OSU Extended Campus – Syllabus
GEO 380 EARTHQUAKE HAZARDS IN THE PACIFIC NORTHWEST (3 CREDITS)

Course Catalog Description: Earthquake hazards in the Northwest; responses to reducing earthquake risk at state, local, and personal levels.

Baccalaureate Core: Successful completion of this course fulfills OSU’s Baccalaureate Core course requirements in the Synthesis category under Science, Technology, and Society.

Prerequisites: There are no prerequisites for this course.


Canvas: This course is entirely online and accessed by logging in to OSU’s Canvas system: https://oregonstate.instructure.com/courses. The course will only appear in Canvas to those who have registered for it. All course materials (lectures, assignments, exams) are distributed online via the Canvas system.

For technical assistance, go to http://ecampus.oregonstate.edu/services/technical-help.htm or call 1-800-667-1465.

Although every effort has been made to ensure that course materials are compatible with a variety of hardware and platforms, internet access and Canvas compatibility is the responsibility of the student. Extensions for missed deadlines due to personal computer or internet access issues will not be granted. If your computer or internet connection fails, simply go to a campus computer lab or your local library to access the course in Canvas.

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Outline of Topics Covered:
Week 1: Introduction, Geologic Time, and Plate Tectonics
Week 2: Earthquake Basics
Week 3: Cascadia Subduction Zone
Week 4: Juan de Fuca Plate
Week 5: Crustal Faults, Mid-Term Exam
Week 6: Earthquake Forecasting
Week 7: Shaking, Landslides, Liquefaction, and Tsunami
Week 8: Earthquake Insurance
Week 9: Earthquake Engineering and Federal Government Involvement
Learning Outcomes: Upon completion of this course, students will be able to:

- Locate major physiographic provinces and tectonic boundaries in the Pacific Northwest
- Recognize that scientific data caused a paradigm shift in society’s perception of natural hazards in the Pacific Northwest
- Describe the earthquake cycle
- Analyze evidence for past earthquakes from geologic data and strain accumulation leading up to earthquakes
- Describe the major effects of earthquakes for ground motion and tsunami generation and the effects of earthquake shaking on the built environment
- Compare and contrast how Local, State, and National emergency response organizations have shaped policy related to earthquake hazards
- Justify societal concerns about hazards using historical analyses of news reports and other sources
- Summarize the main historical, economic, scientific and technological information used to create earthquake coverage by the Insurance Industry
- List the major earthquake-related variables used by engineers to address societal needs for safe dwellings, workspaces, and transportation corridors
- Interpret available data for earthquake hazards to develop a mitigation plan
- Summarize case studies where individuals and communities have developed and participated in hazard mitigation strategies
- Describe the linkage between societal impacts arising from earthquake disasters and response by the Federal Government in the form of earthquake preparedness, mitigation, and legislation
- Synthesize concepts developed in the course to write a term paper that includes critical evaluation of information related to earthquake awareness

Critical thinking skills will be developed through in-class exercises and discussion and through the writing of a 5-page paper on some aspect of earthquakes.

Course Organization: Students in GEO 380 will work through 10 one-week lessons. Each lesson includes reading two or three lectures and assigned portions of the text and discussing assigned questions on the Canvas discussion board. Students will submit a term paper, take a midterm exam and a comprehensive final exam (during finals week) on Canvas. Exams are timed and only available for a limited time through Canvas (see course schedule). Permission to take an exam outside of the scheduled window must be arranged well in advance.

Important: For the purposes of discussion questions and other assignment, each week will end on Friday at 5 pm (Pacific Time). All work must be submitted through Canvas by 5 pm Pacific
time on the Friday of the week the work is assigned (see course schedule). You will have the weekends to work ahead on the following week’s work if you desire.

**See the Course Schedule for each term posted in the Course Information folder for all specific deadlines. All deadlines are exact and late work is not accepted.** For discussion board participation, no points will be awarded if not completed within the weekly time window for completion; in other words it is not possible to “make-up” discussion board participation. For exams, permission for an extension must be arranged in advance (i.e., before the due date) with the instructor and will only be granted in cases where circumstances beyond the student’s control prevent timely completion of the assignment. Final grades are based on the work completed at the end of term. Students should not expect an incomplete if the course is not completed by the end of the term.

**Course Requirements and Grading:** There are weekly discussion questions (worth ten points per week for a total of 100 points), and three assignments; a term paper (4-5 pages on an earthquake-related topic you find interesting to be chosen in consultation with the instructor), a midterm exam, and a final exam (worth 100 points each). These are weighted according to the following table:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Points</th>
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<tbody>
<tr>
<td>Weekly Discussion Questions</td>
<td>100</td>
</tr>
<tr>
<td>Term Paper</td>
<td>100</td>
</tr>
<tr>
<td>Mid-Term Exam</td>
<td>100</td>
</tr>
<tr>
<td>Final Exam</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total Points</strong></td>
<td><strong>400</strong></td>
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</tbody>
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**Final Course Grade Determination:**

In past terms the only students to fail this course were those who did not complete all the course requirements. **The easiest way to fail a class is to not do all the work.** This does not make this course easy! Instead, everyone who puts the proper effort into this course can earn an acceptable grade. This means turning in all assignments, taking both exams, putting the necessary time in to prepare for the exams, participating in all the discussion boards, and budgeting the proper time to write the term paper. More information on what you need to do to complete each of these course requirements is found in the following sections.

**Discussion Board and Class Participation:** Active participation in this course is an essential part of your grade, and is accomplished through the discussion board in Canvas. Each week’s lesson includes several questions for discussion on the discussion board. You can earn up to 10 points per discussion board by posting an original contribution, asking insightful questions, or responding to your classmates ideas on the week’s topic.

The questions should be provocative enough that discussion occurs naturally. Your grade for each discussion is based on the degree to which your posts contribute to the class discussion. Although the discussion board is informal, please use proper spelling, grammar, and punctuation so that everyone can understand your ideas. Remember to always be respectful of the opinions and viewpoints of others.
**Term Paper:** In the course of the term you will write a short paper on a specific topic related to earthquakes of your choice. The purpose of this assignment is to explore in depth a topic that is of some meaning or interest to you. The number of potential topics is nearly infinite; you are not limited to topics introduced in the lectures. **Papers must demonstrate an in-depth knowledge of your chosen topic beyond what is provided in the course lectures.** While some may perceive a paper requirement as onerous, writing is an essential skill in any discipline. Furthermore, the term paper is weighted the same as an exam, and thus is an opportunity for individuals with a poor exam performance to improve their course grade.

The term paper will be based in Internet resources, see Appendix D of text to identify Internet sites to get started). Minimum 5 pages, including illustrations (write concisely).

Suggested term paper topics, aside from those from Internet: retrofit plan for your own home or business, earthquake disaster plan for your house and neighborhood, tsunami escape plan, etc.

Please select your term paper topic by the end of Week 5 (February 9). Send me a title and a short description of what you plan to write about and the resources available to you, and I will respond quickly.

The term paper is due by the end of Week 8 (March 2). This is a firm date.

**Exams:** Exams are mostly multiple-choice, but may also include matching and short essay. Exams have time limits.

**Midterm Exam:** The midterm exam will be open for five days and will cover material through Week 5 (February 9). The exam will be open from noon on Friday February 9 to 8PM on Tuesday February 13. After the exam is opened, you will have 70 minutes to complete it.

**Final Exam:** The exam will be open for fours days during finals week beginning on Saturday March 17 and ending at 8PM on Wednesday March 21. It will cover all aspects of the course with an emphasis on the last 5 weeks. You will have 120 minutes to take the exam.

**Feedback on Exams:** Once all of the exams are graded, feedback will be made available through Canvas. You can see how you did on the exam and what you missed by clicking on your score in the grade book. Please keep in mind the short answer questions have to be reviewed by the instructor to be scored, and therefore it will take a little extra time for the results on these questions to be posted.

**General Discussion Board:** Please post questions about the course, deadlines, content, etc. to the general discussion board. I check the general discussion board on a near-daily basis during the term and will reply by posting answers to your questions. This procedure allows the entire class to benefit from the questions and answers provided- chances are if you have a question others have the same question.
Students with Disabilities: Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval please contact DAS immediately at 541-737-4098 or at http://ds.oregonstate.edu. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.

Academic Conduct: Your conduct in this class and in your interactions with your fellow students must promote a respectful learning environment. You will submit your own work in all your assignments and communications. All assignments in this course are individual assessments. Academic dishonesty, which includes aiding or receiving aid from other students on exams, is not tolerated. Academic dishonesty also includes plagiarizing the work of others and passing it off as your own on, including on the assignments, term paper, or in the discussion board. Plagiarizing will not be tolerated. The first offense will result in an F on the assignment. The second offense will result in an F for the course and referral to the student’s academic dean for disciplinary action. Link to OSU Statement of Expectations for Student Conduct: http://studentlife.oregonstate.edu/sites/studentlife.oregonstate.edu/files/code_of_student_conduct.pdf

Diversity Statement: The College of Earth, Ocean, and Atmospheric Sciences strives to create an affirming climate for all students including underrepresented and marginalized individuals and groups. Diversity encompasses differences in age, color, ethnicity, national origin, gender, physical or mental ability, religion, socioeconomic background, veteran status, sexual orientation, and marginalized groups. We believe diversity is the synergy, connection, acceptance, and mutual learning fostered by the interaction of different human characteristics.

Religious Holiday Statement: Oregon State University strives to respect all religious practices. If you have religious holidays that are in conflict with any of the requirements of this class, please see me immediately so that we can make alternative arrangements.

Course Evaluation: We encourage you to engage in the course evaluation process each term – online, of course. The evaluation form will be available towards the end of each term, and you will be sent instructions by Ecampus. You will login to “Student Online Services” to respond to the online questionnaire. The results on the form are anonymous and are not tabulated until after grades are posted.