Course Syllabus

BIO 101L ADV- Principles of Biology Laboratory

1 Credit hour

I. COURSE DESCRIPTION

Lab exercises, experiments, and audiovisual presentations involving cells, respiration, photosynthesis, classical and molecular genetics, protein synthesis, enzyme action, reproduction development, behavior, and ecology.

Corequisite: BIO 101 Principles of Biology Lecture

II. ACADEMIC MISSION

Oral Roberts University's academic mission is to transform students by the power of the Holy Spirit into whole, competent servant-leaders through liberal arts and professional education that is fully Christian. Within a Spirit-filled healing community, administration, faculty, and staff love and serve students by helping them grow in knowledge, skills, wisdom, character, and spirit. Student transformation is measured through the evaluation of student expression of University learning outcomes as demonstrated through the following outcomes.

1 Spiritual Integrity
2 Personal Resilience
3 Intellectual Pursuit
4 Global Engagement
5 Bold Vision

The last page of this syllabus, "COURSE INVENTORY for ORU's Course Objectives," indicates how this course supports ORU's academic mission and ORU's whole-person approach to learning outcomes.

III. PROGRAM OUTCOMES

This course supports the program outcomes of the General Education in Biology. An ORU graduate must acquire a skill set that enables him or her to successfully perform integrative tasks, including the following Program Outcomes this course supports, marked below in **the bold text**, and with an asterisk (*).

1. **Core Literacy**. Demonstrate a breadth of knowledge essential to a Spirit-empowered, classical liberal arts education through effective communication.*
2. Intercultural Knowledge and Engagement. Engage diverse cultures by integrating a Christian worldview with intercultural and historical knowledge.
3. Lifelong Wellness. Demonstrate knowledge and skills that promote healthy lifestyle choices to develop spiritual, mental, physical, and social wholeness.

4. **Global Issues, Problem-Solving, Critical Thinking, and Creativity**. Demonstrate problem-solving using critical thinking, creativity, collaboration, and ethical reasoning to address global issues.*

IV. COURSE GOALS

The laboratory is an opportunity for students to do science and personally experience some of the methods previously encountered only theoretically and passively. The laboratory is an excellent place for those who lack experience with the reality of the living world in which we function. Thus, many insights, concepts, and principles will become more apparent to students when they actually "see what they mean."

This course involves experimental and observational 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. Human Biology and Global Health Laboratory is a one-semester course designed for non-majors as the recommended life science course to accompany BIO 101 for the general education requirement.

V. COURSE OBJECTIVES

After successfully completing this course, you should be able to:

1. Communicate using terms related to the principles of life common to both plant and animal science.
2. Describe and demonstrate the scientific method in problem-solving situations as they occur in laboratory exercises.
3. Describe the various structures and function of each level of organization as demonstrated in laboratory presentations.
4. Define biological problems and questions, design experiments, and analyze and interpret experimental data.
5. Relate biology to current events (e.g., climate change, cloning, genetic testing, antibiotic resistance) that are largely scientific in nature.

VI. TEXTBOOK AND OTHER LEARNING RESOURCES

Before you purchase your required textbook(s), click on the ORU Bookstore link to verify whether digital texts are provided as part of your Follett ACCESS course fee. http://www.bkstr.com/oralrobertsstore/home

Required Materials

Textbook(s):

Fowler, Samantha, et al. *Concepts of Biology.* OpenStax, Rice University, 2016. [Print ISBN: 9781938168116; Digital ISBN: 9781947172036]

**Additional information available in the D2L course.*

Other required materials:
Food, Inc. Magnolia Home Entertainment, 2009. [Blu-Ray UPC: 00876964002608; DVD UPC: 08876964002165]

**See D2L course for detailed instructions and specific supplies necessary for experiments.*

Optional Materials

Textbooks:
None.

Other:
None.

VII. POLICIES AND PROCEDURES

A. University Policies and Procedures

1. **Plagiarism:** The ORU Catalog explicitly addresses the issue of plagiarism. Make sure you know ORU's policy on plagiarism and what is considered plagiarism.
2. **Privacy:** By law, students are entitled to privacy regarding their records. The Family Educational Rights and Privacy Act of 1974 (FERPA), as amended and available in the ORU University Catalog, sets forth requirements designed to protect the privacy of student education records. The law governs access to records maintained by educational institutions and the release of information from those records.
3. **Whole Person Assessment Requirements:**
   Specify which, if any, Whole Person Assessment requirements there are for this course.
   None for this course.

B. School and/or Department Policies and Procedures

1. **Participation:** Participation in each online class through discussion forums, assignments, and all other course activities count as your attendance in the course. Lack of participation can reduce a student's grade or deny credit for the course.
2. **Class Assignments**
   a. Students need to have the appropriate textbooks, course materials, and other supplies as designated by the professor.
   b. Professors may refuse to accept an assignment if it has inappropriate content, does not meet the assignment's criteria (e.g., not typed, incorrectly documented), is incomplete, is suspected of plagiarism, or is turned in too late.
3. **Late Work**
   a. The student is responsible for obtaining class assignments and materials, and all work is expected to be completed as scheduled. The professor may not accept late work, or it may result in a lower grade. Computer or Internet malfunctions do not constitute an excuse for late work; students should have their work prepared in time to ensure that they can get it completed, edited, and proofread prior to the instructor's due date. These responsibilities assist the student in professional development.
   b. Generally, assignments missed from a serious sickness or family crises can be made up and the instructor should be notified as soon as possible to reach an agreement on due dates and possible penalties. Each instructor has his or her own late-work policy. Instructors use their own judgment in accepting late work.
4. **Incompletes**
   On rare occasions, the grade of "I" may be given for work that is incomplete at the time grades are given. It is given only after the instructor and the department chair or college dean approve a petition submitted by the student that his or her work is incomplete for good cause. Good cause typically consists of a catastrophic event in which the student is prevented from completing the course requirements. It is the responsibility of the student to initiate the petition through http://petitions.oru.edu, make up any incomplete work, and ask the instructor to submit a grade change to the registrar. If the work is not completed by the end of the subsequent session, the incomplete will automatically convert to an "F." For graduating seniors, the degree will be awarded in the term that the student completes his or her course work, not the final term of enrollment.
5. **Citations**
   Textbook(s) and materials for the course are listed using standard citation style (APA, MLA, Chicago, Turabian, etc.). Since other styles may be used in disciplines other than the one used in this course or school, the ORU Citing and Documenting Sources pages offer a

collection of styles students may choose from. This course asks that students be consistent in whatever style they use throughout the course.

C. Online Programs Policies and Procedures

1. **Communicating with your Instructor:** All email communication between students and faculty will be through their ORU.edu emails.
2. **Learning Community:** Online learning community is established through active participation in the threaded weekly discussions. The mutual exchange of ideas, information, and experiences is an essential part of the learning process, and students are encouraged to use the discussion forum as virtual classroom platform.
3. **ADA and Students with Disabilities:**
   - Click here (http://www.brightspace.com/about/accessibility/) to view Desire2Learn's "Accessibility Resources for Students with Disabilities."
   - Students requiring Disability Services from ORU, https://goo.gl/dLHnnM
   - Desire2Learn (D2L) Accessibility Guidelines and Checklist: https://goo.gl/Ck4RwY
   - D2L Accessibility Policy: https://www.d2l.com/accessibility/
4. **Useful Links for Online Students:**
   - Student Learning Glossary
   - Library: http://library.oru.edu.
   - D2L Helpdesk: d2lhelp@oru.edu
   - I.T. Student Helpdesk: studenthelpdesk@oru.edu
   - Netiquette and Online Discussions: https://goo.gl/f744AY
   - Contact the University: please fill out this online form. Please first contact your instructor for assistance with any matter specific to the course.

D. Course Policies and Procedures

1. **Evaluation Procedures:** The final grade will be based on 7 projects. The weight of each item is included in the Course Calendar. Extra credit items are not offered in this course

Grade Weight	Category
100%	Projects

2. **Evaluation Procedure:**
   A=90-100% B=80-89% C=70-79% D=60-69% F=59% and below.
3. **Other Policies and/or Procedures**
   None

VIII. COURSE CALENDAR

The Course Calendar shows the specific learning activities and assessments for this course, along with their respective grade weights. The far-right column lists the Course Objectives (CO) that support the corresponding Assessment in column 2. *****This Advantage course is structured in 7 Units. Each Unit lasts 2 weeks, or 14 days. Unless otherwise noted, the Projects and Quizzes are due on Day 14, at the end of each Unit, while the Forums are due at the end of Day 7 or the end of week 1.***** Further descriptions for activities and assessments are in their respective weeks in D2L. † indicates this is a faith integration item tracked by the program. **Lab assignments consist of environment field projects:*

Unit 1	**Scientific Method**	**Hours**	**Weight**	**CO**
	Read/View/Listen	2.5	--	--
	Project 1: Scientific Method Case Studies	3.5	14%	2
Unit 2	**Food, Inc.**	**Hours**	**Weight**	**CO**
	Read/View/Listen	2.5		
	Project 2: Food, Inc. Response †	3.5	14%	5
Unit 3	**DNA and Genetics**	**Hours**	**Weight**	**CO**
	Read/View/Listen	.5		
	Project 3: DNA Extraction	5	14%	1, 2, 4
Unit 4	**Taste Sensitivity Lab**	**Hours**	**Weight**	**CO**
	Read/View/Listen	1	--	--
	Project 4: Taste Sensitivity Experiment	4	14%	1, 2, 4
Unit 5	**Yeast Respiration**	**Hours**	**Weight**	**CO**
	Read/View/Listen	1	--	--
	Project 5: Yeast & Anaerobic Fermentation	5	14%	1, 3, 4
Unit 6	**Natural Area/Zoo/Aquarium Experience**	**Hours**	**Weight**	**CO**
	Read/View/Listen	1	--	--
	Project 6: Natural Area/Zoo/Aquarium Experience Outline	5	14%	1, 3
Unit 7	**Natural Area/Zoo/Aquarium Project**	**Hours**	**Weight**	**CO**
	Read/View/Listen	1	--	--
	Project 7: Natural Area/Zoo/Aquarium Report	5	16%	1, 3
Course Total	Total estimated hours based upon an average of 6 hours per week for 7 weeks	40.5	100%	

IX. COURSE INVENTORY

LBIO 101L ADV

This inventory indicates the extent to which this Course's Objectives contribute to the Outcomes of its degree Program, and ultimately to one or more of ORU's University Outcomes (in grey 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	Moderate	Minimal
1. Spiritual Integrity			
Program Outcome 4. GLOBAL ISSUES, PROBLEM-SOLVING, CRITICAL THINKING, AND CREATIVITY: Demonstrate problem-solving using critical thinking, creativity, collaboration, and ethical reasoning to address global issues.			**X**
• Course Objective 5: Relate biology to current events (e.g., climate change, cloning, genetic testing, antibiotic resistance) that are largely scientific in nature.			**X**
2. Personal Resilience			
3. Intellectual Pursuit			
Program Outcome 1. CORE LITERACY: Have a breadth of knowledge essential to a classical Spirit-empowered liberal arts education.		**X**	
• Course Objective 1: Communicate using terms related to the principles of life common to both plant and animal science.		**X**	
• Course Objective 3: Describe the various structures and function of each level of organization as demonstrated in laboratory presentations		**X**	
• Course Objective 4: Define biological problems and questions, design experiments, and analyze and interpret experimental data.		**X**	
Program Outcome 4. GLOBAL ISSUES, PROBLEM-SOLVING, CRITICAL THINKING, AND CREATIVITY: Demonstrate problem-solving using critical thinking, creativity, collaboration, and ethical reasoning to address global issues.		**X**	
• Course Objective 2: Describe and demonstrate the scientific method in problem-solving situations as they occur in laboratory exercises		**X**	
• Course Objective 4: Define biological problems and questions, design experiments, and analyze and interpret experimental data.		**X**	
• Course Objective 5: Relate biology to current events (e.g., climate change, cloning, genetic testing, antibiotic resistance) that are largely scientific in nature.		**X**	
4. Global Engagement			
5. Bold Vision			
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