

# Earth System Science I (ES 104) Syllabus—Fall 2009

Western Oregon University      Natural Science Building, Room 101  
Mon/Wed 3:00-4:20, or Tu/Thur 11:00 to 12:20

Instructor: Karen Brown  
Phone: (503) 838-8265

Office: Natural Science 213

Office Hours: Monday and Thursday 8:00 to 9:00 AM,  
Tuesday 8:00 to 11:00 AM, or by appointment

[www.wou.edu/~brownk](http://www.wou.edu/~brownk)  
Email: [brownk@wou.edu](mailto:brownk@wou.edu)

Check website for notes, extra credit opportunities, answers, etc.  
When sending email, please use your class **as the subject**: i.e.  
"ES 104 Lab, Friday 10 AM"

**Goal:** Understand the character and formation of the Solar System; become familiar with the processes of the interior of Planet Earth, including plate tectonics, earthquakes and volcanism; and investigate the properties of Earth materials.

**Textbook:** Earth Science 12<sup>th</sup> Ed., by Edward J. Tarbuck and Frederick K. Lutgens, 2008, Prentice Hall, Pearson Education, New Jersey, ISBN 978-0-13-602007-3. (Recent older editions are acceptable: it is your responsibility to read the appropriate pages and do the correct review questions. There are hyperlinks to review questions in the online copy of this syllabus.)

**Grading:** The following chart contains the points required for grades in this class

Points	Percent	Letter grade	
400-360	100-90%	A	Plus and minus
359-320	89.9-80%	B	grades may be
319-280	79.9-70%	C	assigned at the
279-240	69.9-60%	D	instructor's
Less than 240	Less than 60%	F	discretion

The points are distributed as follows:

Midterm exam	75 points	October 21/22
Final exam	125 points	Dec 7: 2 PM/ Dec 8: 10:00 AM
In-class activities	25 points total	Cannot be made up for any reason
Homework	75 points total	Due as indicated on assignments
Lab	100 points	Percent from lab instructor*

**\*YOU MUST PASS THE LABORATORY PORTION OF THIS COURSE WITH AT LEAST 60% TO PASS THIS CLASS!!**

## Assessments:

**Exams:** 200 points. The exams will have a combination of question types: some multiple choice/matching, some true-or-false, some fill-in, some diagram identification or completion, and some short paragraph responses. You will need a scantron answer form for each exam. If you have an emergency situation on exam day, please have some written verification of your emergency, or use the proper University channels to communicate. If you have a previously-known personal conflict, please contact me ahead of time to make arrangements. Early finals are generally not allowed. Requests for early final exams must be approved by the Office of Student Affairs, or the Dean of Arts and Sciences, if Student Affairs is unable to accommodate you.

In-class activities: 25 points. Throughout the term, there will be a number of 'in-class activities'. By the title of these, they are completed *in class*. I do not allow make-ups of ones you miss, but offer more than is necessary to gain the total points for these. They will be worth 2 points each.

Homework Assignments: 75 points. Periodically there will be homework assignments handed out in class. You must do the homework on the sheets you receive in class. If you are absent, they can be obtained at the next class, or in my office. In exceptional cases, I can send one to you by email, by your request. Photocopies of these will not be acceptable, so don't copy what another student got in class. Usually you will have 10 days to complete these homework assignments, from material presented in lecture, textbook reading, or light web research. These must be turned in on time to receive full credit. They will be worth 15 points each.

Lab: 100 points. Your lab instructor will give me your percentage score in lab at the end of the term. Lab is 25% of your overall Earth Science grade; however, you must attain a passing score in lab to pass this class. Attendance in lab is extremely important. Be sure to get the lab manual from the WOU bookstore and bring it on the first day of lab, with the pre-lab activity for Lab 1 completed.

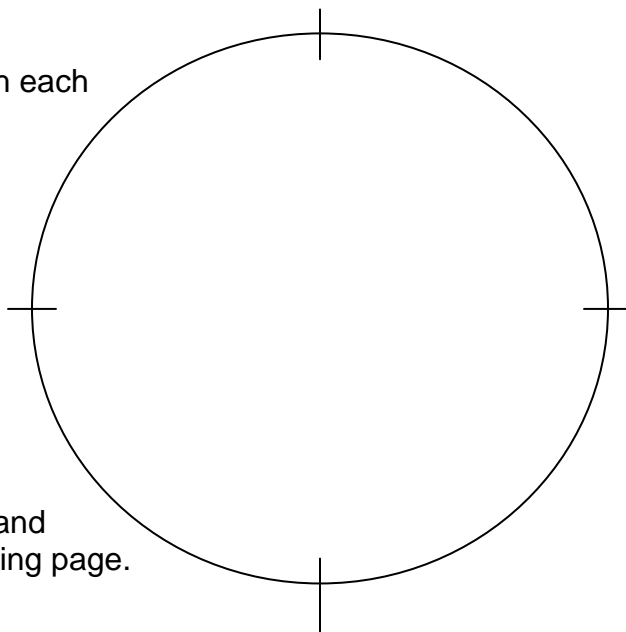
If you are having problems attending class, contact me as soon as practicable. If you know ahead of time that you will not be in class for an exam, contact me before the exam to make some arrangements. If you miss an exam without prior notice, please have some written evidence of your emergency situation, or use the **Office of Student Affairs** to communicate. I am understanding, but need verification of each case.

If you find yourself unable to complete this class, due to personal circumstances, you may request a grade report of 'incomplete'. You must be passing when you request this; you must go through **Office of Student Affairs** to verify your situation; and you must sign a plan of completion with me. See page 23 of the WOU 2009-10 Catalog for details.

Check my web site as a resource for classes: <http://www.wou.edu/~brownk> I will post lecture slides, answers to in-class activities, homework, review questions, midterm key, etc. for your use. In addition, the online syllabus has hyperlinks to scanned copies of the review questions from the 12<sup>th</sup> edition of the textbook, so you have access to them. You will not receive full credit for late homework assignments.

Use this circle as a pie chart to visualize how much each assessment worth toward your final grade:

Total of pie chart=400 points  
Exams=200 points  
Lab=100 points  
In-class activities=25 points  
Homework assignments=75 points



A list of reading and suggested review questions, and tentative schedule of lecture topics is on the following page.

## Tentative Schedule

Date	Topic	Chapter	Pages	Suggested Review Questions
28-29 Sept	Introduction To Earth Science 104	1	1-9, 12-15, 22-25	<a href="#">Ch 1: 1, 2, 4, 7</a>
Sept 30-1 Oct	Earth's place in the cosmos, internal structure	1	9-12, 15-21, Box 1.1 on 4-5	<a href="#">Ch 1: 9, 10, 13, 16, 6</a>
	History Of Astronomy	21	598-605	<a href="#">Ch 21: 2-4, 8, 11</a>
5-6 Oct	Celestial Motion, Earth-Moon System	21, 22	605-620, 629-632	<a href="#">Ch 21: 14-20</a> ; <a href="#">Ch 22: 4-6</a>
7-8 Oct	Planets of our Solar System	22	624-629, 632-643	<a href="#">Ch 22: 1, 2, 7, 8, 12, 14-16, 19</a>
12-13 Oct	Minor member of Solar System, Light, Telescopes	22, 23	643-649, 652-665	<a href="#">Ch 22: 20-25</a> ; <a href="#">Ch 23: 1, 2, 7, 9, 11</a>
14-15 Oct	Sun, Stars	23, 24	665-672, 674-683	<a href="#">Ch 23: 18-24</a> ; <a href="#">Ch 24: 1, 2, 5-7</a>
19-20 Oct	Stellar evolution, Galaxies	24	684-697	<a href="#">Ch 24: 15, 17, 19, 21, 22</a>
21-22 Oct	<b>Exam</b>	<b>BRING SCANTRON</b>		
Date	Topic	Chapter	Pages	Suggested Review Questions
26-27 Oct	Continental Drift, Plate Tectonics, Plate Divergence	7	186-199	<a href="#">Ch 7: 1, 2, 4, 5, 7, 8</a>
28-29 Oct	Plate Motion: Other Types, Evidence, Mechanisms	7	199-214	<a href="#">Ch 7: 9-14, 18, 19, 21</a>
2-3 Nov	Earthquakes, Seismology	8	218-231	<a href="#">Ch 8: 1, 2, 4, 8, 10, 12</a>
4-5 Nov	Earthquake Effects	8	231-243	<a href="#">Ch 8: 11, 14-19, 22</a>
9-10 Nov	Minerals	2	28-47	<a href="#">Ch 2: 1, 2, 4, 8, 9, 11-14</a>
11-12 Nov	Rock Cycle, Igneous Rocks, Mineral Resources	3	50-62, 76-78	<a href="#">Ch 3: 1-5, 17-18</a>
16-17 Nov	Volcanoes	9	246-265	<a href="#">Ch 9: 1-5, 8-10, 12</a>
18-19 Nov	Intrusive Processes, Plate Tectonics and Magma	9	266-278	<a href="#">Ch 9: 19-24</a>
23-24 Nov	Video: Birth of a Theory			
Nov30-1 Dec	Rock Deformation	10	282-292	<a href="#">Ch 10: 1-3, 6-8, 10, 12, 13</a>
2-3 Dec	Mountain Building	10	292-304	<a href="#">Ch 10: 14-15, 18, 20</a>
8-Dec	<b>Mon/Wed Class: Final Exam--2 PM</b>	<b>BRING SCANTRON</b>		
9-Dec	<b>Tu/Thur Class: Final Exam--10 AM</b>			

Below is some collected information from Western Oregon University Catalog, 2009-2010. These are included here because they are important to your success in this class. Each excerpt is noted with the page on which it appears in the catalog.

### Fall term Calendar

<b>Classes begin</b>	Monday, September 28
Fee payment & add/drop begin	Monday, September 28
Last day to pay fees without penalty	Friday, September 25
Last day to add courses, change grade options, elect graduate/undergraduate credit or pay fees	Friday, October 9
Last day to drop courses	Friday, November 6
Registration for next term	Monday, Nov. 16 - Friday, Nov. 20
Thanksgiving Day Holidays	Thursday-Friday, November 26-27
Final examination week	Monday, Dec. 7 - Friday, Dec. 11
Fall term ends	Friday, December 11

(inside front cover)

### University Mission Statement

Western Oregon University is a comprehensive university that creates personalized learning opportunities, supports the advancement of knowledge for the public good and maximizes individual and professional development. Our environment is open to the exchange of ideas, where discovery, creativity and critical thinking flourish, and students succeed. (p. 3)

#### College of Liberal Arts and Sciences

Dean Stephen Scheck

##### Mission Statement

The College of Liberal Arts and Sciences provides the central learning experience for all undergraduate students at Western Oregon University. The faculty are committed to engaging students in academic discovery and intellectual growth via the core curriculum, major and minor baccalaureate curricula, and mastery in select graduate programs.

##### Program Objectives

1. Engage students in scholarly pursuits that benefit their preparation for life-long learning and societal engagement.
2. Provide an environment where students may develop disciplinary competencies necessary for their chosen career fields.
3. Provide opportunities for faculty-student mentoring and out-of-classroom learning opportunities.

For more information, see the Web site at:

[www.wou.edu/las](http://www.wou.edu/las). (p. 35)

#### Natural Sciences and Mathematics

##### Division of the College of LAS

Division Chair Steve Taylor

The Natural Sciences and Mathematics Division is responsible for majors and minors in biology, chemistry, Earth science, integrated science, mathematics and natural science.

##### Mission

To offer quality liberal arts education in Biology, Chemistry, Earth Science, Mathematics, Physics and Pre-Professional Studies. Our students have the opportunity to acquire and assimilate mathematical and scientific knowledge, that they may broaden and refine their understanding of the ever-changing world around them, both while at Western Oregon University and throughout their lives.

##### Program Objectives

1. To help students internalize and apply both the scientific method and major scientific and mathematical concepts and principles.
2. To enhance students' reasoning and problem solving skills.
3. To improve students' individual and collaborative skills in preparation for the global scientific and mathematical challenges of the 21st century. More detailed program information, including program admission requirements can be obtained by contacting the division at: 503-838-8206, or on the Web at

[www.wou.edu/las/natsci\\_math/nsmdiv.html](http://www.wou.edu/las/natsci_math/nsmdiv.html).

(p. 36)

## Institutional aspirations for learning

Students at WOU will be challenged to achieve their highest potential through a rigorous and stimulating curriculum. Between 2004 and 2005, a set of educational goals called Institutional Aspirations for Learning were collaboratively developed by our faculty after focused discussions about the fundamental aims of liberal education in the 21<sup>st</sup> century. These aspirations constitute the core competencies, skills, experiences and values credited to, and expected of, WOU's educational process and its graduates. We believe that these aspirations are the basic building blocks of a high-quality education as well as the foundations for productive careers, life long development and informed citizenship on a local, national and global level.

1. Students will develop more refined critical thinking skills, including advanced analytical, logical and quantitative reasoning abilities as well as excellent problem-solving skills.
2. Students will develop effective communicative abilities, including listening, observing, speaking, writing and dialoguing.
3. Students will become active readers with an enhanced ability to carefully, closely and thoughtfully read a range of texts.
4. Students will acquire field or discipline specific knowledge and they will understand disciplinary modes of intellectual inquiry.
5. Students will develop an interdisciplinary and integrative perspective as they recognize, explore, appreciate and engage the interconnections between disciplines.
6. Students will develop advanced research abilities and they will demonstrate improvements in their information and media literacy.
7. Students will learn how to use appropriate technologies.
8. Students will acquire and demonstrate competencies, skills, attributes and values necessary for successful participation in a diverse, pluralistic and increasingly interdependent world.
9. Students will be able to work effectively in teams.
10. Students will strive to be well-balanced persons capable of making thoughtful and healthy choices.
11. Students will be able to apply theory in relevant, appropriate and reflective ways. (p. 5)

## Disability Services

Director Malissa Larson

The Office of Disability Services facilitates appropriate accommodations on campus for students and visitors with disabilities. Services provided by the office help ensure that students with disabilities are able to participate fully in all of WOU's programs and activities. The needs of each student who has a disability are assessed on an individual basis so that each receives the most appropriate accommodations and/or support. The following list of services provided by the Office of Disability Services are the most commonly requested:

- Accessibility assistance: wheelchair accessibility to buildings and campus grounds, communication equipment (FM systems, audio-looped rooms, TTYs, closed caption decoders, amplified phones), CC-TV, Braille, scanner, voice output computer access and other technical equipment
- Accessibility aides: note takers, readers, transcribers, classroom assistants, exam proctors
- Advising: academic, career, personal/social
- Advocacy: for appropriate accommodations, alternative testing, preferred accessibility aid
- Communication aides: Sign language interpreters who use student's preferred signed communication mode (from ASL to MCE), and oral interpreters are provided upon request for classes, school sponsored activities, and meetings with faculty and staff
- Empowerment: Through networking groups, workshops and interaction with the office staff, students learn of their rights and how to obtain services they need.
- Leisure and social activities: Accessibility assistance and aids are provided to encourage and support the students' full participation in all parts of campus life.
- On-campus housing: accessible to deaf, hard of hearing, blind students and students using wheelchairs or other assistive mobility aids
- Orientation: to the campus and services provided by the Office of Disability Services as well as general university services available

Please contact the Office of Disability Services for more information at 503-838-8250 V/TTY or e-mail [ods@wou.edu](mailto:ods@wou.edu). (p. 28)

## Academic Advising and Learning Center

Director Karen Sullivan-Vance

### **Academic Advising Center**

Academic advising at WOU is a developmental process designed to help students define their life and career values and goals in relation to their academic plan. Both the student and adviser have a shared responsibility in the ongoing dialogue that helps students maximize their educational experience at WOU. All undergraduate students are required to meet with their academic adviser at least once a term until a degree plan is filed with the Registrar's Office. Students are encouraged to meet with their adviser when they have questions about their educational goals. Students have access to faculty advisers in their major and minor areas of study. In addition, the Academic Advising and Learning Center's professional advisers can advise students about requirements, along with pre-education and undecided students.

The Academic Advising and Learning Center works with:

- Students to identify their life and career goals in relation to possible academic programs
- Undecided students who are exploring different majors
- Students transferring into WOU from another institution
- Students on academic warning, probation or suspension
- Academic requirements for graduation, including the Liberal Arts Core Curriculum (LACC)

For more information, call 503-838-8428 V/TTY, e-mail [advising@wou.edu](mailto:advising@wou.edu) or go to the Web page [www.wou.edu/advising](http://www.wou.edu/advising).

### **Learning Center**

Academic skills, including study skills and time management, are essential for college success. The Learning Center helps students assess their current academic skills and develop new skills to help them become successful. Services are provided to WOU students at no charge.

Services at the Learning Center include:

- Peer tutoring in most academic subjects by appointment
- Drop-in math tutoring hours
- Tutor-assisted study groups
- Individual study skills assessment and assistance (time management, test taking, note taking, listening, textbook reading, etc.)
- Student computer lab

Tutoring assistance is offered in most academic subjects by peer tutors who have been recommended by faculty. The tutor's goal is to help students improve their knowledge and develop better study habits. Students must be currently enrolled in the requested class at WOU for tutoring. For more information, call 503-838-8501, (503-838-8428 TTY), or go to the web page [www.wou.edu/learning](http://www.wou.edu/learning). (p. 37)

### **Standards of Conduct**

The following list of prohibited forms of conduct is not all inclusive since it is not possible to list all potential violations.

1. Academic Dishonesty, which includes but is not limited to:
  - a. *Cheating* - intentional use, or attempted use of artifice, deception, fraud, and/or misrepresentation of one's academic work;
  - b. *Fabrication* - unauthorized falsification and/or invention of any information or citation in any academic exercise;
  - c. *Facilitating dishonesty* - helping or attempting to help another person commit an act of academic dishonesty. This includes students who substitute for other persons in examinations or represent as their own papers, reports, or any other academic work of others;
  - d. *Plagiarism* - representing without giving credit the words, data, or ideas of another person as one's own work in any academic exercise. This includes submitting, in whole or in part, prewritten term papers of another or the research of another, including but not limited to the product of commercial vendors who sell or distribute such materials, and the appropriation and/or use of electronic data of another person or persons as one's own, or using such data without giving proper credit for it; or
  - e. *Any use or attempted use of electronic devices* in gaining an illegal advantage in academic work in which the use of these devices is prohibited, and such devices include but are not limited to cell phones, PDAs, laptops, programmable calculators, removable disk drives, etc. (p. 28-29)

## Statement on discrimination, including sexual harassment

Western Oregon University is committed to cultivating an educational and work environment in which all individuals are treated with respect and dignity. Each individual has the right to learn and work in an atmosphere that promotes equal educational and employment opportunities and prohibits discriminatory practices, including harassment. Western Oregon University expects relationships across campus will be free from bias, prejudice and harassment.

This policy statement is intended to reaffirm Western Oregon University's prohibition against discrimination and harassment, clarify types of prohibited conduct, and provide an effective complaint procedure to individuals who believe they have observed or have been subject to prohibited conduct.

### *Discrimination*

Discrimination, for the purposes of this policy, is defined as any act or practice, in form or operation, whether intended or unintended, that unreasonably differentiates among persons on the basis of race, color, religion, national origin, age, sex, marital status, sexual orientation, veteran status or disability or any other status protected under the law.

### *Harassment*

Harassment, for the purposes of this policy, is defined as conduct that creates an intimidating, hostile, or degrading environment that would interfere with the work or academic performance of a reasonable person of the complainant's protected status.

### *Sexual Harassment*

Sexual Harassment, whether or not it be by direct physical attack, as defined below. Sexual harassment includes, but is not limited to, sexual advances, requests or suggestions to engage in sexual conduct, and other physical and expressive behavior of a sexual nature when:

- Submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment, grade, or used as a basis for any employment or academic decision; or
- Such conduct is unwelcome and has the purpose or effect of unreasonably interfering with an individual's work or academic performance or creates an intimidating, hostile or offensive work or academic environment..

Additional information is available at

[www.wou.edu/sexualharassment](http://www.wou.edu/sexualharassment).

To request a complete hard copy of the discrimination and harassment policy and complaint procedure; to discuss a sexual harassment, harassment or discrimination concern; or to file a sexual harassment, harassment or discrimination complaint, contact udy Vanderburg at 503-838-8131 or [vanderj@wou.edu](mailto:vanderj@wou.edu).

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