

## EaES 101: Global Environmental Change

Spring 2017

4 Credits

### Instructor Information:

Dr. Sarah Cadieux  
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### Course Information:

Lectures: MWF 10- 10:50 am LC E1  
Office Hours: M 11 – 12 pm-SES 2470  
W 11 – 12 pm– Argo Tea  
or by appointment

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*“Knowledge of the Earth elucidates the world of man... to know the world is to know oneself.”*  
Yi-Fu Tuan, 1971

### COURSE DESCRIPTION:

The Earth has played an integral role in shaping our society and will affect your entire life! The Earth is a complex system of interacting physical, chemical, and biological processes. This course is an introduction to the structure and evolution of the Earth’s surface environment, with an emphasis on climate.

### GOALS OF THE COURSE:

Learning Outcome	Assessments
1. I understand Earth’s climate system and how it affects the Earth	<ul style="list-style-type: none"><li>• In-class activities</li><li>• Laboratories</li><li>• Exams</li></ul>
2. I can apply principles of logic and reasoning to analyze geologic problems	<ul style="list-style-type: none"><li>• In-class activities</li><li>• Laboratories</li><li>• Exams</li></ul>
3. I understand how geology relates to my every day life	<ul style="list-style-type: none"><li>• In-class activities</li></ul>
4. I can travel to new and exciting places and explain to my friends and family how those landscapes formed and may change in the future	<ul style="list-style-type: none"><li>• Field trip</li><li>• Laboratories</li></ul>
5. I am able to communicate scientific ideas	<ul style="list-style-type: none"><li>• Laboratories</li><li>• In-class activities</li></ul>

### TEXT and MATERIALS:

- Marshak, Earth: Portrait of a Planet, 5<sup>th</sup> edition. Also available as an E-book! *NOTE: A 4<sup>th</sup> edition is fine HOWEVER, all text readings listed are from the 5<sup>th</sup> edition. If you choose a 4<sup>th</sup> edition, you will need to consult the index for corresponding pages.* (Copies of the text are available on reserve in the Daley Library for hourly checkouts)
- Additional readings on Blackboard
- iClicker
- Laboratory Manual, EAES 101-supplied in lab the first week of classes
- Basic calculator for exams (ability to do log and exponents)

### COURSE WEB SITE:

Most of the course materials (syllabus, lecture notes, handouts, readings, laboratory assignments) will be posted on Blackboard. I will use Blackboard as a means of communication with you outside of the classroom.

## **GRADING AND ASSESSMENT:**

<b>Assessment</b>	<b>%</b>
Pre-class assignments	12
In-class participation	12
Exam 1	12
Exam 2	12
Exam 3	12
Labs report	25
Pre-lab assignments	5
Lab exam	5
Field trip	5

### **Generalized Grading Scheme**

A= >90%	B= 89-80%	C=79-70%	D=69-60%	F <60%
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*Subject to revision*

***Regardless of your total points, you will not pass this course if you do not pass the lab portion (labs, pre-lab assignments, lab quiz and lab exam) AND attend the field trip!***

**Grading Policies:** Grades are assigned on a straight scale (not curved) and there are no “extra credit” assignments.

**Pre-class assignments:** Lecturing about terminology is no fun for me or you! In order to introduce you to topics we will be discussing and working on in class that day, there will be a short quiz based upon designated reading and/or video prior to every class. The readings/videos for each day are listed on the schedule, and all BlackBoard readings/videos (BB) can be found in the “Readings” folder on BlackBoard.

→You may submit up to three attempts for each pre-class assignment and your grade on each assignment will be the average of all attempts. All pre-class assignments are due **by 9:45 am** on class days. There will be **no** make-ups, however, the lowest 10% will be dropped at the end of the semester.

**In-class participation:** We will be using iClickers and in-class activities 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 (either for technical difficulties or for absences), however, the lowest 10% of grades will be dropped at the end of the semester.

→To receive credit for the responses you submit with iClicker, you must register your iClicker by January 20<sup>th</sup>. You must register your clicker **with Blackboard**. If you do not, I will not be able to match your responses with your name and you will not receive credit.

**Exams:** There will be 3 cooperative exams throughout the semester. Each exam will cover the topics preceding that exam (**not cumulative**-however, keep in mind that we will be building upon prior knowledge).

Exam Part 1: You will independently take the exam (75%)

Exam Part 2 (optional): You will re-take the exam (25%) but can work in your group (3-4 people).

→If you choose not to complete Part 2 OR if your score is higher from Part 1, the Part 1 score will be your grade. Bottom line, taking the cooperative exam will not negatively affect your grade!

There will be **no** make-up of exams without a legitimate excuse discussed **prior** to the exam (I reserve the right to determine what is “legitimate”). In this event, only Part 1 can be made-up.

**Laboratories (1099 SEL):** It is impossible to earn a passing grade in this course without passing the lab segment (pre-lab + lab +lab exam). ***You can only attend the laboratory in which you are registered for!*** Laboratory reports will be collected at the **start** of the lab period the following week. A late penalty will be assessed for late hand-ins (10%/day) and late labs will not be accepted after one week. There are **no** make-up labs allowed. However, the lowest lab grade (both lab and pre-lab) will be dropped. You will receive more information about laboratory procedures and policies in your lab during first week of class.

**Field Trip:** Because Earth Science is a field-based science, there is a **mandatory, all-day** field trip scheduled for **Saturday, April 1<sup>st</sup>**. The trip will leave from the north side of SES on Taylor St. at 8:00 AM sharp, and should return before 6:00 pm. **No private automobiles will be permitted** (This is University Policy. If you do drive, you will be asked to leave and will receive an incomplete for the trip). The trip will be made regardless of weather, so dress appropriately. Expect mud, water and brush and plan to bring your own lunch. If you are unable to participate in the trip for a medical reason, it is your responsibility to discuss with me by the 10<sup>th</sup> day of the semester. **If you cannot attend the field trip for a non-medical reason, you should drop the course now.**

#### **COURSE POLICIES:**

**Lecture Attendance:** 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. However, missing class regularly will have a detrimental effect on your grade:

- a. We will be discussing information that isn't discussed in the textbook
- b. You are responsible for knowing about announcements made during lectures!!
- c. iClicker participation **cannot** be made up if you miss a class.

**Classroom conduct:** I have no problem with you bringing laptops, iPads, or whatever to class, as long as you are using them for a classroom purpose. 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.

**Working together and plagiarism:** Science is a collaborative subject! You are strongly encouraged to discuss course material with your classmates during laboratories and studying for exams. However, unless specifically told otherwise, you should not be sharing your written or drawn work for submission with classmates. Failure to do so will result in not only a zero on the assignment, but will be reported to the University. You are expected to commit to UIC's standards of academic integrity: <https://catalog.webhost.uic.edu/ucat/cat1315archive/GR.shtml#qa>. If you have any questions as to what constitutes plagiarism vs. collaborative working, I would be happy to talk with you more.

**Disabilities and/or Learning Challenges:** If you have specific needs that require special aids or accommodation, please let me know by January 20<sup>th</sup> so that your learning needs may be appropriately met. Office of Disability Services: 1200 W. Harrison St. Room 1190 SSB; phone: 312-413-2183.

**Religious Holidays:** If you observe a religious holiday that will cause you to miss a required class event, you need to notify me by January 20<sup>th</sup>.

**SCHEDULE:**

	WEEK	DATE	CLASS TOPIC	PRE-CLASS READING/WATCHING	LAB	
ATMOSPHERE AND HYDROSPHERE	1	January 9	Introduction		No lab	
		January 11	Scientific Process	Pg. 8; BB Ch2		
		January 13	Earth Systems	41-47; 839-841		
	2	January 16	<b>No class-Martin Luther King Day</b>			1-Lab intro and science skills primer
		January 18	The atmosphere	728-738; BB 448-454 <i>*pre-class assignments start!</i>		
		January 20	Heat budget	54, BB 460-474		
	3	January 23	Coriolis effect and wind	665, 739-744	2-Heat budget <i>*pre-lab assignments start with this lab!</i>	
		January 25	Weather	744-750		
		January 27	Extreme weather	750-761		
	4	January 30	No class			3-Wave tank experiments
		February 1	Water cycle	579-582		
		February 3	Ocean circulation surface	662-667; BB 392-397		
	5	February 6	Ocean circulation deep	662-667; BB 392-397	4-Topographic maps	
February 8		<b>Exam 1-Individual</b>				
February 10		<b>Exam 2-Group</b>				
EARTH SURFACE PROCESSES	6	February 13	Earth materials	141-147, 261-268	6-Flume	
		February 15	Carbon cycle	846; BB YouTube		
		February 17	Weathering	183-194		
	7	February 20	Soils	195-200; BB 206-219	5-Stream development	
		February 22	Erosion	615-618; 623-626		
		February 24	Rivers and streams	628-635-640-651; YouTube		
	8	February 27	Water quality	TBA	7-Sediments and sedimentary processes	
		March 1	Sediments	203-210; BB YouTube		
		March 3	Sedimentary rocks	219-229		
	9	March 6	Glaciers, general	796-808	8-Glaciers and glacial landforms	
		March 8	Glaciers, erosion	808-812		
		March 10	Glaciers, transport	812-825		
	10	March 13	Ice melt mechanisms	826-835; BB Nat Geog	Lab quiz	
March 15		<b>Exam 2-Individual</b>				
March 17		<b>Exam 2-Group</b>				
	11	March 20-24	Spring Vacation			
CLIMATE THEN AND NOW	12	March 27	Understanding Geologic Time	Chp. 12; BB YouTube	9-Geology of the Chicago Region	
		March 29	Brief history of the Earth	418-430; BB YouTube		
		March 31	Chicago Geology	BB Build Illinois		
		April 1	<b>Field Trip</b>			
	13	April 3	More history of the Earth	430-432, 857-858	11-Fossils	
		April 5	Factors influencing climate	BB Website		
		April 7	Factors influencing climate	BB IPCC; BB 398-405		
	14	April 10	Climate proxies	TBA	12-Climate: Past, Present, Future	
		April 12	Historic climate change	YouTube		
		April 14	Evidence of current climate change	862-866; BB Doran EOS; YouTube		
	15	April 17	Evidence of current climate change	BB 392-397; BB IPCC	13-Global sea level change	
		April 19	Consequences of climate change	BB NYT Article		
		April 21	Consequences of climate change	TBA		
16	April 24	Future climate: Mitigation	BB IPCC Mitigation	Lab Exam		
	April 26	Future climate: Adaptation	TBA			
	April 28	Local climate	TBA			
17		May 1-5	<b>Final exam-date TBA</b>			

\*schedule is subject to change. Any changes will be updated on BlackBoard