

Clackamas Community College

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Section #1 General Course Information**Department:** Science**Submitter**

First Name: Polly

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Course Prefix and Number: BI - 176**# 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: Human Evolution; Diseases 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?

Yes

Have you talked with a librarian regarding that impact?

Yes (A 'Yes' certifies you have talked with the librarian and have received approval.)*

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.

Yes

Course Number: **ASC-176** 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 humans and human diseases, 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 science and its impact on human society, (SC3)
 7. integrate the concepts of natural selection, population genetics, artificial selection, speciation and extinction to describe the relationship between humans and their environment, (SC1)
-

**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**
 - ✓ **Presentations**
 - ✓ **Thesis/Research Project**
 - ✓ **Criteria**
 - ✓ **Rubrics**
 - ✓ **Journal Writing**
 - ✓ **Performances/Simulation**
- ✓ **Projects**
 - ✓ **Writing Assignments**
 - ✓ **Multiple Choice Test**

:

Major Topic Outline:

1. What makes something science
 - a. How do you know what you know? Critical thinking in science.
 - b. Exploring misconceptions about science, scientific research and scientific methodologies.
2. Where did life come from?
 - a. Critical analysis of the evidence to support various scientific hypotheses on the origins of complex life on earth.
 - b. Describe the basis of multicellularity and the origins of multicellular organisms.
3. Introduction to Modern Genetics
 - a. An analysis of population genetics & genetic diversity.
 - b. Identify the source of mutations & diversity and its social implications.
 - c. Examine the link between developmental genetics & embryology.
4. Natural selection
 - a. Examine the importance of natural selection in shaping human population.
 - b. Use of natural selection models to explain, predict and examine changes in human populations.
 - c. Explore the interactions between natural selection, genetic drift and diversity in human populations.
5. Speciation & the fossil record
 - a. Examine current scientific information on how species evolve.
 - b. Explore the relationship between speciation and extinction.
 - c. Critical analysis of the role of fossils and DNA analysis in tracing human evolution.
6. Why sex?
 - a. Examine the importance of meiosis and sexual reproduction in creating diversity.
 - b. Exploration of the role of sexual selection in shaping populations & behaviors.
 - c. Critical analysis of the role of innate versus learned behaviors.
 - d. Examination of various hypotheses to explain mate selection & sexual orientation.
7. Human Populations
 - a. Exploration of the role of human migration in the dissemination of human traits and diseases
 - b. Examination of the historical, social and biological perspectives on Race and their implications for human society.
8. Science & Society
 - a. The impact of social and political decisions on science and/or science education.
9. Inquiry based investigations & presentations
 - a. Practical application of course concepts to explain the human condition as outlined

in the course theme, i.e. What makes us human? Human Evolution; Exploration of the impact of specific diseases on the peoples 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 201 Science Inquiry
all others currently transfers as Gen. Ed. Science course 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.**

An existing class already transferring.

First term to be offered:

Next available term after approval

:

