

Department of Earth & Environmental Sciences
LEHIGH UNIVERSITY

EES 21 Introduction to Planet Earth 4 credits Fall 2004

Professor Dave Anastasio, Office 306A Williams Hall

Office Hours: Tuesday 9:00-10:00 AM and Thursday 2:00-3:00 PM, or you can Email your questions or for an appointment dja2@lehigh.edu (preferred), or phone x85117.

Class meets two days weekly, Tuesday and Thursday, 10:45 AM-12:00 PM in Williams 100. *EES 21 is a 3 credit course which meets the university's science requirement. Students in CAS who need to satisfy the lab science requirement, can sign up for EES 22 Exploring Earth, simultaneously or following successful completion of EES 21.* Lecture presentations and course announcements will be posted on blackboard (www.bb.lehigh.edu), please check if often.

Class Rules: Turn off your cell phone before class, please no text messaging, Ipods, or other ear phones in during class. Williams 100 is a difficult room to get in and out of and the room will be near capacity so please get to class on time to minimize disruption.

Textbook:

Earth Science, Understanding Environmental Systems. 1st edition, 2003. Edward W. Spencer, McGraw Hill, Boston, 518 p. You may wish to consult your book during class since many of the book's illustrations will be used during lecture or print out the lecture presentations to produce a lecture notebook, which you can annotate with notes during class.

Personal Response System: To help you learn more and have improved exam success, you are required to purchase from a "clicker" for \$5 from EES and register the CPS with einstruction corporation for \$15. You are required to bring your registered CPS to class everyday. In class exercises count towards class participation grade and can't be made up.

Blackboard: Lecture Powerpoint presentations, laboratory handouts and course announcements will be posted on the Lehigh's Blackboard system (www.bb.lehigh.edu). Check the site before class and lab.

Course Evaluation:

Hour exams 2 @ 20%	40%
Final exam (cumulative)	40%
Class participation	20%

Mid Term Grades will be calculated in mid-October, they are due the 19th. Midterm grades will be based on 1 exam, plus quizzes, they will represent ~25-30% of the final grade.

Peer Tutoring/Teaching Assistants: Regular class attendance is the only way to do well in the course. You are encouraged to be proactive in getting academic assistance from me, EES 22 TAs (office hours will be posted on Blackboard), and peer tutors (contact the office of associate dean Susan Lantz).

Accommodations for Students with Disabilities: If you have a disability for which you are or may be requesting accommodations, please contact both your instructor and the Office of Academic Support Services, University Center 212 (610-758-4152) as early as possible in the semester. You must have documentation from the Academic Support Services office before accommodations can be granted.

Course Objectives:

The Earth is a dynamic planet with four interacting components: the hydrosphere (water and ice), atmosphere (air), geosphere (earth), and biosphere (life). These components influence each other in a variety of ways creating the environment in which we live. The Earth is ~4.6 Ga (billion years old) and has evolved through time. Earth's systems are constantly changing at rates from microseconds to hundreds of millions of years. Processes which shape the earth and impact our lives occur at a variety of scales from subatomic to astronomical. In recent time, the human population has increased rapidly from ~ 1 billion in 1800, to near 6.5 billion today and projected to reach more than 9 billion by 2050. Since earth has finite limits and resources, humans have become an important force in shaping the environment. In this course, we will examine the structure of our planet, earth materials, and the processes

acting through time, which have shaped the earth and continue to reshape it today. This background will serve as a departure point for those who choose to pursue further studies in earth and environmental science. For those choosing other educational and career paths, this introduction will enable you to make informed decisions concerning development of our planet, resource exploitation, energy consumption, land use, and waste disposal.

Expectations:

You are expected to attend all class meetings. Material presented in class will depart from the material covered in the book. You will be responsible for all material covered in class as well as assigned readings.

Course assignments, unless announced otherwise, are expected to be your own work and on time.

Examinations:

Exams will examine your mastery of lecture and reading material. All exams will be multiple choice. The Lecture Exams will take place during normal class time. The final exam is cumulative. Please do not schedule departure at the end of the semester until the final has been scheduled. No make-up examinations will be given for the lecture exams. Your grade on the Final Exam will be used for one missed lecture exam when calculating final grades. A second missed exam will result in course failure. Quizzes will be given during most classes over the course of the semester and used to calculate the class participation grade. No make-up quizzes will be provided.

Course outline:

Week 1

8/29	Course introduction--Earth systems	Introduction
8/31	Earth materials: Minerals	Chap. 1

Week 2

9/5	Earth materials: Magmatism and igneous rocks	Chap. 2
9/7	Earth materials: Sediments and sedimentary rocks	
9/8	Last Day to Add/Drop w/o W	

Week 3

9/12	Earth materials: Metamorphism and metamorphic rocks/Earth resources	
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9/14	Earth's interior	Chap. 3
<i>Week 4</i>		
9/19	Geologic time	Chap. 4
9/21	Stratigraphy: Relative dating exercise	
<i>Week 5</i>		
9/26	Plate tectonics:	Chap. 5
9/28	Exam 1 (9 lecture topics, 5 chapters, 4 labs)	
<i>Week 6</i>		
10/3	Earthquakes	Chap. 6
10/5	Mountain building and Rock deformation	
<i>Week 7</i>		
10/10	No class Pacing Break	
10/12	Geology of North America	
<i>Week 8</i>		
10/17	Igneous activity	Chap. 7
10/19	Oceans	Chap. 8
<i>Week 9</i>		
10/24	Oceanic circulation	Chap. 9
10/26	Coastal processes	Chap. 10
<i>Week 10</i>		
10/31	Structure and composition of the atmosphere	Chap. 11
11/2	Air Pressure and wind	Chap. 12
<i>Week 11</i>		
11/7	Weather	Chap. 13
11/9	Exam 2 (10 lecture topics, 8 chapters, 6 labs)	
<i>Week 12</i>		
11/14	Climate and Climate change	
11/16	Terrestrial Environments/Weathering and Soil Development	Chaps. 14&15
11/14	Last day to drop with a W	
<i>Week 13</i>		
11/21	Mass Wasting	Chap. 16
11/23	No Class Thanksgiving Break	
<i>Week 14</i>		
11/28	Wind	Chap. 17
11/30	Streams and Landscape evolution	Chap. 18

Week 15

12/5 Groundwater

12/7 Glaciers and their deposits

12/8 Last day to drop with WP/WF

12/9 Final review

12/12-20 Final Exam, (~50% of final- 7 new lectures, 7 chapters, 6 labs,
~50% comprehensive review)

Chap. 19

Chapter 20