Date Submitted: 01/17/19 4:57 pm

Viewing: G 209 : Earthquakes

Last approved: 03/19/15 12:56 pm

Last edit: 02/02/19 7:09 am

Changes proposed by: eriks.puris

Catalog Pages referencing this course	General Education/Discipline Studies Geology

General Information

Submitter:	User ID: **eriks.puris** ~~stimmins~~	Phone: **x7627** ~~7813~~
Course Prefix	Geology (G)	
Course Number	209	
Course Type	Lower Division Collegiate	
Implementation Term	**Fall 2019** ~~201502~~	
Course Title	Earthquakes	
Transcript Title	Earthquakes	

In Workflow

1. **G SAC Chair**
2. **G SAC Administrative Liaison**
3. **Curriculum Office-Curriculum**
4. **Curriculum Committee Chair**
5. **Dean of Instruction - Cascade**
6. Dean of Academic Affairs
7. VP Academic Affairs
8. Ready for Banner
9. Banner

Approval Path

1. 01/18/19 12:56 pm eriks.puris: Recommended for G SAC Chair
2. 01/18/19 1:11 pm alyson.lighthart: Recommended for G SAC Administrative Liaison
3. 01/27/19 3:02 pm sally.earll: Recommended for Curriculum Office-Curriculum
4. 02/19/19 6:17 am ann.cary: Recommended for Curriculum Committee Chair

History

1. Aug 12, 2014 by jmorfin
2. Mar 19, 2015 by stimmins

Contact Hours per Quarter	**Lecture:** Meets **3** hours per week for **10** weeks. **Total** student academic engagement hours per quarter: **90** **Lec/Lab:** Meets **0** hours per week for **10** weeks. **Total** student academic engagement hours per quarter: **0** **Lab:** Meets **0** hours per week for **10** weeks. **Total** student academic engagement hours per quarter: **0** **Total** student academic engagement hours for course: **90**
Credits	3
Please indicate the basis for creating this experimental course:	
Justification for change:	Updating math, reading and writing prerequisites.
Does this course require a special additional fee set up through the bursar's office?	No
Special Fee	
Course Is Repeatable	No
If this course is equivalent to other currently active course(s), please indicate	
If this course is mutually exclusive with other currently active course(s), please indicate	
If the SAC intends to allow this course to be co-scheduled with other currently active course(s), please indicate	
Grading Option(s)	Audit Letter Grade Pass/No Pass
Default Grading Option	Letter Grade
Course Description	Covers the nature and origin of earthquakes, the characteristics of seismic waves, how earthquakes are measured, the hazards of **earthquakes,** ~~earthquakes~~ and the historical and geological record of earthquakes. Audit available.
Prerequisites	**(WR** ~~WR 115, RD~~ 115 and **RD 115)** ~~MTH 65~~ or **IRW 115 and (MTH 58 or MTH 65) or** equivalent **placement.** ~~placement test scores.~~
Pre/Concurrent Courses	
Corequisites	

General Education/Discipline Studies Designation

General Education Areas Satisfied	Mathematics, Science, Computer Science

Standard Prerequisites

Does this course need to opt-out of the standard prerequesites?	No

Cultural Literacy Designation

Does this course satisfy the Cultural Literacy Designation Criteria	No

Course Content and Outcome Guide (CCOG)

Addendum to Course Description

Earthquakes (G209) is a one-term introductory course in earthquakes/seismology, which is a branch of the science of geology. The student will develop an understanding of the causes, activity, effects, and hazards of earthquakes as well as an understanding of the various methods of measuring the size/energy of an earthquake. The course will use case studies of historical earthquakes to examine ways to minimize earthquake damage, with emphasis on earthquakes in the pacific northwest. This course can be used to partly fulfill graduation requirements for the Associate Degree, and has been approved for block transfer. The text and materials have been chosen by the faculty and the emphasis of the course will be the viewpoint of the author(s). This includes the geologic time scale and the evolution of the Earth. Regarding the teaching of basic geologic principles (such as geologic time and the theory of evolution), the Portland Community College Geology Department stands by the following statements about what is science.

1. Science is a fundamentally non-dogmatic and self-correcting investigatory process. A scientific theory is neither a guess, dogma, nor myth. The theories developed through scientific investigation are not decided in advance, but can be and often are modified and revised through observation and experimentation.
2. “Creation science,” also known as scientific creationism, is not considered a legitimate science, but a form of religious advocacy. This

Outcomes

Upon completion of ~~A student who successfully completes~~ this course **students** should be able to:

1. Use an understanding of rock mechanics, paleoseismology, and the elastic rebound theory to infer the probability that an area will be seismically active.
2. Analyze the development, scope, and limitations of plate tectonics and utilize plate tectonics to explain the Earth’s earthquake activity.
3. Access information related to seismology from a variety of sources, evaluate the quality of this information, and compare this information with current models of seismic **processes,** ~~processes~~ identifying areas of congruence and discrepancy.
4. Make field and **laboratory-based** ~~laboratory based~~ observations and measurements of earthquakes and landforms associated with earthquakes, use scientific reasoning to interpret these observations and measurements, and compare the results with current models of seismic processes identifying areas of congruence and discrepancy.
5. Use scientifically valid modes of inquiry, individually and collaboratively, to critically evaluate the hazards and risks posed by earthquakes both to themselves and society as a whole, evaluate the efficacy of possible ethically robust responses to these risks, and effectively communicate the results of this analysis to their peers.

Aspirational Goals

Course Activities and Design

The material in this course will be presented in a lecture/discussion format Other educationally sound methods may be employed such as guest lectures, field trips, research papers, and small group work.

Outcomes Assessment Strategies	At the beginning of the course, the instructor will detail the methods used to evaluate student progress and the criteria for assigning a course grade. The methods may include one or more of the following tools: examinations, quizzes, homework assignments, research papers, small group problem solving of questions arising from application of course concepts and concerns to actual experience, oral presentations, or maintenance of a personal work journal.
Course Content: Themes, Concepts, Issues and Skills	1. Describe what is meant by "earthquake". 2. Define the following terms: focus, epicenter, refraction, reflection. 3. Describe the different types of seismic waves. 4. Describe the relationship of earthquakes to plate tectonics. 5. Define the following terms: strain accumulation, creep, foreshock, main shock, aftershock, interplate earthquake, intraplate earthquake. 6. Describe how a seismograph works. 7. Locate an earthquake epicenter using travel-time curves and three seismic records. 8. Describe how earthquakes can be used to study the interior of the earth. 9. Locate underground faults and describe crustal structure using a seismic profile. 10. Classify the different types of faults that result from earthquakes. 11. Define the following terms: strike-slip, dip-slip, oblique-slip, hanging wall, foot wall. 12. Describe the landforms produced along faults.
Course reviewer comments	

Key: 3998