SEMESTER
Life and Natural Sciences Department
School of Science, Technology, Engineering, and Mathematics

Program Name: **Geology**
Course Name: **Physical Geology – Laboratory**
Course Number: **GEO111** **Section: WXX**
Credits: 0 to 4 (Lecture 0 to 3, Laboratory 0 to 3)
Instructor Name:
Office Location:
Office Hours:
Owens CC Email:
Phone:
Additional Contact:

CATALOG DESCRIPTION: A survey of the basic principles of Physical Geology. The first portion of the class examines minerals and rocks and their interaction with the environment. The second portion of class concentrates on earth processes both above and below its surface including earthquakes, volcanoes, streams and ground water flow. Students retaking this course must repeat both the lab and lecture. The laboratory portion includes appropriate field work.

COREQUISITES: None

PREREQUISITES: None

TEXTBOOKS and MATERIALS

Earth Lab: Exploring the Earth Sciences, 3rd Edition; Owen, C., Pirie, D., Draper, G.; Brooks/Cole, 2011.

Course Objectives

By completing this course, the student should be able to understand the basics of physical geology. Minerals and how rocks are formed will be discussed. An exploration of the rock cycle (how rocks interact with the environment) and the types of rocks formed through this cycle will be discussed. Other rock forming processes will also be discussed. Additional topics that will be discussed include volcanism, earthquakes, glaciation, weathering and erosion, and surface and groundwater distribution and circulation.

Inclusive Access (I.A.) Materials *are included in the cost of the course to save students money through lower negotiated rates with publishers. Courses containing I.A. materials will have it noted on the online class schedule. If your course includes I.A. digital materials, you will receive an email with subject line, "Your inclusive Access Materials," and it will include any codes or digital links.*

The email will come to your Owens Community College email from the Owens e-Campus Bookstore on the first day of class, if not before. Be sure to check your spam (junk email) if you do not find it in your inbox. If the email is not in your inbox or spam folder, contact your instructor immediately. You may also see a folder at the top of your course labelled "Course Materials by eCampus." This folder will contain any needed codes or links to needed materials.

If the I.A. materials also include a printed book or are in print form, the item will be shipped to your address of record automatically based on your enrollment in the course. Please note that some courses do not include printed materials in I.A and those materials would need to be purchased separately using the link on the course schedule. When you access the Find Books link you will see which items in a course are included in I.A.

Laboratory Objectives

This laboratory is associated with the lecture portion of GEO111. Student should be able to demonstrate comprehension of minerals, igneous rocks, sedimentary rocks, metamorphic rocks, basic map concepts, topographic maps, streams and rivers, groundwater, water quality, rivers, shorelines, and glaciers.

Grading

The laboratory grade will be based on a combination of exams, quizzes, and exercises.

Exam 1 (Minerals and Rocks)	45 points
Exam 2	45 points
5 Quizzes (10 points each)	50 points
11 Exercises (10 points each)	110 points
Total	250 points

IMPORTANT: You must earn no less than 150 points (60%) out of the 250 total possible laboratory points to pass the entire course. If you do not earn at least 150 laboratory points, you will receive an (F) letter grade for the entire course.

There is absolutely NO provision for any EXTRA CREDIT to be given beyond the designated points for each laboratory activity.

Assignments – Reports

A laboratory report will be assigned for selected activities.

All assignments are due at the beginning of laboratory period immediately after the assignment was given. Late assignments will receive a 10% grade deduction for each day late. Any assignment over 1 week late will receive a zero (0%) grade. Laboratory assignments will not be accepted at the Life and Natural Sciences Department offices.

You will not be permitted to submit or to receive credit for a laboratory assignment in a session in which you have been counted absent.

Exams

Open book and open notes are not permitted for an exam.

Each exam can only be taken once.

Contact your instructor immediately if you miss a scheduled exam.

A student missing an exam chooses one of the following options:

- Take a **DIFFERENTLY FORMATTED** makeup exam on date assigned by instructor.
- Not take the exam and receive 0 points.

A student missing Exam 1 has one week from date of the missed exam to make up the exam.
A student missing Exam 2 has two days from date of the missed exam to make up the exam.

WEB SECTIONS

Using LockDown Browser for Online Exams

This course requires the use of LockDown Browser and video monitor for online exams. Watch the video (*link below*) to get a basic understanding of LockDown Browser and the webcam feature. To get started on your computer, watch the instructional video and then download and install LockDown Browser from the link.

- http://www.respondus.com/products/lockdown-browser/student-movie.shtml

To get started on your computer, download and install LockDown Browser from this link.

- http://www.respondus.com/lockdown/download.php?id=139313370

To take an online test, start LockDown Browser and navigate to the exam. (*You won't be able to access the exam with a standard web browser*.) For additional details on using LockDown Browser, review the quick start guides from Owens and Respondus in Course Content.

Helpful Hints

When taking an online exam, follow these guidelines:

- Ensure you're in a location where you won't be interrupted
- Turn off all mobile devices, phones, etc.
- Clear your desk of all external materials — books, papers, other computers, or devices
- Remain at your desk or workstation for the duration of the test
- LockDown Browser will prevent you from accessing other websites or applications; you will be unable to exit the test until all questions are completed and submitted

Course Information

Devices

Phones and other electronic communicating devices must be in silent mode during class. Unauthorized use of a phone, e-watch or tablet is not permitted during an exam. Use of these devices could result in forfeiture of exam points. Phones cannot be substituted for calculators.

Attendance

Attendance is taken at each laboratory session. If you are more than 30 minutes late for a laboratory you will not be permitted to attend that session. During the first 30 minutes your instructor covers the basic information necessary to successfully complete the laboratory, mandatory safety issues, precautions and location of needed materials. After the session has begun, for safety purposes, your instructor needs to be working with all students, not covering the information for those students who are late. Therefore, if you are more than 30 minutes late, you will not be permitted to attend the laboratory and will be counted absent. You are encouraged to obtain missed information from other students in the laboratory.

There are no make-up laboratory sessions.

You must ONLY attend the laboratory section in which you are registered.

Safety

- **Eating, drinking and smoking are not permitted in the laboratory.**
- You must be registered for the laboratory section which you are attending. Non-registered persons are not permitted in the laboratory.

- Appropriate apparel is required in the laboratory at all times, including; cotton shirts, jeans, proper foot covering, proper shoes, etc.
- Loose clothing, shorts, sandals, open-toed shoes are not permitted.
- Full covering laboratory aprons are available as needed.
- More about apparel will be discussed at the first laboratory meeting.
- **Safety goggles MUST BE WORN while experiments are being conducted. The laboratory instructor will announce when goggles may be removed.**
- **The appropriate eyewear must be splash goggles, which are provided to each student. NO impact glasses are to be worn at any time.**

Student Responsibilities

- Read the laboratory assignment and appropriate lecture material prior to each laboratory session. It is recommended that a laboratory notebook be kept to record observations, experimental results and instructor notes.
- Be on time and use the full laboratory period.
- Ask questions and participate in each activity.
- Turn in all work as assigned.
- **CLEAN UP:** Be certain that your area of the laboratory table is properly cleaned after use. Wash and return all glassware and other instruments to the proper areas. Check the sink to be sure that it is clear of all glassware and trash.

Activities

Activity 1 Minerals

Topics covered include basic mineral characters, Moh's hardness scale, and investigating common minerals. Lab activities include performing Moh's hardness tests using kits which each student receives for study.

Activity 2 Minerals

Topics covered include mineral classification and formation. Also, characters such as cleavage, fracture, texture, color, and luster are examined using hand samples, dissecting microscopes, and streak plates.

Activity 3 Mineral Quiz 1 (10 points), Igneous Rocks

Topics covered include the formation of igneous rocks, and how this affects texture. Lab activities include examining and classifying igneous rocks. Igneous rock textures are examined using hand lenses and hand samples. Each student, or small group, receives an igneous rock kit to study and classify.

Activity 4 Igneous Rock Quiz 2 (10 points), Sedimentary Rocks

Topics covered include lithification, cementation, igneous rock structure, and depositional environments. Lab activities include the examination and classification of hand samples. Each student, or small group, receives a sedimentary rock kit to study.

Activity 5 Sedimentary Rock Quiz 3 (10 points), Metamorphic Rocks
Topics covered include metamorphic rock formation, differential and confining pressure, and the role that chemically active fluids may play. Lab activities include the examination and classification of metamorphic rocks, including identifying their protolith, from hand samples. Each student, or small group, receives a metamorphic rock kit for study.

Activity 6 Review Rocks and Minerals, Map Concepts
Topics covered include the importance of map scale and legend, as well as interpreting different map types, such as geologic, planimetric, and weather maps. Lab activities include interpreting map scale from different scale styles, and using geologic and planimetric maps to identify specific structures. Also, common weather map symbols are discussed.

Activity 7 **Exam 1 Rocks and Minerals (45 points)**
Map Concepts (continued)

Activity 8 Topographic Maps
Topics covered include interpretation of topographic maps, both on paper from the USGS and ODNR Geological Survey, and on the computer using topographic map software commonly used on GPS receivers. Lab activities include reading and drawing topographic maps, as well as identifying many different symbols found on topographic maps.

Activity 9 Map Quiz 4 (10 points), Streams and Rivers
Topics covered include basic stream morphology, characters of early, middle, and late stage streams, and the effects of environment on stream flow. Lab activities include utilizing a stream table to examine the effects of substrate, base level, and channel length on stream flow. Erosion patterns are also examined.

Activity 10 Groundwater and Karst Topography / Glaciers
Groundwater and Karst Topography - Topics covered include groundwater formation, flow, and contamination. Zones of aeration, saturation, and the water table are discussed. Lab activities include using a groundwater simulation model to demonstrate how groundwater flows through different substrates, and how pollution can flow with the groundwater. This model also shows the effects of pumping wells and how a cone of depression is formed. The stream table is again employed to show how rivers and streams can draw from or add to the water table. There is also discussion of the characters of Karst topography, particularly Karst areas in Ohio.

Glaciers - Topics covered include the structure of different glacial types (alpine vs. continental) and their formation, development, and movement. Lab activities include the study of glacier images and determining glacial budgets. Glacial landforms are also discussed and students study maps of Ohio's glacial landforms.

Activity 11 Water Quality
Topics covered include inorganic and organic pollutants and their sources. Lab activities include the collection of water samples from local ponds, streams, and reservoirs, and then

testing them for several items such as pH, dissolved oxygen, nitrogen, and phosphorous. Samples are also examined under a microscope to determine the presence or absence of algal species.

Activity 12 Water and Rivers Quiz 5 (10 points), Shorelines
Topics covered include the formation of shoreline structures, such as spits, baymouth bars, tombolos, etc… Lab activities include utilizing the stream table with a wave making attachment to investigate how waves can affect shorelines. Also, images of typical shoreline structures are studied. Discussion also includes ways of limiting shoreline damage and/or loss.

Activity 13 **Exam 2 (45 points)**
This exam, as well as the first lab exam and the laboratory quizzes, are primarily practical in format. However, they also include some multiple-choice questions and essay questions where deemed appropriate. Typical questions include identification of rocks and minerals, identifying map components, reading maps, and any questions over material that was assigned for the labs.

GENERAL COLLEGE INFORMATION

Classroom Admittance
Owens Community College (OCC) classes (e.g. traditional, land-based, laboratory, hybrid, asynchronous online, synchronous online, etc.) shall only be attended by officially registered OCC students, instructor of record, guest lecturer or substitute instructor. Visitors are not permitted in the classroom and should not attend or participate in an online class session. See FERPA information at http://www2.ed.gov/policy/gen/guid/fpco/ferpa/index.html

Student Printing
For information on student printing solutions including page quotas, printing accounts, FAQs and other inquiries, contact the Help Desk at 567.661.7120 or https://www.owens.edu/studentprint/

Disability Services
If you have a disability or acquire one, you may be entitled to receive individualized services and/or accommodations intended to assure you an equal opportunity to participate in and benefit from the program. To receive more information or to apply for services, contact the Office of Disability Services at 567-661-7007 or https://www.owens.edu/disability/

Counseling Services
Counseling services are available at no charge to Owens CC students providing assistance with personal, educational, interpersonal, family, social, or psychological difficulties. If you feel you may benefit from this service, contact Counseling Services at 567.661.7168 or https://www.owens.edu/counseling/students/

Tutoring and Academic Assistance
Information on tutoring services, writing center and academic success centers is available at https://www.owens.edu/successcenters/

Safety
If you have concerns about your safety or the safety of others, contact the Department of Public Safety at 567-661-7575 or https://www.owens.edu/dps/

Anti-Discrimination and Harassment and Title IX/Sexual Misconduct
All students, faculty, and staff are expected to follow Owens Community College's Anti-Discrimination and Harassment Policy and the College's Title IX/Sexual Misconduct Procedures and Guidelines. The College strictly prohibits and will not tolerate harassment, discrimination, intimidation, or hostile/offensive working or learning environments.

The Anti-Discrimination and Harassment Policy can be found at:
https://www.owens.edu/trustees/procedures/proc3358-11-4-17.pdf

Title IX/Sexual Misconduct Procedures and Guidelines can be found at:
https://www.owens.edu/trustees/procedures/proc3358-11-4-17-titleIX.pdf

Student Code of Conduct
All students are expected to follow Owens Community College's Student Code of Conduct. Review at https://cdn.owens.edu/conduct/code.pdf

- Any student suspected of cheating or plagiarism will be dealt with in accordance with the standards set forth in the College Catalog.
- For information on FERPA and Assessment of Student Learning Outcomes, refer to the appropriate section of the current Owens Community College Catalog online.
- All student athletes will be treated the same as all other students as per policies in the course syllabus and college's student handbook.

Religious Accommodations
A student seeking an accommodation for an absence permitted under Ohio's Testing Your Faith Act must provide the instructor with a **written email** notice with the specific dates for an absence, and must do so not later than fourteen (14) days after the first day of instruction. **Alternative accommodations are not retroactive, and no academic penalty will be imposed for an absence under the policy*.** The request for an alternative accommodation will be kept confidential. Students with questions about a religious accommodation under Ohio's Testing your Faith Act may contact the College's Office of Academic Affairs: provost@owens.edu The policy may be found on the Owens CC website: 3358:11-2-63 Accommodation for Student Absence for Observance of Religious Beliefs/Practices Policy.

Health and Safety Information
Please note that while unlikely, there is a possibility courses might need to change the delivery method due to public health concerns. If this happens, the college will communicate any changes via email and/or other communication methods.

If you are not able to come to class because you are ill, please let me know as soon as possible. When possible, class materials will be available through Blackboard (or Zoom or ….). I will do my best to arrange for you to make up the work you missed, if practicable.

Currently, masks are allowed but not required on campus; however, this requirement may change depending on circumstances. If changes are made, you will be informed via email and/or other communication methods.

SEMESTER Master Laboratory Schedule

Laboratory Section DAY	Laboratory Section DAY	Laboratory Section DAY
Activity 1 - DATE	Activity 1 - DATE	Activity 1 - DATE
Activity 2- DATE	Activity 2- DATE	Activity 2- DATE
Activity 3- DATE	Activity 3- DATE	Activity 3- DATE
Activity 4- DATE	Activity 4- DATE	Activity 4- DATE
Activity 5- DATE	Activity 5- DATE	Activity 5- DATE
Activity 6- DATE	Activity 6- DATE	Activity 6- DATE
Activity 7- DATE	Activity 7- DATE	Activity 7- DATE
Activity 8- DATE	Activity 8- DATE	Activity 8- DATE
Activity 9- DATE	Activity 9- DATE	Activity 9- DATE
Activity 10- DATE	Activity 10- DATE	Activity 10- DATE
Activity 11- DATE	Activity 11- DATE	Activity 11- DATE
Activity 12- DATE	Activity 12- DATE	Activity 12- DATE
Activity 13- DATE	Activity 13- DATE	Activity 13- DATE
Laboratory Section DAY	Laboratory Section DAY	Laboratory Section DAY
Activity 1 - DATE	Activity 1 - DATE	Activity 1 - DATE
Activity 2- DATE	Activity 2- DATE	Activity 2- DATE
Activity 3- DATE	Activity 3- DATE	Activity 3- DATE
Activity 4- DATE	Activity 4- DATE	Activity 4- DATE
Activity 5- DATE	Activity 5- DATE	Activity 5- DATE
Activity 6- DATE	Activity 6- DATE	Activity 6- DATE
Activity 7- DATE	Activity 7- DATE	Activity 7- DATE
Activity 8- DATE	Activity 8- DATE	Activity 8- DATE
Activity 9- DATE	Activity 9- DATE	Activity 9- DATE
Activity 10- DATE	Activity 10- DATE	Activity 10- DATE
Activity 11- DATE	Activity 11- DATE	Activity 11- DATE
Activity 12- DATE	Activity 12- DATE	Activity 12- DATE
Activity 13- DATE	Activity 13- DATE	Activity 13- DATE