



Course Syllabus

Course Information

Course Title: General Education Biology

Subject and Number: BSC 1005

Course Description: This course applies the scientific method to critically examine and explain the natural world including but not limited to cells, organisms, genetics, evolution, ecology, and behavior. Student learning outcomes: students will evaluate data regarding validity; students will read and interpret a variety of scientific data; students will describe the natural world; and students will articulate and practice the scientific method.

Class Number: LOREM IPSUM

Term and Year: LOREM IPSUM

Course Modality: [MDC Modalities](#)

Instructor Information

Name: LOREM IPSUM

Department and Campus: LOREM IPSUM

Office location: LOREM IPSUM

Office hours: *(communicate course office hours with students)*

Phone number: 123-456-7890

Email: LOREM IPSUM

Communication Policy: *(Faculty will establish protocols for communication with students)*

Required Textbook, Course Materials, and Technology

Required course materials: *(Textbook(s), library reserves, shark pack, and/or other required readings. Include ISBN Number and author(s))*

List optional/supplemental materials/OER: LOREM IPSUM

Technology & Technical Skill Requirements: *(Technology tools or equipment students need to complete this course are included)*

Grading Policy & Assessment Methods

List all activities, papers, quizzes, tests, etc. including grading scale used for final grade calculation. Relationships between the final grade and the learner's accumulated points or percentages/weights breakdown for each assessment or component of the course grade.

Include policy on late submissions.

For MDC Live and MDC Online courses, include policy regarding exams (e.g., ProctorU, Respondus Lockdown and Monitor, etc.)

If applicable, include guidelines for extra credit.

Incomplete Grades: [View the college's procedures for Incomplete Grades](#)

Miami Dade College Policies

Attendance Policy: *(Faculty include precise statements about illnesses/emergencies/tardiness, missed assignments/make-up.)*

Students Rights and Responsibilities: *Policies addressing academic integrity and plagiarism, code of conduct, grade appeals, religious observations, services for students with special needs, student complaints, and other.*

[For more information, visit the Student's Rights and Responsibilities page](#)

Available Support Services & Resources

- [Tutoring Labs and Technology – Learning Resources](#)
- [Virtual Tutoring through Learning Resources or Smarthinking Online Tutoring](#)
- [ACCESS: A Comprehensive Center for Exceptional Student Services](#)
- [Advisement](#)
- [Password and Login Technical Support](#)
- [Technical Support for MDC Live and MDC Online Courses](#)
- [SMART Plan](#)

(Faculty select from the above if applicable and include additional course/campus specific resources)

Available Support Services & Resources

- [Public Safety - Services](#)
- [Hurricane and Other Natural Disasters:](#) In the event of a hurricane or other disaster, the class follows the schedule established by the College for campus-based courses. Please visit the MDC website or call the MDC Hotline (305-237-7500) for situation updates.

Course Description

BSC1005 | General Education Biology | 3 credits

This course applies the scientific method to critically examine and explain the natural world including but not limited to cells, organisms, genetics, evolution, ecology, and behavior. Student learning outcomes: students will evaluate data regarding validity; students will read and interpret a variety of scientific data; students will describe the natural world; and students will articulate and practice the scientific method.

Course Competencies

Competency 1:

The student will learn of the nature of science and the scientific process by:

- Defining science and biology.
- Differentiating between science and pseudoscience.
- Discussing the characteristics of life.
- Employing the scientific method to understand biological issues in our society and make scientifically informed decisions.

Learning Outcomes

- Critical thinking
- Information Literacy
- Social Responsibility

Competency 2:

The student will learn about the nature of matter and energy, and how these relate to living organisms by:

- Explaining how biological systems transform energy and matter.
- Explaining atomic structure and chemical bonding.
- Identifying the four major groups of biological molecules, their functions in living systems, and their relation to human health.
- Defining metabolism
- Describing the roles of enzymes in metabolism and how they relate to human health.
- Examining the natural energy transforming processes of photosynthesis and cellular respiration.

Learning Outcomes

- Critical thinking

Competency 3:

The student will learn cell structure and function by:

- Describing the structure of prokaryotic cells, eukaryotic cells, and viruses.
- Explaining the functions of cellular organelles.
- Differentiating between plant, animal, and prokaryotic cells.
- Explaining transport processes across plasma membranes.
- Identifying the differences between viruses and bacteria and their impact on human health.

Learning Outcomes

- Critical thinking

Competency 4:

The student will learn the processes of reproduction and cell division and the basic principles of molecular genetics by:

- Explaining the function and relevancy of reproduction, highlighting the differences between asexual and sexual forms.
- Explaining the different roles of cell division, such as growth, repair, and the production of gametes.
- Evaluating mitosis and meiosis as processes that contribute to the continuity and diversity of life.
- Identify how errors in mitosis and meiosis can lead to abnormal conditions, highlighting cancer.
- Examining the principles of heredity, both Mendelian and non-Mendelian.
- Explaining the processes of DNA replication, gene expression, and their applications in biotechnology.

Learning Outcomes

- Critical thinking
- Ethical Issues

Competency 5:

The student will demonstrate understanding of the evolutionary theory by:

- Explaining the theory of evolution and modern synthesis.
- Explaining the evidence that supports the theory of evolution.
- Describing how scientists classify living organisms.

Learning Outcomes

- Critical thinking

Competency 6:

The student will demonstrate knowledge of interactions between organisms and their environment by:

- Explaining how abiotic factors affect organisms and their environment.
- Describing the factors and mechanisms that control population growth.
- Discussing the various relationships existing among organisms in communities.
- Discussing ecosystem processes.
- Describing the major biomes on Earth.
- Discussing the global impact of human activities on the environment and biodiversity.
- Discussing practices and strategies for achieving sustainability.

Learning Outcomes

- Critical thinking
- Environmental Responsibility
- Ethical Issues
- Social Responsibility