

Clackamas Community College
Online Course/Outline Submission System

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Section #1 General Course Information

Department: Science

Submitter

First Name: Polly

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Course Prefix and Number: ASC - 175

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: Integrated Science Inquiry

Course Description:

An introductory laboratory course for liberal arts majors emphasizing an evolutionary approach to major topics in science through the use of integrated themes. The themes focus on the scientific discoveries and people that shape our understanding of the world. The course emphasizes an interdisciplinary perspective on science, collaborative scientific investigations and critical thinking. Themes have included: Evolution: the idea that shocked the World, the People and Animals of Africa, and the Lewis and Clark Expedition.

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?

No

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

Yes

Recommendations: Pass WR-095 or placement in WR-121

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?

✓ Fall

Is this course equivalent to another?

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

Yes

Course Number: BI-175 Title: Integrated Science Inquiry

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. demonstrate the ability to communicate and comprehend basic scientific principles and concepts important to an understanding of major ideas in science, (SC1)
 2. describe the fundamental concepts of evolutionary biology and its role in shaping current scientific knowledge, (SC3)
 3. critically evaluate and apply the key concepts of evolutionary biology to everyday problems, present possible solutions and generate further questions, (SC1)
 4. demonstrate an ability to work individually and collaboratively to identify scientific resources, gather scientific information, critically analyze scientific information, explore ideas and present complex scientific issues,(SC2)
 5. apply scientific and technical modes of inquiry to gather and critically evaluate information about various topics important to science & society, (SC2),
 6. Explore the limitations and consequences of the science and its impact on human society, (SC3)
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**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.
- P** 2. Locate, evaluate, and ethically utilize information to communicate effectively.
- P** 3. Demonstrate appropriate reasoning in response to complex issues.

SP: Speech/Oral Communication Outcomes

- P** 1. Engage in ethical communication processes that accomplish goals.
- P** 2. Respond to the needs of diverse audiences and contexts.
- P** 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.
- P** 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

- P** 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

P 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**

✓ **Presentations**

✓ **Multiple Choice Test**

✓ **Rubrics**

✓ **Journal Writing**

:

Major Topic Outline:

Major Topic Outline: (May vary slightly with theme)

1. What is science?

- a. A critical look at the limitations and strengths of science to explain the natural world.
- b. Examine the impact of past discoveries and social influences on new scientific discoveries.

2. Where did life come from?

- a. Critical analysis of the evidence to support various scientific hypotheses on the origins of life on earth.
- b. Examination of the technology and methods used to date the earth and its fossils.
- c. Exploring what it means to be alive and the importance of the cell theory.
- d. The theory of Endosymbiosis and a critical evaluation of the evidence supporting it.

3. The Tree of life

- a. A historical look at classification schemes and their influence of naming species.
- b. Homologous structures and the evidence for common descent

4. Natural selection, sexual selection and genetic drift

- a. Exploring the role of the environment and mate selection in shaping populations over time.
- b. Investigating the role of isolation and randomness in shaping populations over time.

5. Modern evolution

- a. An in depth analysis of evidence supporting current scientific hypotheses on the origins and evolution of new species.
- b. An investigation of the mechanisms of evolution and their application to the evolution of complex structures.
- c. Exploring Hox genes and their role in explaining the evolution of animal body plans.
- d. Examination of the evolution of complex behaviors in animals and the evidence to support current scientific explanations.

6. Impact of technology on modern science

- a. Student based inquiry using protein analysis to trace evolutionary relationships between species.

7. Society and Science

- a. A historical look at the impact of the theory of evolution on science and society
- b. Critical examination of the role of religion and societal beliefs in shaping science and/or science curriculum in modern society.
- c. Critical evaluation of the limitations and misuse of science as exemplified by Social Darwinism and the eugenics movement.

8. Inquiry based investigations & presentations

a. Practical application of course concepts in examining current scientific knowledge as outlined in the course theme, i.e. Missing links—exploration of the evidence for evolution; The Tribes of Africa or other selected theme topics.

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)

PSU (Portland State University)

OSU (Oregon State University) **UO (University of Oregon)**

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

PSU--ASC 200

UO Maps to BI-130

OSU Transfer as General education science class with lab.

How does it transfer? (Check all that apply)

general education or distribution requirement

:

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

Correspondence with receiving institution (mail, fax, email, etc.)

Other. Please explain.

Existing course. Already transfers.

First term to be offered:

Next available term after approval

:

