

**University of Arkansas
Department of Geosciences**

**GEOS 23103 – Mineralogy
Fall 2024 **Tentative Syllabus**
Mo/We 9:40 am-10:30 am Gearhart Hall 0017**

Professor: Dr. Adriana Potra
Office: Gearhart Hall 022
Office hours: Mo/We 11:00 am – 1:00 pm
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Required textbook: Introduction to Mineralogy (4th edition) by William D. Nesse and Graham B. Baird

Welcome to Mineralogy!

PURPOSE. This course introduces you to:

- The macroscopic and microscopic properties of different classes of minerals
- The relationship between chemical composition, internal structure, and external appearance of minerals
- The generation/formation of select minerals
- The use of minerals, with an emphasis on economic minerals
- The three primary groups of rocks
- The genesis and mineralogy of select rocks

LEARNING GOALS. By the end of the course, you should be able to:

- Describe and characterize minerals using hand samples and optical microscopy
- Understand the chemistry and structure of minerals
- Know the generation/formation and use of important economic minerals
- Classify and describe the formation of igneous, metamorphic, and sedimentary rocks

Computer skills: You will be required to solve problem sets using the EXCEL spreadsheet application. Please let me know in advance if you have difficulties using EXCEL.

EVALUATION: 1. **LECTURE GRADE** counts toward 2/3 of the final COURSE GRADE
2. **LABORATORY GRADE** counts toward 1/3 of the final COURSE GRADE

LECTURE GRADE: Three exams (50% of final grade), multiple homework assignments (25% of final grade), and announced short quizzes (25% of final grade) will be given. Letter grades will be assigned based on the percentage of points earned, using the following scale:

90-100% A, 80-89% B, 70-79% C, 60-69% D, <60% F.

Exams: Three in-class, in-person, closed-book examinations will be given. The exams must be completed within the 50-minute schedule class time. CEA students with additional time for exam accommodations will be allowed the additional time as permitted by their individual accommodation.

Exam questions are a combination of multiple choice, fill in the blanks, true/false, short answer, and problem solving. The exams are not cumulative.

Arrangements for taking a make-up exam must be made by you as soon as you are aware you will be missing an exam due to an Excused University Absence (see details below). Please contact me to schedule your make-up exam.

Short quizzes will be based on material presented in the previous lecture.

LABORATORY GRADE: The teaching assistant for this course, Hashindra Herath, will talk about the lab syllabus and evaluation.

Lecture Outline and Reading Assignments

Class date	Lecture topic/exams	Assigned reading
Aug 19 – 21	Introduction and Physical Properties of Minerals	Chapters 1, 6
Aug 26 – 28	Crystal Chemistry	Chapter 3
Sept 2	Labor Day Holiday	
Sept 4 – 9	Crystal Structure	Chapter 4
Sept 11 – 16	Mineral Growth	Chapter 5
Sept 18	Chemical Analysis of Minerals	Chapter 9
Sept 23 – 25	Classes canceled due to the Geological Society of America Meeting (Anaheim, CA)	
Sept 30	Exam one	
Oct 2 – 7	Introduction to Silicates	Chapter 11
Oct 9	Systematic Descriptions of Orthosilicates	Chapters 16
Oct 14 – 15	Fall Break	
Oct 16	Systematic Descriptions of Disilicates and Ring Silicates	Chapters 15
Oct 21	Systematic Descriptions of Chain Silicates	Chapters 14
Oct 23	Systematic Descriptions of Sheet Silicates	Chapters 13
Oct 28 – 30	Systematic Descriptions of Framework Silicates	Chapters 12
Nov 4	Exam 2 (not cumulative)	
Nov 6 – 11	Native Elements	Chapter 20
Nov 13 – 18	Sulfides	Chapter 19
Nov 20 – 25	Oxides, Hydroxides, and Halides	Chapter 18
Nov 27	Thanksgiving Break	
Nov 28 – 29	Thanksgiving Holiday	
Dec 2 – 4	Carbonates, Nitrates, Borates, Sulfates, Tungstates, Phosphates	Chapter 17
TBA	Final Exam (not cumulative)	

POLICIES

STUDENT SUPPORT: U of A Cares offers a supportive and encouraging partnership with students by linking them with appropriate resources that will allow them the opportunities to overcome barriers on their path to success; both personal and educational at uofacares.uark.edu

STUDENTS WITH DISABILITIES: University of Arkansas Academic Policy Series 1520.10 requires that students with disabilities are provided reasonable accommodations to ensure their equal access to course content. Students who have a documented disability and require accommodations must contact the instructor at the beginning of the semester to make arrangements for necessary classroom adjustments or accommodations. Please note, students must first verify eligibility for these through the Center for Educational Access (contact 479-575-3104 or visit <http://cea.uark.edu/> for more information on registration procedures).

EXCUSED UNIVERSITY ABSENCES are: (1) illness of the student, (2) serious illness or death of a member of the student's immediate family or other family crisis, (3) University-sponsored activities for which the student's attendance is required by virtue of scholarship or leadership/participation responsibilities, (4) religious observances, (5) jury duty or subpoena for court appearance, and (6) military duty. The instructor has the right to require that the student provide appropriate documentation for any absence for which the student wishes to be excused.

INCLEMENT WEATHER: If the University is open, class will be in-session. The University's inclement weather policy is available at emergency.uark.edu

ACADEMIC HONESTY STATEMENT: "As a core part of its mission, the University of Arkansas provides students with the opportunity to further their educational goals through programs of study and research in an environment that promotes freedom of inquiry and academic responsibility. Accomplishing this mission is only possible when intellectual honesty and individual integrity prevail. Each University of Arkansas student is required to be familiar with and abide by the University's 'Academic Integrity Policy' which is found at <https://honesty.uark.edu/policy/index.php> Students with questions about how these policies apply to a particular course or assignment should immediately contact their instructor."

Academic Integrity: Exams and assignments must be a student's own work. **No cheating or plagiarism will be tolerated. If you are suspected of academic dishonesty, the Academic Integrity process will be utilized to its fullest extent.**

SEXUAL ASSAULT AND DOMESTIC/DATING VIOLENCE: If you are in danger, dial 9-1-1. For confidential help, call the University Victim Advocate at (479) 575-7252. The University of Arkansas prohibits sexual harassment or acts of sexual assault, domestic violence, dating violence and stalking committed against students, employees, campus visitors, and other persons who use University facilities. Sexual assault is any form of sexual activity where consent is not consciously and voluntarily given. Anyone can be a victim of sexual assault. Sexual harassment is prohibited by University policy and is a form of sex discrimination prohibited by Title VII of the Civil Rights Act of 1964 and by Title IX of the Education Amendments of 1972. Sexual assault is a crime, as defined by the Arkansas criminal code. Important sexual assault information and guidance to file a formal report is available at respect.uark.edu.

DIVERSITY AND INCLUSION MISSION STATEMENT: The Department of Geosciences is committed to enhancing diversity and promoting inclusion at all levels of the department. The department is dedicated to maintaining an organizational and educational climate where differing ideas, abilities, backgrounds, and needs are fostered with opportunities for faculty, staff and students from divergent experiences to participate and contribute. The Department of Geosciences recognizes that a wide variety of perspectives, from all its members are important and necessary components of a diverse and inclusive department and of a genuinely wide-ranging contemporary education.

TECHNOLOGY POLICY: The use of cell phones, smart phones, tablets, laptops, etc., for purposes other than note taking or learning Mineralogy is not allowed during class. You are in class to learn, not socialize with your media! **Flagrant violation of this policy will result in you being dismissed from class for the day!**

EMERGENCY PROCEDURES: Many types of emergencies can occur on campus. Instructions for specific emergencies such as severe weather, an active shooter, or fire can be found on the web at emergency.uark.edu

SEVERE WEATHER (e.g., Tornado Warning):

- Follow the directions of the instructor or emergency personnel.
- Seek shelter in the basement or an interior room or hallway on the lowest floor, putting as many walls as possible between you and the outside.
- In a multi-story building, if you cannot get to the lowest floor, go to a hallway in the center of the building.

- Stay in the center of the room, away from exterior walls, windows, and doors.

VIOLENCE or ACTIVE SHOOTER (C.A.D.D.):

- **CALL.** 9-1-1
- **AVOID.** If possible, evacuate to a safe area outside the building. Follow directions of police officers.
- **DENY.** Barricade the door with desks, chairs, bookcases, or any items. Move to a place inside the room where you are not visible. Turn off the lights and remain quiet. Remain there until told by police it is safe.
- **DEFEND.** Use desks, chairs, cell phones, or whatever is immediately available to distract and/or defend yourself and others from attack.

CONCEALED CARRY ON CAMPUS: Handguns are only allowed on campus (including all classrooms) to the extent specifically authorized by state law. Everyone who lawfully possesses a handgun and an enhanced carry permit is always required to keep the handgun concealed from public view and is responsible for carrying the handgun in a safe manner. If an individual carries a concealed handgun in a personal carrier such as a backpack, purse, or handbag, the carrier must remain within the individual's immediate vicinity (within arm's reach). During this class, you may be required to engage in activities that require you to be physically separate from your belongings and you should plan accordingly. Any student who violates the concealed carry laws while on campus may be subject to criminal prosecution and/or discipline by the University, up to and including dismissal. If you observe someone displaying a handgun or other weapon on campus, it should be reported to the University of Arkansas Police Department (uapd.uark.edu). For more information: safety.uark.edu.