

JAMESTOWN COMMUNITY COLLEGE
State University of New York

INSTITUTIONAL COURSE SYLLABUS

Course Title: SURI: Environmental II

Course Abbreviation and Number: BIO 2830

Credit Hours: 4

Course Type: Lecture/Lab

Course Description: Students will participate in environmental research that pertains to their area of interest and/or as requested by local environmental organizations. As part of this experience, students will read, interpret, and present published scientific research papers. Students will be responsible for experimental design, maintaining a laboratory journal, and acquiring the necessary laboratory and field research skills to complete their research and present their results. Students are divided into either Environmental I or Environmental II, depending on their level of experience, but are blended together in a single course. Environmental II students are expected to function like an advanced student. In addition to Environmental I expectations, they are also expected to understand and communicate how the papers they present fit into the underlying science.

Prerequisite: ENG 1510, BIO 1570, and BIO 1551+BIO1552 or BIO 1580 or BIO 1830 or BIO 2550 or BIO 2650 or BIO 2660 or BIO 2670.

General Education Requirements Met

SUNY

Natural Sciences

JCC

Scientific Reasoning

Applied Learning

Student Learning Outcomes:

Students who demonstrate understanding can:

1. Demonstrate critical reasoning skills to analyze published scientific research papers with an emphasis on the materials and methods.
 2. Demonstrate effective communication, organization, and technological skills to orally present scientific research.
 3. Apply the scientific method, including hypothesis testing, in the design and implementation of a research project.
 4. Demonstrate appropriate statistical and other analytical techniques to evaluate research data.
 5. Properly use appropriate laboratory and field equipment
 6. Produce clear and coherent writing to maintain a scientific journal with an emphasis on organized data collection.
 7. Communicate how the papers they present fit into the underlying science.
 8. Demonstrate an understanding of the methods scientists use to explore natural phenomena, including observation, hypotheses development, measurement and data collection, experimentation, evaluation of evidence, and employment of data analysis or mathematical modeling. [SUNY Gen Ed – Natural Sciences]
 9. Application of scientific data, concepts, and models in one of the natural sciences. [SUNY Gen Ed – Natural Sciences]
 10. Effectively apply knowledge and skills to a real-world experience, creative project, or independent intellectual investigation. [JCC Gen Ed – Applied Learning]
 11. Thoughtfully reflect on connections between concepts studies in the classroom and insights gained from an applied learning experience/project. [JCC Gen Ed – Applied Learning]
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Topics Covered:

Colloquium:

- Research: Background Information
- Scientific Method and Statistics
- Sample Presentation
- Reading Scientific Papers
- Student Presentations
- Group Presentation on Student Research

Laboratory

- Designing Research Project(s)
 - Sampling Techniques
 - Equipment Use
 - Keeping a Scientific Journal
 - Research (laboratory & field)
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Information for Students

- Expectations of Students

- [Civility Statement](#)
- [Student Responsibility Statement](#)
- [Academic Integrity Statement](#)
- [Accessibility Services](#)
Students who require accommodations to complete the requirements and expectations of this course because of a disability must make their accommodation requests to the Accessibility Services Coordinator.
- [Get Help: JCC & Community Resources](#)
- [Emergency Closing Procedures](#)
- Course grade is determined by the instructor based on a combination of factors, including but not limited to, homework, quizzes, exams, projects, and participation. Final course grade can be translated into a grade point value according to the following:

A=4.0	B+=3.5	B=3	C+=2.5	C=2	D+=1.5	D=1	F=0
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- Veterans and active duty military personnel with special circumstances (e.g., upcoming deployments, drill requirements, VA appointments) are welcome and encouraged to communicate these to the instructor.

Effective Date: Fall 2023