

**JAMESTOWN COMMUNITY COLLEGE**  
**State University of New York**

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**INSTITUTIONAL COURSE SYLLABUS**

**Course Title:** Principles of Ecology and Evolution

**Course Abbreviation and Number:** BIO 1580

**Credit Hours:** 4

**Course Type:** Lecture/Lab

**Course Description:** Students will identify and evaluate the general tenets of evolutionary theory, identify and apply principles of ecology and biodiversity, identify the major episodes in the geological history of life, and evaluate and describe the evolutionary history of the Earth's major plant and animal groups. Laboratory may include one or more outdoor experiences. This survey course is appropriate for both science and non-science majors.

Prerequisite/Corequisite: ENG 1510 and CHE 1500 (or higher) - unless high school chemistry was passed;

Prerequisite/corequisite MAT 0550 or Eligibility: MAT 1590 (or higher).

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**General Education Requirements Met**

**SUNY**

Natural Sciences

**JCC**

Scientific Reasoning

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**Student Learning Outcomes:**

Students who demonstrate understanding can:

1. Identify and evaluate general tenets of evolutionary theory as it applies to the current understanding of life on earth.
  2. Identify and apply principles of population, community, and ecosystem ecology and biodiversity, and integrate these principles into general understanding of the unity and diversity of life.
  3. Identify the major episodes in the geological history of life, and compare and contrast major scientific theories which explain how life began on early Earth.
  4. Evaluate and describe the evolutionary history and various adaptations for survival of Prokaryotes, Protists, Fungi, Plants, Invertebrates, and Vertebrates.
  5. 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]
  6. Application of scientific data, concepts, and models in one of the natural sciences. [SUNY Gen Ed – Natural Sciences]
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**Topics Covered:**

- How populations evolve
  - The origin of species
  - The biosphere: and introduction to Earth's diverse environments
  - Population ecology
  - Communities and ecosystems
  - Tracing evolution history
  - Microbial life: prokaryotes and protists
  - The evolution of plant and fungal diversity
  - Plant structure, growth, and reproduction
  - The evolution if invertebrate diversity
  - The evolution of vertebrate diversity
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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.

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**Effective Date:** Fall 2023