Department of Earth & Environmental Sciences
LEHIGH UNIVERSITY

CRN 45060 EES 21 Introduction to Planet Earth 3 credits Fall 2015

Professor Dave Anastasio, Office 109C STEPS Building
Office Hours: Monday 10:00 AM-11:00 PM and Tuesday 10:00-11:00 AM, or you can Email your questions or for an appointment email dja2@lehigh.edu (preferred), or phone x85117.

EES 21 meets twice weekly, Monday and Wednesday, 8:45-10:00 AM in STEPS 101.

EES 21 is a 3-credit course that meets the Lehigh University's natural science requirement. The course has no prerequisites. 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. If you need a 4th natural sciences credit but not a lab consider EES 4 Science of Environmental Issues, 1 credit.

Class Rules: In Consideration Of Your Classmates And I, Turn Off Your Cell Phone Before Class, Please No Text Messaging, Ipods, Or Use Of Ear Phones During Class. Please Get To Class On Time To Minimize Disruption.

Textbook:

Recommended but not required. Earth. 2nd edition, 2015. Hendrix and Thompson, Cengage Learning, 451 p. ISBN-13-978-1-285-44226-6. In addition to the textbook you may wish to consult online resources available at usgs.gov or nasa.gov.

Coursesite: Lecture voice over Powerpoint presentations and course announcements will be posted on the Lehigh's coursesite system (coursesite.lehigh.edu). Check the site often.

Expectations:

You will maximize your learning if you come to class, so I expect you to attend all class meetings. To encourage class attendance, there will be six unannounced assignments during class time that cannot be made up. Furthermore, material presented in class will depart from the material covered in the book. You will be responsible for all material covered in class. Course assignments, unless announced otherwise, are expected to be your own work and on time.

In-Class Assignments:

There will be six unannounced, short in-class assignments. The in-class assignments cannot be made up for absences or lateness. The assignments will generally be at the beginning of class. Your four highest graded in-class assignments will count towards your final course grade at 5% each. If you miss three in-class assignments, you can earn no higher than a C for the in-class assignments. If you miss four in-class assignments you can earn no higher than a D for the in-class assignments. If you miss five or all six of the in class assignments you have earned an F for the in-class portion of your final grade.

Examinations:

Exams will examine your mastery of lecture material. The exams will be multiple choice and administered online during normal class periods, the last exam will be administered during the final exam period as scheduled. No make-up examinations will be given for the lecture exams. Your

average grade on the other exams will be used for one missed lecture exam when calculating final grades. A second missed exam will result in course failure.

Course Evaluation:

Lecture exams 4@ 20%	80%
In-class assignments (best 4 of 6)	20%

Mid-Term Grades will be calculated in mid-October, they are due October 9th. Midterm grades will be based on 2 exams plus any completed in-class assignments and will represent ~50% of the final grade.

Peer Tutoring/Teaching Assistants:

Regular class attendance is the easiest way to do well in the course. You are encouraged to be proactive in getting academic assistance from me and peer tutors (contact the Academic Support Services where Associate Dean Susan Lantz will pair your with an EES tutor or talk to me directly).

Course Objectives:

The Earth is a dynamic planet with four interacting components: the hydrosphere (ground and surface water, clouds and ice), atmosphere (air), geosphere (earth), and biosphere (flora and fauna). These components influence each other in a variety of ways creating the environment in which we live. The Earth is ~4.54 Ga (billion years old; 4,540,000,000 yrs) and continues to evolve through time. Earth's systems are constantly changing at rates from microseconds to hundreds of millions of years. Processes shaping the Earth and impacting your 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 7,358,745,621 at 12:12 PM EST August 10, 2015 when I prepared this syllabus. Global population is projected to reach more than 9.3 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.

Academic Honesty:

It is the duty and obligation of students to meet and uphold the highest principles and values of personal, moral and ethical conduct. As partners in our educational community, both students and faculty share the responsibility for promoting and helping to ensure an environment of academic integrity. As such, each student is expected to complete all academic course work in accordance to the standards set forth by the faculty and in compliance with the University's Code of Conduct.

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, Williams Hall, Suite 301 (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. . For more information, I encourage you to visit the web site at:
http://www.lehigh.edu/%7Einacsup/disabilities/

The Principles of Our Equitable Community:

Lehigh University endorses The Principles of Our Equitable Community [http://www.lehigh.edu/~inprv/initiatives/PrinciplesEquity_Sheet_v2_032212.pdf]. We expect each member of this class to acknowledge and practice these Principles. Respect for each other and for differing viewpoints is a vital component of the learning environment inside and outside the classroom.

Course outline:

UNIT 1 EARTH MINERALS		CHAPTERS IN H&T
Week 1		
8/24	Course introduction--Earth systems	Chap. 1
8/26	*UNIT 1: EARTH MATERIALS AND TIME*	
	Chemistry-Minerals	Chap. 2
8/30	Last day to add without permission	
Week 2		
8/31	Earth materials: Magmatism and igneous rocks	Chaps. 3&8
9/2	Earth materials: Sediments and sedimentary rocks	
9/4	Last Day to Add/Drop w/o W	
Week 3		
9/7	Earth materials: Metamorphic rocks/Earth resources	Chap. 5
9/9	Geologic time	Chap. 4
9/11	Last day to select or cancel Pass/Fail option	
Week 4		
9/14	**Web Exam 1 (6 lectures, 5.5 chapters), No class**	
9/16	*UNIT 2: INTERNAL PROCESSES*	
	Plate Tectonics	Chap. 6
Week 5		
9/21	Earthquakes and the Earth's interior	Chap. 7
9/23	Volcanoes and Igneous activity	Chap. 8
Week 6		
9/28	Mountain building and Rock deformation	Chap. 9
9/30	*UNIT 3: SURFACE PROCESSES*	
	Weathering and Soil Development	Chap. 10
Week 7		
10/5	Mass Wasting	
10/7	**Web Exam 2 (6 lectures, 5 chapters), No class**	
Week 8		
10/12	No class Pacing Break	
10/14	Streams and Landscape Evolution	Chaps.11
Week 9		
10/19	Groundwater & Water Resources	Chap. 12

10/21	Glaciers and their deposits	Chap. 13
Week 10		
10/26	Deserts and Wind	Chap 14
10/28	*UNIT 4 THE OCEANS*	
	Ocean Basins	Chap 15
Week 11		
	I will be away at a conference October 30-November 4, 2015	
	Take home quiz due by Friday November 6, 2015	
11/2	No class	
11/4	No class	
Week 12 Spring 2012 registration		
11/9	Coastal Processes	Chap 16
11/10	Last day to drop with a W	
11/11	**Web Exam 3 (6 lectures, 6 chapters), No Class**	
Week 13 Spring 2012 registration		
11/16	*UNIT 5 THE ATMOSPHERE: EVOLUTION AND COMPOSITION*	
	Atmosphere	Chap. 17
11/18	Energy Balance in the Atmosphere	Chap. 18
Week 14		
11/23	Moisture and Clouds	Chap. 19
11/25	No Class Thanksgiving Break	
Week 15		
11/30	Severe Weather	
12/2	Climate and Climate Change	Chaps. 20&21
12/4	Last day to drop with WP/WF	

12/8-16 Web Exam 4 (5 lectures, 6 chapters), Scheduled during the final period.

I will be away at a conference December 13-20, 2015