

ESC1000
Introduction to Earth Sciences

COURSE SYLLABUS

Spring, 2015

INSTRUCTOR: KYLE MIN

OFFICE: 361 Williamson Hall
OFFICE HOURS: 3:00 – 4:00 pm WED & FRI or by appointment
OFFICE PHONE: 352-392-2720 (leave a message if the instructor is not available;
please speak clearly)
E-MAIL ADDRESS: kmin@ufl.edu
INSTRUCTOR WEB PAGE: <http://www.clas.ufl.edu/users/kmin/>
COURSE MATERIALS: <https://lss.at.ufl.edu/>
CLASS HOURS: 10:40-11:30 pm MWF
CLASSROOM: 100 Williamson Hall
COURSE CREDIT: 3
COURSE SECTION: 1D60

TEACHING ASSISTANT: Qianying Lin (lqy1989@ufl.edu)
OFFICE: 375 Williamson Hall
OFFICE HOURS: 10:00 am – 12:00 pm TUE & THUR

A. DESCRIPTION

ESC1000 is an introductory course that focuses on basic concepts and various aspects of Earth Sciences. As one of terrestrial planets in the solar system, Earth is believed to have formed ~4.5 billion years ago and experienced unique evolution since then. This course will cover a range of subjects related to Earth Sciences, including the current dynamics of plates, earthquakes, internal structure of Earth, surface processes, volcanism, modification of rocks, groundwater, climate change, etc. Furthermore, students will learn some fundamentals of other planets in our solar system to better understand our Planet Earth. Numerous examples will be introduced to demonstrate how the conceptual framework can be applied in our daily life. Multiple types of teaching materials (movie clips, daily news on Earth Sciences, and quick in-class experiments) will be used to improve the quality of this course. There will be two or three “Friday Movie Days” which will introduce interesting educational movies relevant to the course subjects.

B. COURSE OBJECTIVES

1. To introduce students to the basic concepts of Earth Sciences
2. To orient students to the current understanding of birth and history of Earth
3. To provide students the way to look at Earth as a member of our solar system
4. To discuss with students about daily issues related to Earth Sciences

C. COURSE TOPICS

Please see the attached tentative schedule.

D. TEXTBOOK

Required Textbook: Understanding Earth, 6th edition, 2010, by John Grotzinger and Tom Jordan, Freeman

E. COURSE MATERIALS

All the course materials including class slides and handouts will be available at the UF Sakai Website (<https://lss.at.ufl.edu/>). The id and password to access these contents will be distributed once the class begins. Please check this website frequently.

F. GRADING PLAN

Final scores will be curved to the normal distribution. 100-normalized scores in the range of 93.3-100 (A), 90-93.3 (A-), 86.7-90 (B+), 83.3-86.7 (B), 80-83.3 (B-), 77.7-80 (C+), 73.3-76.7 (C), 70-73.3 (C-), 66.7-70 (D+), 63.3-66.7 (D), 60-63.3 (D-) and below 60 (E).

Exams (85%): There will be two midterms and one final exam which are equally important. Out of student's three exam results, two better ones will be considered as 35% each, and the worst one will contribute only 15% to the total exam scores (85% total). The exams will not be comprehensive which means students need to study only parts after the previous exam. The exams will be mainly composed of multiple-choice and simple-answer questions. The exams are important for grading, so please discuss with the instructor in advance if you have any problems in taking the exams on the scheduled dates. Remember the 35%-35%-15% rule described above – your worst performance in one exam will be less seriously considered compared to the other two. Any post-exam excuses without pre-exam notice will allow very limited credit. Bring your UFID for the exams. The total scores will be curved to the normal distribution.

Homeworks (15%): A few in-class and after-class assignments will be distributed throughout the semester. Students are supposed to work on these tasks independently without collaboration with others. The due date will be indicated for each assignment (normally one week from the time of distribution), and they need to be submitted at the beginning of the class of the due date.

Attendance and Quizzes (5% extra credit): The class attendance is strongly recommended because significant parts of the exams will be covered during the classes. There will be eight "Attendance Checks + Quizzes" without notice, and each with correct answers will add +5 pts, and with wrong answers +2 pt. Out of eight "Attendance Checks + Quizzes" scores, only the highest six scores will be used for the final grading. Therefore, you can miss two "Attendance Checks + Quizzes" without any loss of points. The maximum credit of the "Attendance and Quizzes" will be $6 \times 5 = 30$ pts.

G. WEB-BASED INTERACTIVE RESPONSE SYSTEM (TOP HAT MONOCLE)

The class will use Top Hat Monocle system which provides in-class interactive feedback service throughout the semester. All the students are required to register in the web-based system (please see the instruction attached in this syllabus). The attendance checks and quizzes stated above will be performed through this system.

H. FOR STUDENTS WITH DISABILITIES

Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

TENTATIVE SCHEDULE

DATE	DAY	TOPIC	READING	Subjects/Questions to be addressed	
7-Jan	Wed			Introduction	
9-Jan	Fri	Plate Tectonics	(Ch. 1,2)	What is plate tectonics?	
12-Jan	Mon		(Ch. 2)	Evidence and Driving Force	
14-Jan	Wed		(Ch. 2)	Different types of plate boundaries	
16-Jan	Fri	Earthquake	(Ch. 13)	How does earthquake happen?	
19-Jan	Mon			Martin Luther King Day (no class)	
21-Jan	Wed		(Ch. 13)	What can we learn from earthquake?	
23-Jan	Fri	Earth's Interior	(Ch. 14)	How do we understand the invisible world?	
26-Jan	Mon		(Ch. 14)	Chemical compositions of Earth's Interior	
28-Jan	Wed	Minerals, Rocks	(Ch. 3)	Elements, minerals and rocks	
30-Jan	Fri			Friday Movie - "Magnetic Storm" & In-class Assignment	
2-Feb	Mon			(Ch. 3)	Why do we study minerals and rocks?
4-Feb	Wed			(Ch. 3)	Rock Cycle
6-Feb	Fri			Review + Q&A session for the 1st Midterm	
9-Feb	Mon			1st Midterm (10:40-11:30 am)	
11-Feb	Wed	Igneous Process	(Ch. 4)	Solid from Melts	
13-Feb	Fri		(Ch. 4, 12)	Volcanism: Fire from Ground1	
16-Feb	Mon		(Ch. 16)	Volcanism: Fire from Ground2	
18-Feb	Wed	Sedimentation	(Ch. 5)	Weathering and Erosion1	
20-Feb	Fri			Friday Movie - "Volcano under the City" & In-class Assignment	
23-Feb	Mon			(Ch. 6)	Weathering and Erosion2
25-Feb	Wed			(Ch. 7)	Sedimentation Process1
27-Feb	Fri			(Ch. 7)	Sedimentation Process2
2~7-Mar				Spring Break (no class)	
9-Mar	Mon	Metamorphism	(Ch. 8)	What happens to rocks in deep Earth?	
11-Mar	Wed		(Ch. 8)	Do rocks change their forms?	
13-Mar	Fri			What can we learn from it?	
16-Mar	Mon	Geologic Time		Clocks in Rocks 1: Timing the Geologic Record	
18-Mar	Wed			Clocks in Rocks 2: How do we know the absolute ages?	
20-Mar	Fri			Review + Q&A session for the 2nd Midterm	
23-Mar	Mon			2nd Midterm (10:40-11:30 am)	
25-Mar	Wed	Solar System	(Ch. 9)	Evolution of Other Terrestrial Planets	
27-Mar	Fri		(Ch. 9)	Our Solar System	
30-Mar	Mon		(Ch. 9)	Formation of the Moon	
1-Apr	Wed			Meteorites: Rocks from Sky	
3-Apr	Fri			Friday Movie - "Mars: Dead or Alive" & In-class Assignment	
6-Apr	Mon	Climate Change	(Ch. 15)	Climate Change	
8-Apr	Wed		(Ch. 17)	Hydrologic Cycle and Groundwater	
10-Apr	Fri		(Ch. 17)	Karst Topography and Florida	
13-Apr	Mon	Ice on Earth	(Ch. 21)	Glaciers: The work of Ice	
15-Apr	Wed		(Ch. 22)	How does geosystems interact to develop the present landscape?	

17-Apr Fri
20-Apr Mon
22-Apr Wed

TBA
Review + Q&A session for the Final Exam
Final Exam (10:40-11:30 am)
