



Course Number, Title and Credits

BIOU 101 - Introduction to Biology - 3 credits

Course Catalog Description

This course introduces the principles and concepts of biology with an emphasis on the impact of the human footprint on our planet. Students will examine basic cell structure and function, metabolism, cell growth, and genetics. Students will also explore concepts of evolution and the interaction between living organisms and their environment. Online Only. 3 credits.

Essential Equipment

All students must have reliable access to a working computer with Internet access throughout each week of the class. Each student will need to be able to access and work in the University's online Learning Management System, Blackboard. For more information about personal computer requirements [click here](#).

Academic Integrity

The University of Massachusetts Global is an academic community based on the principles of honesty, trust, fairness, respect, and responsibility. Academic integrity is a core University value, which ensures respect for the academic reputation of the University, its students, faculty and staff, and the degrees it confers. The University expects that students will conduct themselves in an honest and ethical manner and respect the intellectual work of others.

Submitting to faculty work completed by the use of any artificial intelligence tool without permission and/or when prohibited by class policy. When faculty require the use of technology, including artificial intelligence, as a part of an assignment for the course, there is no violation. Students are reminded to consult syllabi, assignment sheets/rubrics, program documents and their faculty. Use of artificial intelligence, when permitted, must be correctly cited in the assignment.

The [UMass Global online library](#) provides resources to support research, proper citation styles, and the safe and responsible use of generative artificial intelligence or Gen AI.

- The [Academic Integrity and Plagiarism Avoidance](#) page provides guidance to help students better understand academic integrity and includes tips on how to avoid plagiarism.
- The [Citing Sources](#) page offers guidance on how to properly cite using APA, MLA, and Chicago styles.
- The [Artificial Intelligence Resource Guide for Students](#) provides advice for understanding and appropriately using generative artificial intelligence tools such as ChatGPT and Bard.

UMass Global's Office of Accessible Education

Students who require disability-related services or accommodations to access their educational experience can register with the Office of Accessible Education (OAE). The Office of Accessible Education (OAE) is committed to ensuring equal educational access and opportunity for all members of our academic community. Students will be provided equitable and reasonable accommodations and services that are in compliance with [Section 504 of the Federal Rehabilitation Act of 1973](#) and the [Americans with Disabilities Act of 1990 \(ADA\)/Americans with Disabilities Act Amendments Act of 2008 \(ADAA\)](#). Registration with OAE is on a voluntary, self-identifying basis. Please visit the [Office of Accessible Education \(OAE\) website](#) for more information about how to register for services, eligibility requirements, and information about potential academic accommodations and services.

Our university is committed to ensuring equal access for all students. Let us know about any accessibility barriers you encounter using any of our online systems or websites by submitting a [Feedback or Accessibility Concern Submission Form](#). We'll do our best to improve things and get you the information you need.

University Policies

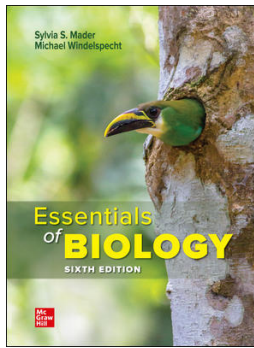
Students are responsible for complying with university policies including, but not limited to: incompletes, course drops, and student conduct. Information may be found in the [University Catalog](#).

Required Textbooks

Essentials of Biology

978-1260087321

Essentials of Biology, sixth edition is designed to provide students who are not majoring in science with a fundamental understanding of the science of biology. Even though these students are not scientists, an



understanding of how science can help identify, analyze, and offer solutions to the many challenges facing human society is critical to our species' health and survival.

Sylvia Mader & Michael Windelspecht
McGraw-Hill Education
2021
6th ed.

All student textbooks are available at the University of Massachusetts Global Bookstore:

<https://www.bkstr.com/umassglobalstore>

Learning Outcomes and Assessment

Learning Outcomes are statements that specify what learners will know, understand, or be able to demonstrate at the end of a learning experience.

Types of Learning Outcomes include:

- Course Learning Outcome – Result of finishing a course.
- Program Learning Outcome – Result of finishing a program.
- Institutional Learning Outcome – Result of finishing a degree at an institution, reflecting the core learning values and experiences of all graduates.

A Signature Assignment is an assignment used to measure a student's mastery of a program or institutional learning outcome. If a course you are taking includes a Signature Assignment, it will be clearly marked (**SIGNATURE ASSIGNMENT**).

[Click here](#) to access information on the Program Learning Outcomes (PLOs) and/or Institutional Learning Outcomes (ILOs) and Curriculum Map related to this course.

Course Learning Outcomes

1. Apply the scientific method to investigate elementary biological problems.
2. Diagram the atomic structure of biologically important elements.
3. Compare and contrast the structure and functions of prokaryotic and eukaryotic cells.
4. Analyze the structure of a virus and other acellular infectious agents.

5. Describe cellular respiration, photosynthesis and the role of enzymes in these metabolic pathways.
6. Distinguish between meiotic and mitotic forms of cell division.
7. Explain the basic principles of inheritance.
8. Summarize life information processes including DNA replication, transcription, and translation.
9. Explain the theory of evolution, the mechanisms of evolution (especially natural selection), and the underlying scientific support for evolution.
10. Analyze the impact of humans on our environment.

Major Study Units

1. Cells
2. Genetics
3. Evolution
4. Ecology

Instructional Strategies

This class includes readings, textual and video instruction, exercises, discussions, and projects. Instructional Strategies are further explained in the Blackboard course shell.

Letter Grade/Percentage Equivalents

Grade Point System

(Rounded up at .5 and up)

A = 94%-100%	B = 84%-86%	C = 74%-76%	D = 64%-66%
A- = 90%-93%	B- = 80%-83%	C - = 70%-73%	D - = 60%-63%
B+ = 87%-89%	C+ = 77%-79%	D+ = 67%-69%	F = 59% and below

Attendance Policy

Requirements for student attendance and participation will be defined by each instructor based on the following policy:

- Monday of the first week of the session is the first day of class.

- Regular attendance/engagement is expected for student success. Online engagement is evident through posting to a discussion board, blog, completing assignments including journal entries, or taking quizzes and exams. If regular attendance/engagement are not evident, the student's grade may be adversely affected. If a student misses more than one week of engagement in an online class, the student may, at the discretion of the instructor, fail the course.
- Students in courses with required synchronous class sessions are expected to remain for the full duration. If a student misses more than one required synchronous online class, the student may, at the discretion of the instructor, fail the course.
- Students must submit an academically-related assignment through the Learning Management System (LMS) before the end of Week 2 (i.e., a quiz, test, course content-related Discussion Board post, or other course content-related assignment). Introduction posts do not count as an academically-related assignment. If a student does not submit an academically-related assignment, the student will be administratively dropped from the course. Students administratively dropped for non-attendance/participation will not be reinstated in the course. In infrequent cases, students in certain classes may be exempt from the requirement to submit an academically-related assignment before the end of Week 2; students may consult with their instructor for further information.
- Students should consider withdrawing from a course if they will be unable to participate each week. Instructors may, but are not obligated to, accommodate students under extraordinary circumstances, but the student must request accommodation and provide requested supporting documentation.
- Schools and programs may have different attendance policies. Refer to school and program specific information for additional attendance policies.

Methods of Evaluation for Determining Grades

Assignment Detail for Fully Online Course:

Assignments - Refer to Rubric(s) in Course Information on Blackboard	Possible Points
Quiz (week 1-3, 5-7) 30 points each	180
Discussion Board (week 1-7) 2 prompts per week @ 20 points each	280
Homework (week 1-3, 5-6) 30 points each	150
Essay (week 7)	30
Midterm (week 4)	180
Final (week 8)	180
	Total: 1000

Class by Class Outline for Online Course:

Week	Topics	Assignments
1	<ul style="list-style-type: none"> • Levels of biological organization • Characteristics of living organisms 	Reading: Ch 1, 2, & 3 Videos

	<ul style="list-style-type: none"> • Classification of living organisms • Scientific method • Atomic Structure • Bonding between atoms • Chemical formulas and reactions • Importance of water to living organisms • pH and buffers • Structure and function of carbohydrates, lipids, proteins, and nucleic acids 	<p>Discussion Boards</p> <p>Week 1 Homework</p> <p>Week 1 Quiz</p>
2	<ul style="list-style-type: none"> • Comparison of light versus electron microscope • Characteristics of bacterial cell • Characteristics of eukaryotic cell • Characteristics of virus • Characteristics of prions 	<p>Reading: Chapters 4 & 17</p> <p>Videos</p> <p>Discussion Boards</p> <p>Week 2 Homework</p> <p>Week 2 Quiz</p>
3	<ul style="list-style-type: none"> • Structure of ATP and its function in a cell • Structure and function of enzymes • Membrane transport • Light reaction and Calvin reaction of photosynthesis • Complete glucose breakdown – glycolysis, Krebs's cycle, electron transport chain • Fermentation 	<p>Reading: Chapter 5, 6, 7</p> <p>Videos</p> <p>Discussion Boards</p> <p>Week 3 Homework</p> <p>Week 3 Quiz</p>
4	<ul style="list-style-type: none"> • Structure of chromosomes 	<p>Reading: Chapter 8 & 9</p> <p>Videos</p>

	<ul style="list-style-type: none"> • Events occurring in a cell during interphase, mitosis, and cytokinesis • Cell cycle control and cancer • Factors that results in development of cancer • Comparison of prokaryotic and eukaryotic reproduction • Purpose and process of meiosis • Non-disjunction 	<p>Discussion Boards</p> <p>Midterm Exam</p>
5	<ul style="list-style-type: none"> • Mendel's laws and patterns of inheritance • Exceptions to Mendel's laws • Sex linked inheritance • Structure and function of DNA and RNA • DNA replication • Transcription • Translation • Gene regulation in prokaryotes and eukaryotes 	<p>Reading: Chapter 10 & 11</p> <p>Videos</p> <p>Discussion Boards</p> <p>Week 5 Homework</p> <p>Week 5 Quiz</p>
6	<ul style="list-style-type: none"> • Process of natural selection • Evidence of evolutionary change • Microevolution • Macroevolution 	<p>Reading: Chapter 14, 15, & 16</p> <p>Videos</p> <p>Discussion Boards</p> <p>Week 6 Homework</p> <p>Week 6 Quiz</p>
7	<ul style="list-style-type: none"> • Ecology • Compare the environmental impact of more developed and less developed countries 	<p>Reading: Chapter 30 & 32</p> <p>Video</p> <p>Discussion Boards</p>

	<ul style="list-style-type: none"> • Patterns of population growth • Factors that affect population growth • Extinction • Biodiversity and its importance • Effect of humans on land and water resources. • Fossil fuels and pollution • Activities that help make a society more sustainable 	Sustainable Society Essay Week 7 Quiz
8	<ul style="list-style-type: none"> • Review 	Final Exam

Methods of Evaluation for Determining Grades

Online Only

UMass Global's CARES Team

The [CARES team](#) is a campus-wide team of appointed staff and faculty responsible for identifying, assessing, and responding to concerns and/or disruptive behaviors by students, faculty/staff, and community members who struggle academically, emotionally, or psychologically, or who present a risk to the health or safety of the university or its members.

Individuals may refer themselves or other community members of concern by emailing cares@umassglobal.edu or by filling out a referral form [here](#). The CARES Team provides short term assessment, intervention, support, and recommendations of resources to those referred and engaged in the process.

UMass Global's Title IX Statement

The University of Massachusetts Global strives to maintain and foster a climate that promotes respect and human dignity. Sexual misconduct and relationship violence in any form is antithetical to the university's mission and core values, violates university policies, and may also violate federal and state

law. The office of Title IX is primarily concerned for students' safety and well-being and is tasked with investigating all reports of sexual misconduct experienced by our community members. Title IX prohibits sex-based and gender-based discrimination and harassment, which includes discrimination based on pregnancy and/or pregnancy-related complications, parental status, and marital status. Students expecting or experiencing pregnancy-related complications, that may require educational accommodations, should contact the University's Title IX Coordinator and/or the Office of Accessible Education.

The University and Title IX's prohibition of sex discrimination also covers sexual harassment, sexual violence, and any other form of sexual misconduct. We offer options and resources to all students affected by these issues and are committed to providing a fair, thorough, and prompt investigation and adjudication process. If you or someone you know has been impacted by sexual assault, dating, and domestic violence, stalking, or sexual exploitation, please visit the [University's Title IX Resource Page](#) to access additional resources and information.

UMass Global's staff and faculty are tasked with reporting any possible sex or gender-based discrimination or Title IX violations to the University's Title IX Coordinator at civilrightscomplaints@umassglobal.edu.

[Click on this Link to our University Title IX Policy.](#)