

Syllabus for Physical Geology 51-102 Lecture: Fall 2016
Section: A09C (morning)

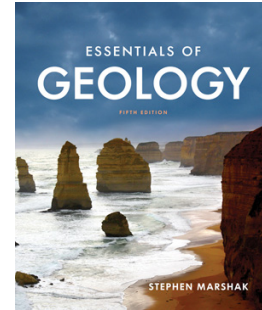
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Office Hours: M 3:00–5:00pm, W 4:00–5:00pm
or by appointment



Required Textbooks:

1. **Essentials of Geology**, 2016, 5th edition by Stephen Marshak, published by W.W. Norton and Company. ISBN: 9780393263398

- The online only e-book version is available for \$55 through the publisher's website: <https://digital.wwnorton.com/essgeo5>. If you purchase this you have included access to Smartwork5 (required reading homework assignments) links between ebook and homework.
- The color, bound version is available from the UWO bookstore for \$86.25. This paper version is optional but **STRONGLY recommended** and is a great value. The paper version **includes the ebook** as well.

2. UW-Oshkosh custom **Physical Geology Laboratory Manual**, 2016, 8th edition by Jones and Jones, McGraw Hill Publisher. ISBN: 1259823016 (Required Lab Manual).

- This is an updated, customized edition for our labs that costs about half the price of the normal edition. This paper version is ***the only edition that is acceptable***. ***Note: a used, borrowed, or shared lab manual is **NOT acceptable**.

About this course

Physical Geology is about the study of earth materials and the changes that occur in earth's interior and on its surface. This course provides an introduction to geology as a science and an overview of its basic principles. The lab portion of the course is designed to provide training and practice in applying scientific inquiry to the earth and to practice analytical reasoning and quantitative problem solving. Students will increase knowledge of the physical world and develop valuable skills including critical thinking, written communication, quantitative and technical literacy, teamwork, and problem solving. *These are the Essential Learning Outcomes for the course.*

Course Objectives: By the end of the course, as a student you will be expected to...

- Discuss the basic principles of scientific inquiry and apply them to current research and past discoveries and development of theories.
- Define selected vocabulary from the assigned course readings, and employ them in understanding and explaining topics.
- Differentiate between different tectonic plate boundaries describing common geologic features and processes.
- Use physical and chemical properties to classify rocks and minerals.
- Compare the formation of different types of magma and their relationship to volcanic and igneous features.

- Analyze igneous, sedimentary, and metamorphic rocks to determine how they formed.
- Apply principles of relative dating to interpret geologic histories. Understand the application of radiometric dating to geologic events and the geologic time scale.
- Read maps that represent 3-D surfaces and interpret the processes that reconfigure rock units as represented on geologic maps.
- Differentiate the internal structure and composition of the earth.
- Identify folds, faults, and strata in geologic sections and summarize their formation.
- Explain what causes earthquakes and earthquake damage, and how their source is located.
- Discuss a global picture of the world's energy and natural resources and how they are critical to the **sustainability** of modern society.
- Describe the geologic impact of past and projected future changes in earth's climate and how the present outlook relates to issues of **sustainability** and earth resources.

USP Explore “Nature” Course: Physical Geology 102 fulfills an Explore Course requirement in the “Nature” category with the **Sustainability** signature question for the University Studies Program (USP). Signature question: *How do people understand and create a more sustainable world?*

As part of an Explore Course, you are participating in liberal arts education. This approach is designed to provide you with the opportunity to discover the world around you from different perspectives while giving you an ability to communicate with people of different backgrounds, putting their expertise in context. This course has been structured to help you learn about geologic processes, but also to learn to ask questions, make observations, collect data, and begin to synthesize and apply your knowledge to better understand our world. These skills relate not just in earth and other sciences but can be applied to life in general to make you an effective problem solver who can think critically.

You will be able to digitally document your learning at UW Oshkosh using the ePortfolio system through D2L (Desire 2 Learn). ePortfolio will help you keep track of your own papers, reports, and other assignments in your USP courses so you can see your own progress and connect ideas across different courses. Successful completion of an Explore Course requires that you upload the ePortfolio digital artifact assignment, which is directly tied to the Essential Learning Outcomes of technical literacy and critical thinking. In addition, you must upload a reflection assignment to ePortfolio. You may continue to use the ePortfolio as your own personal archive in all your courses at UWO, and upon graduation it can serve as evidence of your learning for potential employers.

In addition to being a USP Explore Course with the **Sustainability** signature question, this course also fulfills requirements for all majors and minors in Geology (including Secondary Earth Science Education) and fulfills a Natural Science Laboratory Science course requirement of the College of Letters and Sciences.

Course Components:

- **Lecture** - MWF 10:20-11:20am, Halsey 109. The schedule of topics is given below.
- **Labs** - “Hands on” lab work is an essential part of physical geology. In lab you will learn to make observations and directly experience many of the principles addressed in the readings and in lecture. See lab schedule and information here:
http://www.uwosh.edu/faculty_staff/hallettb/Bens_Course_Pages/102Lab_Syll_F16.pdf

- **Online Homework** - Assigned through Norton's Smartwork5 system, you will have regular assignments based on the readings that are due prior to lecture topics. See the lecture schedule for online homework assignments.
- **Written Homework and In-Class Exercises** - Periodic assignments are designed to help you develop an understanding of key course concepts. This includes the ePortfolio assignment. Due to the size of the class, you should make a copy of your assignments before you hand it in because it could be some time before you receive your assignment back.
- **Field Trip** - Plan on attending a field trip on Sunday 10/2. Two trips (morning and afternoon) are offered. You may not attend both trips (they are the same). If you are not able to make either trip an alternative assignment is available. Unfortunately, space is limited and you must sign up ahead of time.

Expectations:

- *My expectations for you:* Success in this course requires good attendance and a significant investment of time beyond scheduled class. The National Survey of Student Engagement suggests that there is a disconnect between faculty and student expectations in terms of time spent out of the classroom. Throughout this course, I expect that you spend a minimum of **two to three hours** outside of class reading/studying and preparing **per hour** spent in the classroom. With this course being a 4 credit course, you should be studying 8-12 hours per week in addition to lectures and lab.
- *What you can expect from me:* I want all students to feel welcome and included in the course whoever you are or how much of a science background you have. I try my hardest to be available when you might need help. I want students to visit and ask questions at my office hours, before/after class, and via email. My goals are the following: to be enthusiastic about course material, to present material in an organized way, to provide resources you need to be successful, to respond quickly, to set a high standard for the course and help you meet those standards, and to be fair and respectful.

Requirements and Grading

Attendance: The material on the exams will come from the lecture, homework, and in-class exercises so attendance is required if you wish to do well in the course. In addition, no opportunities will be available to make up unexcused missing in-class assignments. Please feel free to ask questions at any time, including during lecture; however, ***disruptive behavior, including talking during lecture or labs, or text messaging, is not acceptable*** and will result in a lower course grade. If you have a valid excuse and must miss an exam, you must contact me BEFORE the exam date. If you have a valid excuse, you may take a makeup exam.

Online Homework: These assignments are through the Smartwork 5 system, linked via D2L. The assignments are due at the start of lectures for the due date. The assignments are intended to help you keep up with the reading and course material, and help you track and confirm your learning of key concepts reinforced in lecture. There are 18 total assignments, and your grade will be determined by the 15 highest scores. The first assignment is due on Friday 9/9.

ePortfolio and Reflection: In order to pass this USP Explore Course, you must complete the ePortfolio and the Reflection assignments by the due dates. The ePortfolio assignment entails a

short writing assignment about the sustainability of industrial sand mining in Wisconsin and will include an anonymous peer review to be completed by your classmates. Details about the assignment will be provided later in the course.

Exams: The lecture exams are weighted differently such that the first two are worth 17.5% each and the third exam is worth 20%. The exams are given in lecture. The exams test your ability to grasp concepts, apply terminology, and solve problems. If you fail to take good notes, participate in class, or gain a reasonable understanding of the material you will struggle on the exams.

The tentative exam schedule (subject to change) is:

- Exam 1: October 7
- Exam 2: November 14
- Exam 3: December 16 (semi cumulative)

Lecture exams will be computer scored and score sheets and question sheets will not be returned to you but, once they are graded, will be viewable during office hours or by appointment.

Grade Basis: Your course grade will be based on three lecture exams (55%), homework (including online homework) and in-class exercises (15%), and your lab grade (30%). You must pass the lab portion and have a grade $\geq 60\%$ to pass the class.

Grade scale: 93% and up = A; 90–92 = A-; 87–89 = B+; 83–86 = B; 80–82 = B-; 77–79 = C+; 73–76 = C; 70–72 = C-; 67–69 = D+; 63–66 = D; 60–62 = D-; <60% = F

Course Policies:

Academic Integrity: The Wisconsin Administrative Code states: “Students are responsible for the honest completion and representation of their work, for the appropriate citation of sources, and for respect of others academic endeavors.” (§ UWS 14.01) Plagiarism and other forms of academic misconduct are serious offenses with severe penalties. See the University of Wisconsin Oshkosh Student Discipline Code for definitions of academic misconduct and details about procedures, sanctions, and other relevant information:

<http://www.uwosh.edu/deanofstudents/university-polices-procedures/academic-misconduct>.

Specific questions about the provisions in the Student Discipline Code should be directed to the Dean of Students Office. If you do not understand this statement, please see me as soon as possible.

Email: I will do my best to respond to email within one day. If you have an urgent situation please come to my office or send an email that describes your situation. When you email me please tell me your full name, and which class you are in. Also, email is not the same as a text/instant message, it is a business/academic document. Incoherent emails that are written with incomplete sentences, no punctuation, or text message abbreviations will not get responses.

Course Resources:

D2L: Course information, supplementary links, notes, and grades will be made available on D2L. Please check D2L first before making requests for material or grades. Note that D2L’s final calculated grade may not reflect all grade assignments for the course.

Geology Tutoring: Geology Student tutors offer optional study/tutoring sessions several evenings each week in Harrington 113 or 114. Exact times will be announced in lecture/lab.

Early Alert: The University's Early Alert program reaches out to students after the first 5 weeks of classes to help identify academic performance or attendance issues. It is common for students to be unaware or to over-estimate their academic performance in classes so this program is designed to help. If you receive a notice by email, read it carefully, and if you receive an alert it is critical that you make arrangements to meet with me and/or a counselor to help develop an action plan.

Special Accommodations: Reasonable accommodations will be made for students with disabilities. Please contact Disability Services (424-3100 (voice) or 424-1319 (TTY)) or visit their web site at <http://www.uwosh.edu/deanofstudents/disability-services> for the University's accommodation request form and documentation requirements. Information related to an individual's accommodation request will be kept confidential.

Other resources are available. Please ask for help if you need it! If you have a course-related issue I will make every effort to help you resolve it or to direct you to the help you need.

Tentative Course Schedule:

Week beginning	Topic	Reading from Marshak	Homework
Sep. 5	Introduction to scientific inquiry, Geology matters, Earth in space/time, how our planet is constructed	Prelude, Ch. 1	HW1 due 9/9
Sep. 12	Plate Tectonics, how earth works	Ch. 2	HW2 due 9/14
Sep. 19	Atoms, compounds, minerals (building blocks of earth materials), rock types, magma	Ch. 3 & Int. A, Ch. 4	HW3 due 9/19, HW4 due 9/23
Sep. 26	Igneous rocks, volcanoes and volcanic hazards	Ch. 4, Ch. 5	HW5 due 9/28
Oct. 3	Sediments and soils, Exam 1 (Oct. 7)	Interlude B	HW6 due 10/3
Oct. 10	Sedimentary rocks, and fossils, the hydrologic cycle	Ch. 6, Int. E	HW7 due 10/10, HW8 due 10/14
Oct. 17	Streams, groundwater and karst	Ch. 14, Ch. 16	HW9 due 10/17, HW10 due 10/19
Oct. 24	Metamorphic rocks, metamorphism, Rock cycle	Ch. 7, Int. C	HW11 due 10/24
Oct. 31	Geologic time: relative and absolute dating, Isotopic dating	Ch. 10	HW12 due 10/31
Nov. 7	Geologic Structures, folds, faults, stress, strain, mountains	Ch. 9	HW13 due 11/7
Nov. 14	Exam 2 (Nov 14) Energy and resource sustainability, digital assignment due to D2L Dropbox from ePortfolio by Nov. 23	Ch. 12	HW14 due 11/16
Nov. 21	Earthquakes, Thanksgiving Break	Ch. 8	HW15 due 11/21
Nov. 28	Earthquake hazards, Glaciers and glacial landforms	Ch. 8, Ch. 18	HW16 due 12/2
Dec. 5	Glaciation and ice ages, Earth's Climate and Climate Change	Ch. 18, Ch. 19	HW17 due 12/5 HW18 due 12/7
Dec. 12	Global change and sustainability, Exam 3 (Dec. 16), ePortfolio Reflection due Dec 14	Ch. 19	

Important dates: 9/7/16 class begins; 9/13/16 last day to add without instructor's signature; 10/4/14 last day to add with instructor's signature; 10/21/15 last day to drop without Late Drop Request Form or withdrawal; 11/23/16–11/27/16 Thanksgiving Recess; 12/16/16 Classes end.