



## **Course Syllabus: Mineralogy**

McCoy College of Science, Mathematics, and Engineering

GEOS 3134-101 | Fall 2020

### **Contact Information**

Instructor: Dr. Jonathan D. Price

Office: Bolin 102

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Graduate Teaching Assistant: Mr. Jared Steger

### **Course Objectives**

Mineralogy introduces students to the crystalline components found in rocks. Students successfully completing the course will be able to identify common minerals by their macroscopic and microscopic properties. Moreover, students completing the course will understand natural crystallization processes and products, their relationship to rock-forming processes, and how minerals record the environments of formation and subsequent alteration.

### **Textbook & Instructional Materials**

Minerals: Their constitution and origin, 2ed. ISBN: 9781107514041

Key for Identification of Rock-Forming Minerals ISBN: 1138001147

Laboratory Manual for Mineralogy (in-house publication available at bookstore)

### **Room**

Bolin 115 is both the meeting room and workroom for the course. Access by valid student ID card.

### **Student Handbook**

Refer to: [Student Handbook 2019-20](#)

### **Academic Misconduct Policy & Procedures**

Academic Dishonesty: Cheating, collusion, and plagiarism (the act of using source material of other persons, either published or unpublished, without following the accepted techniques of crediting, or the submission for credit of work not the individual's to whom credit is given). Additional guidelines on procedures in these matters may be found in the Office of Student Conduct.

## Grading

Table 1: Assignment weights

Assignments	Percent
Research activity and report	15%
Exam 1	15%
Exam 2	20%
Lab quizzes	5%
Lab assignments	35%
Lab final exam	10%

Table 2: Total percentage points for final grade.

Grade	Points
A	90+
B	80 to 89.9
C	70 to 79.9
D	60 to 69.9
F	Less than 60

## Work submission

Assignments may be remitted in class to the professor or TA, in person or to mailboxes in Bolin 102. You may also scan and submit your work through email. Some assignments may require submission through 2DL.

Note: You may not submit a paper for a grade in this class that already has been (or will be) submitted for a grade in another course, unless you obtain the explicit written permission of me and the other instructor involved in advance.

## Exams

Exam 1 will be a 50-minute test covering the first half of the semester. Exam 2 will be a 2-hour comprehensive test, covering the entire semester. The lab final exam is 1 hour and 50 minutes and covers systematic mineral identification.

## Projects Required

A term project will cover an individually-assigned topic approved by your instructor.

## Writing Center

Begin drafting papers as early as possible and take advantage of the MSU Writing Center, located off the 2nd floor atrium of Prothro-Yeager! Tutoring is available Monday through Thursday from 9am to 4pm; you can also find a tutor at the satellite location in Moffett Library Honors Lounge, Sunday and Thursday from 6pm to 9pm. Writing tutors will not edit your papers for you, but they will provide support and feedback at every stage of the writing process, from brainstorming to drafting, revising to proofreading.

## Colloquium

Unfortunately on hiatus for Fall 20.

## **Late Work**

Late submitted assignments are the bane of our mutual existence: they are disadvantageous to you, because you fall behind the class. They are detrimental to the class, because they hold up my grading. They are disconcerting to me, because they require my reexamination of a previously graded assignment. In an attempt to prevent tardy assignments, you will receive 10% points on the assignment for handing it in at the due time. Any late submission will not receive this 10%. You will continue to lose 10% for each week the assignment remains late. In effect, you lose a letter grade each week your assignment is late.

Needless to say, this will not be an issue if you complete your assignments well ahead of the due date.

## **Desire-to-Learn (D2L)**

Extensive use of the MSU D2L program is a part of this course. Each student is expected to be familiar with this program as it provides a primary source of communication regarding assignments, examination materials, and general course information. You can log into [D2L](#) through the MSU Homepage. If you experience difficulties, please contact the technicians listed for the program or contact your instructor.

## **Attendance**

Students are expected to attend all meetings of the classes in which they are enrolled. Students are graded on intellectual effort and performance rather than attendance, but absences or tardiness from lecture may result in a lower grade.

***Note: you are still responsible for missed assignments and quizzes (most labs will include an assignment or quiz).***

## **Furthermore**

Mineralogy ranks is one of the most challenging classes within the undergraduate geoscience curriculum. It covers a number of abstract concepts. It incorporates attributes of inorganic chemistry, solid-state physics, and Euclidean geometry. It relies heavily on largely non-intuitive, frequently arcane, and always cumbersome nomenclature. In short, plan on spending a good portion of each week on this class.

## **Change of Schedule**

A student dropping a course (but not withdrawing from the University) within the first 12 class days of a regular semester or the first four class days of a summer semester is eligible for a 100% refund of applicable tuition and fees. Dates are published in the Schedule of Classes each semester.

## **Refund and Repayment Policy**

A student who withdraws or is administratively withdrawn from Midwestern State University (MSU) may be eligible to receive a refund for all or a portion of the tuition, fees and room/board charges that were paid to MSU for the semester. HOWEVER, if the student received financial aid (federal/state/institutional grants, loans and/or scholarships), all or a portion of the refund may be returned to the

financial aid programs. As described below, two formulas (federal and state) exists in determining the amount of the refund. (Examples of each refund calculation will be made available upon request).

### **Services for Students with Disabilities**

In accordance with Section 504 of the Federal Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, Midwestern State University endeavors to make reasonable accommodations to ensure equal opportunity for qualified persons with disabilities to participate in all educational, social, and recreational programs and activities. After notification of acceptance, students requiring accommodations should make application for such assistance through Disability Support Services, located in the Clark Student Center, Room 168, (940) 397-4140. Current documentation of a disability will be required in order to provide appropriate services, and each request will be individually reviewed. For more details, please go to [Disability Support Services](#).

### **University-Wide Policies: Campus Carry**

Refer to: [Campus Carry Rules and Policies](#)

### **Grade Appeal Process**

Update as needed. Students who wish to appeal a grade should consult the Midwestern State University [Undergraduate Catalog](#)

### **Notice**

Changes in the course syllabus, procedure, assignments, and schedule may be made at the discretion of the instructor. This is not business-as-usual this semester...anticipate thoughtful changes as we move forward.

### **New for this fall**

This course has been planned as a fully face-to-face course for Fall 2020. The class will meet in its regularly scheduled room but will utilize social distancing and an assigned seating chart. You should regularly check D2L and the email hosted via D2L for important course information.

In the event of increased incidence and risk of COVID-19 that results in the university moving back to a shelter-in-place mode, the course instruction will transition to fully online. More instructions will be given at that time.

In an attempt to provide time for face-to-face exposure to the laboratory, we will "front-load" the lab, such that every meeting for the first half of the semester will involve lab activities. The lecture material complete the semester; some of this content can be completed online, and assume full-online conditions post-Thanksgiving.

## Course Schedule

Day	Date	Topic
M	24-Aug	Introduction to class
W	26-Aug	Introduction to minerals and the planet
F	28-Aug	Symmetry
F	28-Aug	Symmetry
M	31-Aug	Lattices
W	2-Sep	Lattices
F	4-Sep	3D representations
F	4-Sep	Mineral Properties
W	9-Sep	Mineral Properties
F	11-Sep	Optical Mineralogy
F	11-Sep	Optical Microanalysis
M	14-Sep	Optical Microanalysis
W	16-Sep	Optical Microanalysis
F	18-Sep	Crystal diffraction
F	18-Sep	Element fluorescence
M	21-Sep	Tecto and sheet silicates
W	23-Sep	Tecto and sheet silicates
F	25-Sep	Neso and soro silicates
F	25-Sep	Cyclo and Inosilicates
M	28-Sep	Carbonates and sulfates
W	30-Sep	Carbonates and sulfates
F	2-Oct	Other minerals
F	2-Oct	Lab Final
M	5-Oct	Mohs exploration
W	7-Oct	Atoms - light and energy
F	9-Oct	Atoms - electron structure & electron structure
F	9-Oct	Pauling's Rules
M	12-Oct	Lattices, packing, and symmetry
W	14-Oct	Isomorphism, solid solutions, and polymorphism
F	16-Oct	Crystal growth - twinning, defects
F	16-Oct	Mineral environments
M	19-Oct	Phases and stability
W	21-Oct	More stability
F	23-Oct	Chemical transfer
F	23-Oct	<b>Exam 1</b>
M	26-Oct	GSA Meeting
W	28-Oct	GSA Meeting
F	30-Oct	GSA Meeting
F	30-Oct	Framework silicates
M	2-Nov	Framework silicates
W	4-Nov	Framework silicates

<b>Day</b>	<b>Date</b>	<b>Topic</b>
F	6-Nov	Native elements and primitives
F	6-Nov	Halides
M	9-Nov	Carbonates
W	11-Nov	Carbonates
F	13-Nov	Sulfates & phosphates
F	13-Nov	Sulfides
M	16-Nov	Oxides and hydroxides
W	18-Nov	Ortho and ring silicates
F	20-Nov	Sheet silicates - micas and clays
F	20-Nov	Chain silicates - single chains
M	23-Nov	Gemstones
M	30-Nov	Ortho and ring silicates (online)
F	4-Dec	Chain silicates - single double chains (online)
F	4-Dec	Mineral composition of the Earth (online)
W	9-Dec	Exam 2 (online)