

**Clackamas Community College**  
Online Course/Outline Submission System

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**Section #1 General Course Information**

**Department:**Sciences

**Submitter**

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**Course Prefix and Number:**G - 202

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**# Credits:**4

**Contact hours**

Lecture (# of hours): 33

Lec/lab (# of hours):

Lab (# of hours): 33

Total course hours: 66

For each credit, the student will be expected to spend, on average, 3 hours per week in combination of in-class and out-of-class activity.

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**Course Title:**General Geology

**Course Description:**

For science majors. A lab course that explores surface features of the Earth and the systems that form those features. Systems/processes/hazards explored include beaches, rivers, mass wasting, glaciers, groundwater and deserts. Topographic/geologic maps are used to understand geologic features and local geology.

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**Type of Course:**Lower Division Collegiate

Is this class challengeable?

**Yes**

Can this course be repeated for credit in a degree?

**No**

Is general education certification being sought at this time?

**Yes**

**Check which General Education requirement:**

**✓ Science & Computer Science**

Is this course part of an AAS or related certificate of completion?

**No**

Are there prerequisites to this course?

**No**

Are there corequisites to this course?

**Yes**

**Co-reqs:**G-202L

Are there any requirements or recommendations for students taken this course?

**Yes**

**Recommendations:**Pass RD-090 or placement in RD-115; pass MTH-065 or placement in MTH-095

**Requirements:**None

Are there similar courses existing in other programs or disciplines at CCC?

**No**

Will this class use library resources?

**No**

Is there any other potential impact on another department?

**No**

Does this course belong on the Related Instruction list?

**No**

**GRADING METHOD:**

A-F or Pass/No Pass

**Audit:Yes**

When do you plan to offer this course?

✓ **Winter**

Is this course equivalent to another?

If yes, they must have the same description and outcomes.

**No**

Will this course appear in the college catalog?

**Yes**

Will this course appear in the schedule?

**Yes**

**Student Learning Outcomes:**

Upon successful completion of this course, students should be able to:

1. gather scientific data about surface features and apply scientific methods to explain how geological processes shape the Earth's surface, (SC1)
2. assess data gather from regions prone to mass wasting to evaluate methods used to protect these regions from landslide events and evaluate the effectiveness of these methods in protecting society, (SC3)
3. apply geological data gathered for a particular setting, assess the potential for a mass wasting (landslide) event and critically examine society's interaction/effect on geologically unstable regions; (SC2) (SC3)
4. apply and develop models of stream systems to gather data and discuss the impact society has on rivers with regards to water quality, ecosystems and flooding processes as well as surface features created by erosion/deposition; (SC1) (SC2) (SC3)
5. critically assess data on regions prone to flooding and the methods (and effectiveness of those methods) employed to protect property in these regions, (SC3)
6. compile stream data using mathematical models/calculations and to determine flood recurrence intervals, (SC2)
7. analyze the geologic controls on ground water systems and critically evaluate how society is affected by or affects these systems, (SC2) (SC3)
8. assess limitations of water resources on earth and hypothesis possible responses to these limitations, (SC2)
9. observe desert systems, gather information on these systems and explain how surface processes associated with deserts create geological features found in these systems; (SC1)
10. explain the relationship air mass circulation cells on Earth and the formation of many deserts, (SC1)
11. research, gather information and clearly discuss the processes of desertification, and the impacts this process is having on many parts of the world and the world's population, (SC1)(SC3)(WR1)
12. gather information about glacial systems and observe features created by glacial carving and deposition, to explain how glaciers change the shape of the Earth's surface; (SC1)
13. investigate models of global climate change and explore how glaciers are being affected by this change, (SC1)
14. gather data and evidence for glacial flooding in the Pacific NW during the Pleistocene, (SC1)
15. assess data gathered in scientific studies on glacial retreat and the effects these changes are having on certain parts of society, (SC3)(WR1)
16. use topographic maps to describe a region with regards to the surface features present and evaluate the information to develop a hypothesis on the processes that formed these features, (SC2)
17. interpret geological maps to communicate potential geological hazards associated with the topography/geology in a region, (SC1)(SC2)
18. locate and report positions on a map through the use of longitude/latitude coordinates, UTM coordinates and the rectangular survey system; (SC2)
19. apply remote sensing images and techniques to evaluate which geologic surface processes have occurred in a region. (SC2)

**AAOT/ASOT GENERAL EDUCATION OUTCOMES  
COURSE OUTLINE MAPPING CHART**

**Mark outcomes addressed by the course:**

- Mark "C" if this course completely addresses the outcome. Students who successfully complete this course are likely to have attained this learning outcome.
- Mark "S" if this course substantially addresses the outcome. More than one course is required for the outcome to be completely addressed. Students who successfully complete all of the required courses are likely to have attained this learning outcome.
- Mark "P" if this course partially addresses the outcome. Students will have been exposed to the outcome as part of the class, but the class is not a primary means for attaining the outcome and assessment for general education purposes may not be necessary.

***As a result of completing the AAOT/ASOT general education requirements, students will be able to:***

**WR: Writing Outcomes**

- P**
1. Read actively, think critically, and write purposefully and capably for academic and, in some cases, professional audiences.
  2. Locate, evaluate, and ethically utilize information to communicate effectively.
  3. Demonstrate appropriate reasoning in response to complex issues.

**SP: Speech/Oral Communication Outcomes**

1. Engage in ethical communication processes that accomplish goals.
2. Respond to the needs of diverse audiences and contexts.
3. Build and manage relationships.

**MA: Mathematics Outcomes:**

1. Use appropriate mathematics to solve problems.
2. Recognize which mathematical concepts are applicable to a scenario, apply appropriate mathematics and technology in its analysis, and then accurately interpret, validate, and communicate the results.

**AL: Arts and Letters Outcomes**

1. Interpret and engage in the Arts & Letters, making use of the creative process to enrich the quality of life.
2. Critically analyze values and ethics within range of human experience and expression to engage more fully in local and global issues.

**SS: Social Science Outcomes**

1. Apply analytical skills to social phenomena in order to understand human behavior.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live.

**SC: Science or Computer Science Outcomes**

- S**
1. Gather, comprehend, and communicate scientific and technical information in order to explore ideas, models, and solutions and generate further questions.
- S**
2. Apply scientific and technical modes of inquiry, individually, and collaboratively, to critically examine the influence of scientific and technical knowledge on human society and the environment.

- S** 3. Assess the strengths and weaknesses of scientific studies and critically examine the influence of scientific and technical knowledge on human society and the environment.

**CL: Cultural Literacy Outcome**

1. Identify and analyze complex practices, values, and beliefs and the culturally and historically defined meanings of difference.

**Outcomes Assessment Strategies:**

✓ **General Examination**

✓ **Writing Assignments**

✓ **Multiple Choice Test**

✓ **Other Assessment Tools:** Practical lab exams and laboratory work

**Major Topic Outline:**

1. Mass Wasting:

- a. Types and controls of mass movement.
- b. Influence of water on mass wasting.
- c. Sediments and mass wasting.
- d. Recognizing mass wasting in process.
- e. Remediation techniques for mass wasting.
- f. The effects on society and the NW.

2. Deserts and Wind Activity:

- a. Types of deserts and how deserts form.
- b. Characteristics and features of deserts.
- c. Erosion processes and cycles in deserts.
- d. Wind activity.
- e. Sand dune formation.
- f. World distribution of deserts.
- g. Desertification and the effect on society.

3. Stream Processes:

- a. Hydrologic cycle.
- b. Stream energy and erosion.
- c. Stream flow dynamics.
- d. Stream depositional processes.
- e. Fluvial cycle and landforms.
- f. Flooding and societal concerns.

4. Groundwater:

- a. Groundwater accumulation and movement.
- b. Aquifers.
- c. Dynamics between surface water and groundwater.
- d. Groundwater solution and deposition.
- e. Thermal springs and geysers.
- f. Environmental and societal concerns.

5. Beaches:

- a. Beach systems and sediment transport.
- b. Tides and waves.
- c. Human impact/structures on beaches.
- d. Emergent/submergent coastlines.

- e. Coastal features created by deposition.
- f. Coastal features created by erosion.

#### 6. Glaciers and Climatic Change:

- a. Formation of glaciers.
- b. Types of glaciers.
- c. Glacial movement.
- d. Glacial erosion.
- e. Glacial deposition.
- f. Pleistocene glaciation.
- g. Causes of climatic changes.

#### G-202L Lab--Major Topic Outline

1. Map reading techniques: Rectangular survey system coordinate system.
2. Map reading techniques: Longitude and Latitude coordinate system.
3. Using remote sensing, satellite images and maps to interpret environment.
4. Maps and map making.
5. Map reading techniques: UTM coordinate system and topographic map intro.
6. Topographic map interpretation, stereoscopes and topographic profiles.
7. Exploring stream systems and flood planes, recognizing stream features using maps.
8. Influence of flooding on society.
9. Introduction to geologic maps.
10. Geology of Oregon City.

Does the content of this class relate to job skills in any of the following areas:

- |                                      |           |
|--------------------------------------|-----------|
| 1. Increased energy efficiency       | <b>No</b> |
| 2. Produce renewable energy          | <b>No</b> |
| 3. Prevent environmental degradation | <b>No</b> |
| 4. Clean up natural environment      | <b>No</b> |
| 5. Supports green services           | <b>No</b> |

Percent of course:0%

### Section #2 Course Transferability

Concern over students taking many courses that do not have a high transfer value has led to increasing attention to the transferability of LDC courses. The state currently requires us to certify that at least one OUS school will accept a new LDC course in transfer. Faculty should communicate with colleagues at one or more OUS schools to ascertain how the course will transfer by answering these questions.

1. Is there an equivalent lower division course at the University?
2. Will a department accept the course for its major or minor requirements?
3. Will the course be accepted as part of the University's distribution requirements?

If a course transfers as an elective only, it may still be accepted or approved as an LDC course, depending on the nature of the course, though it will likely not be eligible for Gen Ed status.

Which OUS schools will the course transfer to? (Check all that apply)

- |  |                                    |
|--|------------------------------------|
| ✓ EOU (Eastern Oregon University)      | ✓ PSU (Portland State University)  |
| ✓ OIT (Oregon Institute of Technology) | ✓ SOU (Southern Oregon University) |
| ✓ OSU (Oregon State University)        | ✓ UO (University of Oregon)        |
| ✓ OSU-Cascade                          | ✓ WOU (Western Oregon University)  |

Identify comparable course(s) at OUS school(s)

G202 and lab

How does it transfer? (Check all that apply)

- required or support for major**
- general education or distribution requirement**
- general elective**
- :

Provide evidence of transferability: (minimum one, more preferred)

- Correspondence with receiving institution (mail, fax, email, etc.)**
- Other. Please explain.**

catalog

First term to be offered:

**Next available term after approval**

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