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:

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

Week 1
8/24 Course introduction--Earth systems
8/26 UNIT 1: EARTH MATERIALS AND TIME
Chemistry-Minerals
8/30 Last day to add without permission

Week 2
8/31 Earth materials: Magmatism and igneous rocks
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
9/9 Geologic time
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

Week 5
9/21 Earthquakes and the Earth's interior
9/23 Volcanoes and Igneous activity

Week 6
9/28 Mountain building and Rock deformation
9/30 UNIT 3: SURFACE PROCESSES
Weathering and Soil Development

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

Week 9
10/19 Groundwater & Water Resources
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