

Syllabus for
BIO 150–Human Biology and Global Health
3.0 Credit Hours
Fall 2021

I. COURSE DESCRIPTION

This course is design to introduce students to the central principles of biology as well as the philosophy and principles of science in general. This course focuses on issues in human biology, genetics, infectious disease, global health, and bioethics. By the end of this course, students will be in a position to understand current advances and technologies in biology that are of relevance to all members of society, such as genetic testing and technology, stem cell research and cloning, reproductive technologies, and global health and infectious diseases. (BIO 150 credit does not apply toward the BIO major.)
Corequisite: BIO 150 Lab.

II. COURSE GOALS

This course is designed for nursing students, but would also be of interest to students in non-science disciplines as a general education science requirement. The course emphasizes the understanding and appropriate application of basic biological principles to many issues of science in society. The goal of the course is that this brief involvement with the philosophy, methods, findings and concepts of biology, and its intersecting 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 in society.

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. Demonstrate an understanding of the process of science, be able to solve problems using the scientific method, and be able to distinguish between science and pseudoscience.
- B. Demonstrate an understanding of the science necessary to discuss and integrate biological concepts in the analysis of problems and case studies.
- C. Demonstrate an understanding of the relationship between genetics and health and the specific mechanisms of heredity and reproduction.
- D. Develop familiarity with pathogens that cause human disease and suffering and describe the impact of the global disease burden.
- E. Apply the understanding of life science and their Christian worldview to engage current bioethical issues in society (genetic manipulation and genetic testing, etc.).
- F. Read science news with interest and understanding, as well as the ability to critique whether sound scientific and ethical research was used in the process.

IV. TEXTBOOKS AND OTHER LEARNING RESOURCES

Required Textbook

- OpenStax: Concepts of Biology ISBN-: 978-1938168116 (free online version available in pdf format and html-- <https://openstaxcollege.org/textbooks/concepts-of-biology/get>)

Last revision: Fall 2018/rb

- OpenStax:Microbiology ISBN-13: 978-1-938168-14-7 (free online version available in pdf format and html-- <https://openstax.org/details/books/microbiology>)
- Access to the internet for supplemental material in global health and infectious diseases (CDC, WHO, etc)

V. POLICIES AND PROCEDURES

A. University Policies and Procedures

- Students and faculty at Oral Roberts University must adhere to all laws addressing the ethical use of others' materials, whether it is in the form of print, electronic, video, multimedia, or computer software. Plagiarism and other forms of cheating involve both lying and stealing and are violations of ORU's Honor Code: "I will not cheat or plagiarize; I will do my own academic work and will not inappropriately collaborate with other students on assignments." Plagiarism is usually defined as copying someone else's ideas, words, or sentence structure and submitting them as one's own. Other forms of academic dishonesty include (but are not limited to) the following:
 - Submitting another's work as one's own or colluding with someone else and submitting that work as though it were his or hers;
 - Failing to meet group assignment or project requirements while claiming to have done so;
 - Failing to cite sources used in a paper;
 - Creating results for experiments, observations, interviews, or projects that were not done;
 - Receiving or giving unauthorized help on assignments.

By submitting an assignment in any form, the student gives permission for the assignment to be checked for plagiarism, either by submitting the work for electronic verification or by other means. Penalties for any of the above infractions may result in disciplinary action including failing the assignment or failing the course or expulsion from the University, as determined by department and University guidelines.
- Final exams cannot be given before their scheduled times. Students need to check the final exam schedule before planning return flights or other events at the end of the semester.
- Students are to be in compliance with University, school, and departmental policies regarding the Whole Person Assessment requirements. Students should consult the Whole Person Assessment handbooks for requirements regarding general education and the students' majors.
 - The penalty for not submitting electronically or for incorrectly submitting an artifact is a zero for that assignment.
 - By submitting an assignment, the student gives permission for the assignment to be assessed electronically.

B. Course Procedures

- 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

2. 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.
3. The student is allowed three absences for 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.
4. Students who miss class are responsible for finding out what they missed and arranging to makeup any possible outstanding work. All work must be made-up within a week. All quizzes and exams must be made up before the next scheduled class time.
5. Quizzes 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 makeup the quiz unless they have an administrative excuse**. The missed quiz must be made up before the next class meeting.
6. All assignments require individual effort unless indicated otherwise. Any evidence of plagiarism 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.
7. Whole Person Assessment Requirements
The student will read a current article on a Global Health crisis/ issue and prepare a written response to include a summary of main points, analysis of how science, Christianity, and they personally can contribute to the solution of the crisis.

VI. COURSE CALENDAR

WK	CHAPTER MATERIAL
1	Introduction to Biology and Bioethics: Healing and Medicine
2	Introduction to Biology—The Scientific Method and Human Research Ethics
3	Chemical Level of Organization: Organic Molecules
4	Digestive System and Nutrition— <i>Global Health Issues</i> : Diabetes and Obesity
5	Cellular Level of Organization— <i>Global Health Issues</i> : Cancer and Chromosomal Disorders
6	Early Human Development— <i>Global Health Issues</i> : Infertility and Reproductive Technology
7	DNA and Protein Synthesis
8	Genetic Inheritance— <i>Global Health Issues</i> : Genetic Diseases, Testing, and Ethical Issues
9	Introduction to Pathogens: Prokaryotes— <i>Global Health Issues</i> : Antibiotic Resistance
10	Introduction to Pathogens: Eukaryotes— <i>Global Health Issues</i> : END 7
11	Introduction to Pathogens: Acellular— <i>Global Health Issues</i> : Vaccination
12	Disease and Epidemiology Human Immune System
13	Major Global Health Issues—Current Events and Paper