BRANDMAN University Chapman University System

School of Arts & Sciences Course Syllabus

Course Number/Title/Credits: BIOU 101/ Introduction to Biology/ 3

Catalog Course 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.

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**).

Access the following link(s) for information on the Program Learning Outcomes (PLOs) and Curriculum Map related to this course:

Click Here for Program Learning Outcomes (PLO)

Access the following link(s) for information on the Institutional Learning Outcomes (ILOs) and Curriculum Map related to this course:

Click Here for Institutional Learning Outcomes (ILO)

Prerequisites: None

Restrictions: None

Essential Equipment and Facilities: By the end of the first week of class, students must have the ability to access MyBrandman, the Blackboard portal to their class site, and other key locations necessary to meet course requirements. Individual browser preferences vary, and, at times, some work with Blackboard better than others. Therefore, if you try one browser, such as Firefox, and you have difficulty, try another browser, such as Internet Explorer. Since versions of Microsoft Office vary, students who do not use the most recent version may need the free conversion

Last Revision Date: 5/30/2017

software available via the Microsoft.com website. Java is also required for courses. Students who do not have Java may download it for free at java.com.

Academic Integrity: As a learning community of scholars, Brandman University emphasizes the ethical responsibility of all members to seek knowledge honestly and in good faith. Students are responsible for doing their own work. Academic dishonesty of any kind will not be tolerated. Violations of academic integrity include, but are not limited to, cheating, plagiarism, or misrepresentation of information in oral or written form. Plagiarism means presenting someone else's idea or writing as if it were your own. If you use someone else's idea or writing, be sure the source is clearly documented. Further information may be found in the *Brandman University Catalog* available under Academic Resources in MyBrandman.

Americans with Disabilities Act Statement: According to the Americans with Disabilities Act (ADA) of 1990, an individual with disability is defined as having functional limitations resulting from a diagnosed disability and applies to an individual who has a physical or mental impairment that substantially limits one or more of the individual's major life activities; has a record of such an impairment; or is regarded as having such an impairment. In compliance with ADA guidelines, students who have any condition, either permanent or temporary, that may impair or impact their ability to successfully complete assignments, tasks or satisfy course criteria are requested to notify their Advisor or Campus Director in order to understand how to apply for Student Disability Services. If and when the student is granted formal approval by the Director of ADA Services, both the student and professor will be notified. It is highly suggested that the student contact their professor to discuss the accommodations during the first week of the session. The granting of accommodations will not be retroactive and cannot jeopardize the academic standards or integrity of the course.

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 *Brandman University Catalog* available under Academic Resources in MyBrandman.

Online Brandman Library Resources: Click on red "Library" button in Blackboard.

Texts are available at the Brandman Online Bookstore: See "Bookstore" under Academic Resources in MyBrandman.

Required Text: Mader, S. S., & Windelspecht, M. (2018). Essentials of Biology (5th ed.). New York, NY: Mcgraw Hill Higher Education. ISBN 13: 978-1-259-66026-9

Course Learning Objectives:

By the end of the course, students should be able to:

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, and discussions. Instructional Strategies may be further explained in the course Blackboard site.

Attendance Policy

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

- Monday of the first week is considered the first day of class for online and blended instruction. This includes instruction for fully online classes and online instruction supporting blended classes.
- Regular onsite attendance is expected for student success. If a student misses more than one onsite class or one week of engagement in an online class, the student may, at the discretion of the instructor, fail the course. Students are expected to attend all classes, particularly the first night of class.
- Students should consider withdrawing from a course if they will be absent more than once. Instructors may, but are not obligated to, accommodate students under extraordinary circumstances, but the student must request accommodation and provide requested supporting documentation. Students enrolled in blended courses must attend at least one class during the first two weeks of classes.
- If a student misses a portion (e.g., arriving late or leaving early) of an onsite course, the student's grade may be adversely affected. Students who are not in attendance for at least 75 percent of any scheduled class may be considered absent for that class. Students should discuss missing portions of a class with their instructor to determine how their grade may be affected.
- Regular online attendance/participation and engagement is expected for student success in both fully online and blended courses. Online participation is evident through posting to a discussion board, blog, completing assignments including journal entries, or taking quizzes and exams.
- Schools and programs may have different attendance policies. Refer to school and program specific information for additional attendance policies.

Letter Grade/Percentage Equivalents:

Grade Point System (Rounded up at .5 and up)			
A = 93%-100%	B = 83%-86%	C = 73%-76%	D = 63%-66%
A- = 90%-92%	B- = 80%-82%	C- = 70%-72%	D-= 60%-62%
B+ = 87%-89%	C+ = 77%-79%	D+ = 67%-69%	F=59% and below

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Methods of Evaluation for Determining Grades: Quiz, discussion, homework assignment, midterm exam, and final exam

Assignment Detail

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:

Week	**Topics**	**Assignments**
Week 1	• Levels of biological organization • Characteristics of living organisms • 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	Reading: Ch 1, 2 & 3 Videos Discussion Boards Week 1 Homework Week 1 Quiz
Week 2	• Comparison of light versus electron microscope • Characteristics of bacterial cell • Characteristics of eukaryotic cell • Characteristics of virus	Reading: Chapters 4, 17 (pg. 286 - 292) Videos Discussion Boards Week 2 Homework

	• Characteristics of prions	Week 2 Quiz
Week 3	• 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, Kreb's cycle, electron transport chain • Fermentation	Reading: Chapter 5, 6, 7 Videos Discussion Boards Week 3 Homework Week 3 Quiz
Week 4	• Structure of chromosomes • 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	Reading: Chapter 8, 9 Videos Discussion Boards Midterm Exam
Week 5	• 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	Reading: Chapter 10, 11 Videos Discussion Boards Week 5 Homework Week 5 Quiz
Week 6	• Process of natural selection • Evidence of evolutionary change • Microevolution • Macroevolution	Reading: Chapter 14, 15, 16 (pg. 265 - 276) Videos Discussion Boards Week 6 Homework Week 6 Quiz

Week 7	• Ecology • Compare the environmental impact of more developed and less developed countries • 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	Reading: Chapter 30, 32 Video Discussion Boards Sustainable Society Essay Week 7 Quiz
Week 8	• Review	Final Exam