ENVS 230 — **Fundamentals of Geology**
Oxford College, Fall 2017

COURSE INFO

- Instructor: Melissa Hage, melissa.hage@emory.edu
- Office: OSB 224, 770-784-8345
- Lecture Time: Monday, Wednesday, and Friday 1:15 – 2:30 pm
- Lecture Location: OSB 223
- Textbook: Physical Geology Today (1st ed.) – Nance and Murphy

- Lab Time: Monday, 2:30 – 5:30 pm
- Lecture Location: OSB 223
- Lab Manual: Laboratory Manual in Physical Geology (11th edition) – Cronin and Tasa

OFFICE HOURS

- Wednesday 2:30 pm – 4:30 pm
- By appointment or chance. I am usually in my office from 8:30 am – 5:00 pm, except for when I am teaching classes or attending meetings.

OVERVIEW

"Knowledge of the Earth elucidates the world of man…
to know the world is to know oneself." Yi-Fu Tuan, 1971

This course is designed to introduce you to the exciting and dynamic field of geology. The Earth system represents a complex combination of chemistry, physics, and biology over a baffling long period of time. However, in this course, we will work to simplify this complex system by showing you how the Earth system can be observed through a combination of easily understandable physical processes and the geologic concept of plate tectonics. We will explore the Earth's history, its composition and structure, the physical processes that formed and continue to form its crust, deep time, as well as the interconnectedness between the various physiochemical spheres that influence all aspects of earth system processes. By the end of the course, you will have an increased awareness of the geology and geologic processes that surround your everyday existence and a greater understanding and appreciation for the earth sciences.

The two **overarching goals** of this course are:

1) to create a joy of learning about the Earth we inhabit and to spread that self-satisfaction and knowledge to others, such as your friends and [future] children. I want you to be able to look around you wherever you go, marvel at what you see, and understand why it is the way it is.

2) to impart to you a relevance of scientific knowledge and processes so that you can become a better thinker and decision-maker during your life – economically, politically, socially, and personally.

OVERARCHING STUDENT LEARNING OBJECTIVES

At the completion of this course, I will be able to:

1. Interpret the tectonic history of the Earth through geologic time
2. Determine past Earth processes and environments through analysis of various rocks and minerals
3. Understand the transfer of energy and matter throughout the spheres of the geosystem
4. Evaluate environmental and physical conditions as they relate to the underlying tectonic history and modern geological processes
5. Understand how geology relates to my everyday life
6. Communicate scientific ideas

At the completion of this course, I will have improved my skills of:

1. Oral and written communication
2. Accessing, reading and critically evaluating on-line and traditional resources
3. Collecting and evaluating data

GRADING AND ASSESSMENT

	%
Exam 1	9
Exam 2	9
Exam 3	9
Exam 4	9
Lab	36
Final PowerPoint presentation	9
Participation and homework	10
In-class quizzes	9
Total	100

Letter Grade	**Percent Equivalent**
A	93-100
A-	90-92.9
B+	87-89.9
B	83-86.9

Letter Grade	**Percent Equivalent**
B-	80-82.9
C+	77-79.9
C	73-76.99
C-	70-72.99

Letter Grade	**Percent Equivalent**
D+	67-69.9
D	63-66.9
D-	60-62.9
F	0-59.9

* Note: I do not curve grades. I also do not ***give*** grades. **Your final grade in this class will be based on what you have earned.**

** I am more than happy to discuss your overall grade or a grade you earned on a specific assignment. However, **I will not do so via email**. If you would like to discuss your grade, please come and see me in person during office hours or make an appointment.

COURSE POLICIES

Weekly Readings: The textbook readings are the primary source of information for this course. Class periods will be spend reviewing, discussing, and illustrating concepts presented in the text, thus *it is essential that you read the assigned materials before class meets on the assigned date*.

Canvas: Most of the course materials (syllabus, lecture notes, handouts, readings, videos, assignments, etc.) will be posted on Canvas. Several assignments will be submitted via Canvas. It is imperative that you feel comfortable using this website. If you have questions, please do not hesitate to come and talk to me about navigating Canvas.

In-Class Participation: Class attendance is important and I expect you all to show up to class on time, prepared, and ready to participate. You should bring your textbook, lab manual, calculator, and more than one color pen to every class. That being said, you are all adults and capable of making the decision about whether you chose to come to class or not. Thus, attendance will not be taken in the traditional way. There will be daily in-class activities designed to check for preparation and understanding, generate discussion, encourage participation, and deepen comprehension of the course material. For some of these activities, full points will be awarded for participation. For other activities, half points will be awarded for participation and full points will be awarded for correctness. There will be no make-ups for missed participation; however, the lowest 3 grades will be dropped at the end of the semester. There are no excused absences for lecture. The dropping of the 3 lowest participation grades act as your missing class freebies and can be used for any reason (illness, studying, travel, family emergency, wild monkeys breaking into your dorm, etc.). Any additional missed classes will count as zeros for those days' participation. Missing class regularly will have a detrimental effect on your grade.

Extra Credit: Extra credit is designed to help those students that have been trying all semester and just need a little extra help. It is not meant to be a backup plan for not working hard all semester. If I decide to offer extra credit, it can only be completed if you have attended at least 90% of the classes between the first day of class and Nov. 20.

In-Class Quizzes: Quizzes will be administered throughout the semester the to check for content understanding and to ensure you are engaging in distributive studying. These will be partially cooperative quizzes:

Part 1: You will independently take the quiz
Part 2 (optional): You can re-take the quiz, but will work in your group

Your final quiz score is based upon 75% from Part 1 and 25% from Part 2. If you choose not to complete the group quiz or if your grade on Part 1 is higher than Part 2, only your grade from Part 1 will count. Bottom line: taking the cooperative quiz will not negatively affect your quiz grade. If you are late or absent, you will not be able to make up the quiz without a legitimate excuse presented **prior** to the quiz. Some quizzes will be announced, others will not. The lowest quiz grade will be dropped at the end of the semester.

Homework: There will be a handful of homework assignments given throughout the semester. They will count towards your participation grade, but these assignments will NOT be allowed to be any of the 3 lowest participation grades dropped.

Late Assignments: Many assignments will be turned in via Canvas. All of these assignments will be due at 10:00 am on the day they are due. If an assignment is due in class, it will be due at the start of class. If it is turned in at the end of class, it is considered late. Assignments will be accepted up to 2 days past the due date. Scores on late assignments will be penalized 10 points each day they are late. So if an assignment is due in class on a Monday at 1:15 pm and you turn it in between Monday at 1:16 pm and Tuesday at 1:15 pm, you will loose 10 points. If you turn it in between Tuesday at 1:16 pm and Wednesday at 1:15 pm, you will loose 20 points. You may not turn in the assignment after 1:15 pm on Wednesday.

Exams: There are 4 exams: 3 in-class exams and a final. The three in-class exams will cover course materials directly preceding them. The final will be partially comprehensive. This means that the majority of the exam will cover the course material directly preceding it, however some of the larger-scale concepts that we keep coming back to throughout the semester will also be on the exam. Ordinarily, exams cannot be made up. If you miss an exam due to an excused absence, you must notify me prior to the time of the exam and schedule a time to take the exam. If the absence is not excused, you will be given a zero for the missed exam. Students are cautioned that any excuse for missing an exam will come under sever scrutiny and I will make the final decision regarding whether or not a missed exam is acceptable.

The college sets the final exam schedule. Leaving early for rides or flights, vacations, relatives' or friends' weddings or graduation, jobs, or having more than one exam on one day are NOT considered valid reasons to request an earlier or later exam date/time.

PowerPoint Presentation: You will research a geologic question of interest, create an 8-10 min PowerPoint presentation, and present your findings during the last two lab sessions of the semester. Further details will be provided on a separate handout.

Classroom Conduct: In order to maintain a good learning environment, rude and/or disruptive behavior will NOT be tolerated. You will be asked to leave the class if your behavior is deemed inappropriate. The following are considered rude and disruptive:

(1) Consistently arriving late to class
(2) Private conversations during class
(3) Lack of attention during class
(4) Habitually leaving and returning to class in one class period
(5) Allowing your cell phone to ring/vibrate on numerous occasions

Tardiness: I view tardiness as rude and disrespectful to both myself and to the rest of the class. I do, however, understand that sometimes it just happens. You are allowed to be late 3 times, after which you will not receive participation points for every day after that you are late. If you are late to class on a day there is a quiz, you will not be allowed to take the quiz. If you are late to class on a day when a homework assignment is due, that homework assignment will be considered late.

Acceptable Laboratory Absences: There are no excused absences for lab. However, on rare occasions, illness, family emergencies and certain school-sponsored events may make it necessary for

a student to miss a lab session. You must notify me BEFORE the day of the absence in all but the most extreme emergencies. In all cases, I will make the final decision regarding whether or not an absence is acceptable. An unexcused absence from lab results in a 5-point reduction in the final grade. Two unexcused lab absences will result in the failure of the course.

Religious Holidays: Instructors are encouraged, not required, to accommodate students' academic needs related to religious holidays. Please make every effort to negotiate your religious holiday needs within the first two weeks of the semester; waiting longer may compromise your instructor's ability to extend satisfactory arrangements. If you need guidance negotiating your needs related to a religious holiday, the College Chaplain, Rev. Lyn Pace, ppace@emory.edu, Candler Hall 202, is willing and available to help. Rev. Pace is not tasked with excusing students from classes or writing excuses for students to take to their professors. Emory's official list of religious holidays may be found at http://www.religiouslife.emory.edu/faith_traditions/holidays.html

Cell Phones: The use of cell phones is not allowed in the classroom and the laboratory, unless I give you specific instructions to use them. Please turn off your phone before you come to class and leave your phone at the front during exams. Cell phones cannot be used as a calculator on any quizzes or exam.

Personal Computer: If you would like to take notes on your personal laptop in class you must ask for special permission. Use of laptops to surf the web, login to Facebook, Skype or other networking/chat during class is unprofessional and unacceptable.

Honor Code: All examinations and all work for credit in this course comes under the regulations of the Honor Code. Your signature on your work attests to your upholding the Honor Code. Please read the information on **plagiarism** on the Library web page and always ask if you have any questions about assignments.

Policy regarding students with disabilities: The Office of Accessibility Services (OAS) works with students who have disabilities to provide reasonable accommodations. In order to receive consideration for reasonable accommodations, students must contact OAS and complete the registration process. Faculty may not provide disability accommodations until an accommodation letter has been processed; accommodations are not retroactive. Students registered with OAS who receives a letter outlining specific academic accommodations are strongly encouraged to coordinate a meeting time with their professor to discuss a protocol to implement the accommodations as needed throughout the semester. This meeting should occur as early in the semester as possible. Contact OAS for more information at (770) 784-4690 or oas_oxford@emory.edu. Additional information available at: http://equityandinclusion.emory.edu/access/students/index.html.

SYLLABUS OF LECTURE TOPICS

	Date	Lecture Topic	Textbook	HW/Quiz
W	Aug. 23	Class Introduction		
F	Aug. 25	Birth of the Earth	Ch. 1	
M	Aug. 28	Foundations of Modern Geology *Lab – Plate Tectonics*	Ch.1	
W	Aug. 30	Plate Tectonics	Ch. 1	Quiz 1
F	Sept. 1	Plate Tectonics	Ch. 2	
M	**Sept. 4**	**NO CLASS – Labor Day**		
W	Sept. 6	Plate Tectonics	Ch. 2	
F	Sept. 8	Minerals	Ch. 3	Quiz 2
M	Sept. 11	Minerals *Lab- Mineral ID*	Ch. 3	
W	Sept. 13	Minerals	Ch. 3	Quiz 3
F	Sept. 15	EXAM 1		
M	Sept. 18	Origin and Evolution of Igneous Rocks *Lab – Igneous Rocks*	Ch. 4	
W	Sept. 20	Origin and Evolution of Igneous Rocks	Ch. 4	
F	Sept. 22	Origin and Evolution of Igneous Rocks	Ch. 4	Quiz 4; Proposal Due
M	Sept. 25	Origin and Evolution of Igneous Rocks *Lab – Volcanoes*	Ch. 4	
W	Sept. 27	Weathering and Soil	Ch. 5	Quiz 5
F	Sept. 29	Weathering and Soil	Ch. 5	
M	Oct. 2	Sedimentation and Sedimentary Rocks *Lab – Sedimentary Rocks*	Ch. 6	Quiz 6
W	Oct. 4	Sedimentation and Sedimentary Rocks	Ch. 6	
F	Oct. 6	Sedimentation and Sedimentary Rocks	Ch. 6	Quiz 7
M	**Oct. 9**	**NO CLASS – Fall Break**		
W	Oct. 11	EXAM 2		
F	Oct. 13	Metamorphism and Metamorphic Rocks	Ch. 7	
M	Oct. 16	Metamorphism and Metamorphic Rocks *Lab – Metamorphic Rocks*	Ch. 7	
W	Oct. 18	Metamorphism and Metamorphic Rocks	Ch. 7	
F	Oct. 20	Geologic Time	Ch. 8	Quiz 8
M	Oct. 23	TBD *Lab - TBD*		
W	Oct. 25	TBD		
F	Oct. 27	Geologic Time	Ch. 8	Annotated Bib.
M	Oct. 30	Plates and Plate Boundaries *Lab - TBD*	Ch. 9	Quiz 9
W	Nov. 1	Plates and Plate Boundaries	Ch. 9	

F	Nov. 3	Deformation and Mountain Building	Ch. 10	
M	Nov. 6	Deformation and Mountain Building *Lab – Geologic Structures*	Ch. 10	Quiz 10
W	Nov. 8	EXAM 3		
F	Nov. 10	Earthquakes and Earth's Interior	Ch. 11	
M	Nov. 13	Earthquakes and Earth's Interior *Lab - TBD*	Ch. 11	
W	Nov. 15	Running Water	Ch.13	Quiz 11
F	Nov. 17	Running Water	Ch.13	Abstract
M	Nov. 20	Running Water *Lab - TBD*	Ch. 13	Quiz 12
W	**Nov. 22**	**NO CLASS - Thanksgiving**		
F	**Nov. 24**	**NO CLASS - Thanksgiving**		
M	Nov. 27	Glaciers and Glaciation *Lab - Presentations*	Ch. 15	
W	Nov. 29	Glaciers and Glaciation	Ch. 15	
F	Dec. 1	Coastlines and Coastal Processes	Ch. 17	Quiz 13
M	Dec. 4	Coastlines and Coastal Processes *Lab - Presentations*	Ch. 17	
Th	Dec. 7	EXAM 4 (2 – 5 pm)		

*** This schedule subject to change during the semester.**
**** Not all homework assignments are listed here.** You may have additional homework assignments given throughout the semester.
***** All exam and due date conflicts must be resolved within the first two weeks of the semester.**