

Syllabus for
BIO 101–Principles of Biology Lecture
3.0 Credit Hours
Spring 2025

I. COURSE DESCRIPTION

A study of the main principles of life common to both plants and animals, including scientific methods, levels of organization, cell structure and function, photosynthesis, respiration, molecular and Mendelian genetics, reproduction, development, evolution, classification, behavior and ecology, and their appropriate applications for solving current biological problems. (Open to biology majors by permission. BIO 101 and BIO 111 may not both be taken for credit)
Corequisite: BIO 101 Lab.

II. COURSE GOALS

In adapting this course to meet the needs of non-majors more adequately, emphasis is made on the understanding and appropriate application of basic biological principles to many problems of biological science in society. We believe that even this brief involvement with the philosophy, methods, findings and concepts of biology, and its interrelations with other areas of life will make a noticeable contribution toward becoming a scientifically literate citizen who will function more effectively in solving science-related problems.

III. STUDENT LEARNING OUTCOMES FOR THIS COURSE

As a result of successfully completing this course, the student will be able to do the following:

- A. Converse using the principles of life common to both plant and animal science.
- B. Use the scientific method in problem solving, including population and environmental stewardship.
- C. Recall terms necessary to comprehend and discuss the biological concepts presented in the course as evidenced by being able to use the terms correctly.
- D. Exhibit a mature, responsible attitude toward work, as part of the training inherent in the discipline of science and development of consistent Christian character by being prepared, present, and punctual.
- E. Apply the principles of biology to modern problems (e.g., environmental pollution, world food problems) within Christian perspective.
- F. Read science periodicals such as **Science**, **Scientific American**, and **Science News** with interest and understanding.

IV. TEXTBOOKS AND OTHER LEARNING RESOURCES

Required Textbook
(Free Online textbook)

V. POLICIES AND PROCEDURES

A. Course Procedures

1. Evaluation Procedures:

<u>Item:</u>	<u>Percentage:</u>
Exams	40%
Quizzes	10%
Discussions and Homework	50%

<u>Semester Grade</u>	<u>Percent</u>
A	90-100
B	80-89
C	70-79
D	60-69
F	59 and below

- Only administrative excuses or serious medical problems are allowed for an **excused late exam or quiz**. In such cases the instructor must be contacted BEFORE the scheduled exam time. If the instructor is not contacted upon a student's return to class after a missed exam, the makeup is treated as an **unexcused late exam**. Late exams must be taken before the next class meets. **Unexcused late exams** may be taken but will cost the student 20% of his or her potential maximum makeup exam grade the first time, 30% the second time, 40% the third time, etc.
- The student is allowed three unexcused absences for instances such as illness, emergencies, or for personal reasons. Thereafter each absence will result in a 2% reduction in the total semester points. Only administratively excused absences will be excused.
- Students who miss class are responsible for finding out what they missed and arranging to make up any possible outstanding work. All homework must be made up within a week. All quizzes and exams must be made up before the next scheduled class time. It is up to the professor whether or not to accept late work. No late work or exams will be accepted after the final day of classes.
- Quizzes and Exams will be timed. Students who are late without an administrative excuse will not be given additional time. **Students who miss a quiz will not be allowed to make up the quiz unless they have an administrative excuse.** The missed quiz must be made up before the next class meeting.
- All assignments require individual effort unless indicated otherwise. Any evidence of plagiarism, use of AI tools without instructor permission, or cheating on assignments will result in a zero for that assignment. Any cheating on a quiz or exam or a repeat plagiarism offence on an assignment will result in an automatically earned "F" for the semester.
- Whole Person Assessment Requirements
The WPA assignment "Global Responsibility and Christian Action: Confronting the Plastic Crisis" aims to engage students with the environmental issue of plastic pollution, understand its global impact, and explore the Christian response to this issue.

VI. COURSE CALENDAR

WK	Topics	Concepts of Biology Chapters
1	The Process of Science	Ch. 1
2	Critical Thinking in Science	
3	Biologically Important Molecules and Nutrition	Ch. 2
4	Cell and Cell Reproduction	Ch. 3, Ch. 6, Ch. 7
5	Respiration and Photosynthesis	Ch. 4, Ch. 5
6	DNA and Biotechnology	Ch. 9, Ch. 10
7	Introduction to Genetics and Inheritance of Traits	Ch. 8
8	The Unity and Diversity of Living Things	Ch. 11, Ch.12 and Reed Book
9	Diversity of Microbes, Fungi and Protists	Ch. 13
10	Diversity of Algae and Plants	Ch. 14
11	Diversity of Animals	Ch. 15
12	Population and Community Ecology	Ch. 19
13	Ecosystems and the Biosphere	Ch. 20
14	Special Topics: Earth and Human Activity	
15	Special Topics: Restoration Ecology	

Primary Program: Global Environmental Sustainability (B.S.)
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This course contributes to the University and program outcomes as indicated below:

Significant Contribution – Addresses the outcome directly and includes targeted assessment.

Moderate Contribution – Addresses the outcome directly or indirectly and includes some assessment.

Minimal Contribution – Addresses the outcome indirectly and includes little or no assessment.

OUTCOMES	Significant Contribution	Moderate Contribution	Minimal Contribution
Spiritual Integrity			
Understand and apply the Biblical stewardship principles to environmental issues	X		

Personal Resilience			
Develop practical skills marketable for employment.			X

Intellectual Pursuit			
Equip students to understand the interdisciplinary nature of environmental issues.		X	
Demonstrate the applicability of environmental sustainability with companies, government agencies, or private groups.			X
Understand and apply the Biblical stewardship principles to environmental issues.	X		
Develop practical skills marketable for employment.			X

Global Engagement			
Demonstrate the applicability of environmental sustainability with companies, government agencies, or private groups.			X
Understand and apply the Biblical stewardship principles to environmental issues.	X		

Bold Vision			
Demonstrate the applicability of environmental sustainability with companies, government agencies, or private groups.			X