Clackamas Community College

Online Course/Outline Submission System

Show changes since last approval in red Print Edit Delete Back Reject Publish

Section #1 General Course Information

Department: Sciences

Submitter

First Name: Sarah
Last Name: Hoover
Phone: 3354
Email: sarahh

Course Prefix and Number: GS - 105

 # 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.

Course Title: Earth System Science

Course Description:

A lab course examining the chemistry and geology of scientific dating techniques, sedimentary rocks, surface processes, fossils, energy resources and the physics and chemistry of energy resources and mass wasting.

Type of Course: Lower Division Collegiate

Is this class challengeable?

No

Can this course be repeated for credit in a degree?

No

Is general education certification being sought at this time?

No

Does this course map to any general education outcome(s)?

Yes

Check which General Education requirement:

✓ Oral Communication

✓ Science & Computer Science
✓ Mathematics

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?

No

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

Yes

Recommendations: 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?

Yes

Have you talked with a librarian regarding that impact?

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. use models and the scientific method to gather/interpret data, create graphs, solve problems and understand physical systems; (SC1) (SC2)
2. perform chemical experiments to model weathering processes on earth and explain how the chemical reactions observed can control sedimentary rock formation; (SC1) (SC2)
3. use Uniformintarianism to hypothesis about past geologic surface conditions based on sedimentary rocks present and apply information to the susceptibility of mass wasting in a region; (SC1) (SC3)
4. collaboratively research information/scientific studies to explain energy resources, societal impacts of resources and present findings to a peer group in a clear manner; (SC1) (SC3)
5. observe and assess local area mass wasting events and critically analyze policies that govern regional metro growth in regions where mass wasting events occur; (SC3)
6. critically evaluate fossils and determine how/why organisms are preserved in the geologic record and use fossil data to correlate rock units and recreate a geologic history for a region. (SC1)(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

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

P 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:

P 1. Use appropriate mathematics to solve problems.

P 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**

✓ **Presentations**

✓ **Multiple Choice Test**

✓ **Other Assessment Tools**: Laboratory activities and practical laboratory quizzes

Major Topic Outline:

1. Critical thinking, earth's age, geologic time and relative dating.
2. Absolute dating, radioactivity, periodic table, isotopes and ½ lives.
3. Intro to sedimentary rocks and weathering processes, balancing chemical equations and chemical formulas.
4. Continue physical and chemical weathering, Avogadro's number, calculating molarity and chemical reactions.
5. Sedimentary rocks and environments.
6. Energy resources, chemistry of fossil fuels, alternative resource, kinetic and potential energy.
7. Energy in Earth's systems, Energy and work, Newton's laws of motion, Force and acceleration, types of force.
8. Mass Wasting.

Laboratory Topics
1. Relative dating techniques.
2. Fossils and fossil formation.
3. Radiometric dating.
4. Physical and Chemical reactions.
5. Sedimentary rocks.
6. Topographic maps.
7. Force and work.
8. Energy and power.
9. Gravity and landslide physics.
10. Energy resource presentations.

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

1. Increased energy efficiency	**No**
2. Produce renewable energy	**No**
3. Prevent environmental degradation	**No**
4. Clean up natural environment	**No**
5. Supports green services	**No**

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)

✓ OSU (Oregon State University) **✓ UO (University of Oregon)**
✓ OSU-Cascade **✓ WOU (Western Oregon University)**

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

OSU: GEO LDT UO: GS120T

How does it transfer? (Check all that apply)

✓ general education or distribution requirement
✓ general elective
:

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

✓ Other. Please explain.

Transferability determined from course transfer web pages from universities

First term to be offered:

Next available term after approval
: