

Geology 100
GEOLOGY AND SCIENCE
Spring 2023

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| Instructor: | Samantha Kaplan |
| Office: | D-327 Science Building |
| Office Hours: | Tuesdays 11:00 am-12:00 pm, Thursdays 2:00-3:00 pm, and by appointment |
| Telephone: | Main Office: 715-346-2629; Voicemail: (715) 600-1568 |
| Email: | skaplan@uwsp.edu |
| Required Text: | <i>Earth: An Introduction to Physical Geology</i> , 2020. 13th ed. by Tarbuck, Lutgens, Linneman and Tasa |
| Lecture: | Tuesday & Thursday 10:00-10:50 am D324 Science |
| Lab: | Tuesday 2:00 - 3:50 pm D324 Science |

Students with Disabilities: Students with learning and/or physical disabilities are encouraged to contact me to make any special arrangements for taking lecture notes or exams.

Catalog Description: 3 credits. Introduction to scientific inquiry as it applies to understanding human interactions with the physical environment. 2 hrs lec, 2 hrs lab per wk.

General Education Designation: GEP: NSc

Learning Outcomes:

- Explain major concepts, methods, or theories in the geological sciences, to investigate the physical world.
- Interpret information, solve problems, and make decisions by applying geological concepts, methods, and quantitative techniques.
- Describe the relevance of aspects of the geoscience to their lives and society.

Classroom Policies

- Attendance is required for all lecture and lab sessions.
- I do not post lecture notes on-line and I do not share my lecture notes with students. Please do not ask. If you miss class, I will post Power Point lecture slides following class. I do not post slides before class.
- E-mail communication must contain a subject line, the course number (Geol 100) and be courteous and coherent for a response.
- Canvas will be used for most course communication outside of Lecture and Lab. Please check Canvas regularly for course updates and announcements.

Labs

- The Geology 100 lab will parallel lecture and is designed to provide you hands-on experience identifying rocks and earth materials. You will also learn to interpret geological and topographic maps, as well as use and apply other geological analysis techniques.
- Laboratory sessions are mandatory.
- Excused absences for medical situations or personal emergencies are permitted with prior approval only.
- Unexcused absences will result in a 10% deduction in that week's lab exercise score.
- Close-toed shoes are REQUIRED. No other protective clothing is necessary, but the rock labs can be grimy. Dress accordingly.
- Please be prompt to lab and bring your textbook unless instructed otherwise.
- There is no required lab manual or book, but if you have a rock/mineral identification guide of your own, you are welcome to bring it!

Lab Activities

- Each week (mostly) there will be a new lab exercise (13 in total).
- Lab exercises will be initiated during the in-person meeting and completed on your own if not finished during class.
- Lab exercises are typically due one week after being assigned (if not completed during the initial lab period).
- Materials to complete the labs outside of class will be available in D214 Science, be provided for home use, or available online.
- There will be four (4) lab quizzes spaced throughout the semester. These either be online or will take place during the first part of the in-person lab session.

Assessment:

- **Labs:** There will be a total of thirteen (13) lab exercises, of which your best twelve (12) count.
- **Lab Quizzes:** Four (4) non-cumulative lab quizzes.
- **Exams:** There will be three (3) exams covering lecture and laboratory content. Exams are non-cumulative, but later exams may build on previous content.
- **Attendance:** Attendance is required for lecture and lab, unless otherwise excused beforehand.
- **In-class activities:** There will be periodic in-class activities (approx. 5) and discussions during the lecture portion of the course.
- **Assessment breakdown:** The course is scored out of 660 semester points (see below).
- **Disclaimer:** These weights could change slightly. Refer to Canvas for updates.

| | Number | Points Each | Points Total | Percent Each | Percent Total |
|---------------------|--------|-------------|--------------|--------------|---------------|
| Lab exercises | 12 | 20 | 240 | 3.0% | 36% |
| Lab quizzes | 4 | 30 | 120 | 4.5% | 18% |
| Attendance | 15 | 4 | 60 | 0.6% | 9% |
| In-class activities | 5 | 12 | 60 | 1.8% | 9% |
| Exams | 3 | 60 | 180 | 9.1% | 27% |
| Total | | | 660 | | 100% |

Final Letter Grades: Letter grades will be assigned as follows:

| Percent | Letter Grade |
|----------------|---------------------|
| ≥93 | A |
| 90-92.9 | A- |
| 87-89.9 | B+ |
| 83-86.9 | B |
| 80-82.9 | B- |
| 77-79.9 | C+ |
| 73-76.9 | C |
| 70-72.9 | C- |
| 67-69.9 | D+ |
| 63-66.9 | D |
| ≤62.9 | F |

Student Rights and Responsibilities

- UWSP has guidelines regarding student rights and responsibilities in class and on campus. These are outlined on the Dean of Student's website and in the Student Handbook. Do review these resources if you have not already:
 - <https://www.uwsp.edu/dos/Pages/stu-conduct.aspx>
 - <https://www.uwsp.edu/dos/Pages/stu-academic.aspx>
 - <https://www.uwsp.edu/dos/Pages/handbook.aspx>
 - <https://www.uwsp.edu/dos/Documents/AcademicIntegrityBrochure.pdf>
 - <https://www.uwsp.edu/dos/Documents/UWSP14-Final2019.pdf>

Class Schedule (Tentative)

| Date | Class Topic | Reading |
|----------|--------------------------------------|---|
| T 24-Jan | Introduction | |
| R 26-Jan | Earth's Formation | Chapter 1 p. 7-10, 18-31; Chapter 22 p. 624-636 |
| LAB | No Lab | |
| T 31-Jan | Plate tectonics | Chapter 2 |
| R 2-Feb | Plate tectonics | Chapter 2 |
| LAB | Lab 1 - Earth Materials | Chapter 3 p. 70-73 |
| T 7-Feb | Mineral Chemistry & Properties | Chapter 3 p. 74-79, 83-96 |
| R 9-Feb | Igneous rocks | Chapter 4 p. 102-117 |
| LAB | Lab 2 - Minerals | Chapter 3 p. 79-83, 89-96; Canvas Resources |
| T 14-Feb | Igneous Processes | Chapter 4 p. 117-128 |
| R 16-Feb | Volcanic Processes | Chapter 5 |
| LAB | Lab 3 - Metallic minerals | Chapter 3 p. 79-83, 89-96; Canvas Resources |
| T 21-Feb | Volcanic Hazards | Chapter 5 |
| R 23-Feb | NO CLASS | Video |
| LAB | Lab 4 - Igneous Rocks | Chapter 4 p. 117-129; Canvas Resources |
| T 28-Feb | Weathering & Soils | Chapter 6 |
| R 2-Mar | EXAM 1 (Chapters 1-5) | |
| LAB | Lab 5 - Weathering | Chapter 6 |
| T 7-Mar | Sedimentary Rocks | Chapter 7 p. 202-220 |
| R 9-Mar | Sedimentary Environments | Chapter 7 p. 221-229; Chapter 23 p. 664-669 |
| LAB | Lab 6 - Sedimentary Rocks | Chapter 7 p. 206-221; Canvas Resources |
| T 14-Mar | Metamorphic Rocks | Chapter 8 p. 234-246 |
| R 16-Mar | Metamorphic Environments | Chapter 8 p. 247-256 |
| LAB | Lab 7 - Metamorphic Rocks | Chapter 8 p. 241-246; Canvas Resources |
| T 21-Mar | SPRING BREAK | |
| R 23-Mar | SPRING BREAK | |
| T 28-Mar | Geologic Time and Historical Geology | Chapter 9 p. 262-265; Chapter 22 p. 634-654 |
| R 30-Mar | Stratigraphy & Dating | Chapter 9 p. 265-284 |
| LAB | Lab 8 - Mystery Rocks | Chapter 8 p. 247-256; Canvas Resources |

| Date | Class Topic | Reading |
|-------------|---|--|
| T 4-Apr | Structure: Folds | Chapter 10 p. 290-298; Chapter 14 |
| R 6-Apr | Structure: Faults | Chapter 10 p. 298-305 |
| LAB | Lab 9 - Topographic Maps | Canvas Resources |
| T 11-Apr | Earthquakes | Chapter 11 p. 308-330, 338 |
| R 13-Apr | EXAM 2 (Chapters 6-10) | |
| LAB | Lab 10 - Earthquake prediction | |
| T 18-Apr | Earth's Interior | Chapter 12 |
| R 20-Apr | The Sea Floor | Chapter 13 |
| LAB | Lab 11 - Geologic Maps | Chapter 10 p. 305-306, 308-309; Canvas Resources |
| T 25-Apr | Streams & Floods | Chapter 16 p. 438-454; 462-466 |
| R 27-Apr | Groundwater & Karst | Chapter 17 |
| LAB | Lab 12 - Groundwater & Floods | Chapter 17 p. 479-481, 500; Canvas Resources |
| T 2-May | Glacial Geology | Chapter 18 |
| R 4-May | Climate Change | Chapter 21 |
| LAB | Lab 13 - Glaciers | Chapter 18 p. 514-522, 531-532; Canvas Resources |
| T 9-May | Coastal Processes | Chapter 19 p. 547-553 |
| R 11-May | Eolian Processes | Chapter 20 p. 563-574 |
| LAB | | |
| T 16-May | EXAM 3 (Chapters 11-21) | 2:45PM - 4:45PM |