheduled as designated in the WSU Schedule of Classes for this term. No other time will be available, and *no exceptions* will be made for conflicts such as student travel plans. The final exam is not cumulative and is weighted equally with each of the three in-class exams.

**Laboratory**
The purpose of the laboratory is to give students a combination of "hands-on" and practical problem solving experience. Assignments deal with Earth materials (e.g., rocks, minerals, and fossils), with tools used by geologists to study the Earth (e.g., maps and aerial photographs), and with environmental issues (e.g., waste disposal, atmospheric degradation, population dynamics).

The GEL 1000 lab uses a combination of stand alone modules and computer-assisted learning so that students can work with a self-paced approach. There are 12 labs in total; and the first lab is due during the second week of class.

Most of the GEL 1000 lab modules can be accomplished independently, on your own time and at your own pace. However, four of the labs must be completed in the GEL 1010 laboratory facility (0307 Old Main). These labs can be done anytime during the normal hours of lab operation but must be finished during the week assigned. Performance on laboratory modules is measured using a quiz or a graded laboratory assignment. The score for the lowest lab quiz or lab assignment will be dropped for each student. *There are no make-up labs and late lab assignments will not be accepted.*

**Field Trip**
A course field trip, exploring issues of environmental concern in southeast Michigan, is scheduled for Friday, October 19th. Participation is mandatory for GEL 1000 students. Students with conflicts on October 19th are eligible to attend the GEL 1010 field trip to Ontario, Canada on Saturday, October 20th. Note that proper identification for international border crossings is required for the Canada trip. Both field trips are governed by the WSU Department of Geology Field Trip Policy. 10% of course credit (equivalent to one full letter grade) will be deducted from students who do not attend one of the two field trips.

**Special Assistance**
Any student needing special assistance will be accommodated. Please contact Dr. Lemke as soon as possible to discuss your circumstances.
**Grading**

Exam and Laboratory scores will be posted on the Blackboard website. Course grades will be assigned using the following scale:

- **A** 85-100%
- **B** 75-85%
- **C** 65-75%
- **D** 55-65%
- **F** <55%

Although attendance in lecture is not required, the instructor may take class participation into account when assigning final grades for students whose average score sits on the borderline between two grades.

Final grades will be determined using the following weighting scheme:

- Highest exam score 20%
- Next highest exam 20%
- Next highest exam 20%
- Lab 30%
- Field Trip Participation 10%

**Academic Early Assessment**

The first exam will be given during the fourth week of class. Consistent with Wayne State University’s policy on early progress assessment, this exam will provide students with an early indication of their potential performance in the course. In addition, an early assessment evaluation will be provided to the registrar based on students’ performance on this exam.

**Academic Integrity**

Each student in this course is expected to abide by the University Student Code of Conduct.

During examinations, you must do your own work. All examinations are closed-note and closed-book. Talking or discussion is not permitted during the examinations. The use of cell phones and pagers is also prohibited. You may not compare papers, copy from others, or collaborate in any way. Any collaborative behavior during the examinations will result in a zero score for the exam and a report will be made to the University Student Conduct Officer. A second instance of cheating will result in a course grade of ‘F’ and the initiation of University disciplinary action.

Any work submitted for academic credit by a student in this course will be the student's own work. Collaboration on laboratory assignments is allowed in the following instances:

- Students are encouraged to study together and to discuss information and concepts covered in lecture and course readings with other students.
- Students can give "consulting" help to or receive "consulting" help from other students. However, this permissible cooperation should never involve one student having possession of a copy of all or part of work done by someone else, in the form of a hard copy, an email, or an electronic file (email attachment, diskette, CD-R, DVD, flash memory key, etc.).
- Students are NOT permitted to assist one another on quizzes in the GEL 1010 lab. The same rules for examinations listed above (closed-note, closed-book, no collaboration, etc.) apply to laboratory quizzes.

Disputes that cannot be resolved using syllabus guidelines will be resolved by the Wayne State University Student Code of Conduct.
# Course Outline

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture Topics</th>
<th>Readings</th>
<th>Lab Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction/Overview; Scientific Method</td>
<td>Chap 1</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>Dynamic Earth Systems</td>
<td>Chap 2</td>
<td>Lab 1: Environmental Systems</td>
</tr>
<tr>
<td>3</td>
<td>Geologic Time</td>
<td>Chap 3</td>
<td>Lab 2: Minerals</td>
</tr>
</tbody>
</table>
| 4    | **Exam 1 (9/25)**
Rocks and Minerals | (Chap 4) | *Lab 3: Magmatism and Igneous Rocks |
| 5    | Rocks and Minerals | Chap 4 | *Lab 4: Sedimentation and Sedimentary Rocks |
| 6    | Resources and Hazards | Chap 5 | *Lab 5: Metamorphism and Metamorphic Rocks |
| 7    | Weathering, and Sediments
**Exam 2 (10/18)** | Chap 6 | Lab 6: Geologic Hazards |
| 8    | Surface Water
Groundwater | Chap 7, Chap 8 | Lab 7: Watershed Management |
| 9    | Atmosphere | Chap 9 | Lab 8: Groundwater |
| 10   | Oceans and Coasts | Chap 10 | Lab 9: Air Pollution |
| 11   | **Exam 3 (11/15)** | | Lab 10: Alternative Energy Sources |
| 12   | Energy | Chap 11 | No Lab (Thanksgiving) |
| 13   | Climate Change – natural variability | Chap 12 | Lab 11: Waste Disposal |
| 14   | Environmental Change – anthropomorphic effects | Chap 13 | Lab 12: Population Dynamics |
| 15   | Course Wrap-up | | No Lab (Classes End) |

**FINAL EXAM** Wednesday, December 19<sup>th</sup>, 8:00 am (ouch!)

* Labs marked with an asterisk must be completed in Room 0307 Old Main during scheduled lab hours.

**Examination Schedule**

Exam 1 – Tuesday, September 25
Exam 2 – Thursday, October 18
Exam 3 – Thursday, November 15
Final Exam – Wednesday, December 19<sup>th</sup> at 8am-10am in Old Main Room 0151
GEL 1010 Laboratory Information

This information is provided because four of the GEL 1000 lab modules will be administered in the GEL 1010 laboratory facility.

Location
The lab is located in room 0307 Old Main. The lab is on the basement level in the northwest corner of the building facing Warren Ave.

Procedure
A different lab is offered each week -- only the lab given during that particular week may be completed during that week. Generally, each laboratory consists of a PowerPoint presentation followed by exercises, experiments or demonstrations, and a lab quiz.

You must have a photo ID (One Card) that you will give to the lab assistant before you begin each week (the ID will be returned at the end of the lab). The labs are designed to take an average of 3 hours per week. Each lab must be completed by Friday of that week; however, you can work in the lab anytime it is open. You may complete the lab activities all at once or over several days if you choose. However, once you begin the lab quiz, you may not leave and return at a later time.

Normal Hours of Operation
Monday: -------------------- closed
Tuesday: -------------------- 1:00 p.m. - 4:30 p.m. & 7:00 - 10:30 p.m.
Wednesday: ------------------- 11:00 a.m. - 9:30 p.m.
Thursday: --------------------- 10:30 a.m. - 10:30 p.m.
Friday: ----------------------- 10:30 a.m. - 5:30 p.m.

Laboratory Assistants
The laboratory assistants are there to help you with all aspects of each lab. They are responsible for enforcing all of the rules of operation.

Grading
Each lab is completed by taking a 20-question quiz. If you miss one lab, that is the grade that will be dropped. If you miss more than one lab, the first lab you missed will be dropped, and the others will count as 0%.

Note: The last quiz is given 30 minutes before the lab closes each day -- no exceptions.

Special Assistance
Any student needing special assistance will be accommodated. You should notify your professor or the Laboratory Supervisor (Mr. Lowrie) as soon as possible.

Other Rules of Operation
No food, drinks, or visitors (e.g. children) are allowed in the lab. Cell phones may not be used in the lab. Any problems should be directed to your professor or the Lab Supervisor (Mr. Lowrie).