Syllabus for
BIO 112H—Introductory Biology II Honors Laboratory
1.0 Credit Hour
Spring 2012

I. COURSE DESCRIPTION

One 3-hour lab session each week devoted to the comparison, manipulation, identification, and dissection of selected specimens representative of different plant or animal groups.
Corequisite: BIO 112 Lecture
Lab Fee: $25.

Honors Distinctives: Special lab and field activities (see calendar) broaden the experiences of students.

II. COURSE GOALS

Biology 112 lab is one of four courses (the others are BIO 111 lecture, BIO 111 lab, and BIO 112 lecture) comprising a sequence designed to serve as an introduction to the study of biology. This series provides the student with the basic language and knowledge foundation upon which to build his or her major leading to a career in biological or preprofessional health-related fields. These courses are prerequisites to all other biology courses from which biology and preprofessional health career majors make their choices—depending upon individual goals, interests, and departmental requirements.

III. STUDENT LEARNING OUTCOMES FOR THIS COURSE

A. Terminal Objectives
As a result of successfully completing this course, the student will be able to do the following:
1. Outline the classification of living organisms upon which the study of the main principles of life is based.
2. Converse (both orally and in writing) in the language of biology.
3. Evaluate the phylogenetic and anatomical relationships of various groups of plants and animals to themselves and to each other.
4. Demonstrate proficiency in using the microscope and other basic laboratory equipment.
5. Demonstrate proficiency in dissection of macroscopic organisms.
6. Demonstrate proficiency in making careful scientific observation.
7. Identify and relate anatomically and physiologically the organ systems of a representative mammal.
8. Compare and contrast modes of reproduction in the various groups of plants and animals.

B. Objectives for Students in Teacher Preparation Programs
The Teacher Preparation Program meets the competency-based requirements established by the Oklahoma Commission on Teacher Preparation. This course enables the student to meet the following competencies: Subject Competencies (SC) 7.b.3, 7.b.4, and 7.b.9.
SC 7.b.3: Is able to teach with a broad understanding of all content areas and understand the interaction between the sciences and the process skills as it relates to Life Science Content: Regulation and behavior.

SC 7.b.4: Is able to teach with a broad understanding of all content areas and understand the interaction between the sciences and the process skills as it relates to Life Science Content: Population and ecosystem.

SC 7.b.9: Is able to teach with a broad understanding of all content areas and understand the interaction between the sciences and the process skills as it relates to Life Science Content: The interdependence of organisms.

IV. TEXTBOOKS AND OTHER LEARNING RESOURCES

A. Required Textbook

Vodopich, D.S. and Moore, R. 2011. Biology Laboratory Manual. 9th ed. McGraw-Hill Higher Education. ISBN 9780073383064.

B. Optional Textbooks and/or Reading Material

Van de Graaff. K.M. & Crawley, J.L. 2009. A Photographic Atlas for the Biology Laboratory. 6th ed. Morton Publishing Company. ISBN 9780895828033.

Current biology literature as available and appropriate from the library, websites, etc., as directed by the instructor.

V. POLICIES AND PROCEDURES

A. University Policies and Procedures

1. Attendance at each class or laboratory is mandatory at Oral Roberts University. Excessive absences can reduce a student's grade or deny credit for the course.
2. Students taking a late exam because of an unauthorized absence are charged a late exam fee.
3. 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:
   a. Submitting another's work as one's own or colluding with someone else and submitting that work as though it were his or hers;
   b. Failing to meet group assignment or project requirements while claiming to have done so;
   c. Failing to cite sources used in a paper;
   d. Creating results for experiments, observations, interviews, or projects that were not done;
   e. 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.

4. 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.
5. 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.
   a. The penalty for not submitting electronically or for incorrectly submitting an artifact is a zero for that assignment.
   b. By submitting an assignment, the student gives permission for the assignment to be assessed electronically.

B. Course Policies and/or Procedures

1. Evaluation Procedures

   a. Grading System

Completed laboratory participation, 25 points each for 12 weeks	300
Written quizzes at the beginning of each of 8 weeks, 25/week	200*
Two Laboratory Practicals: 150 points each	300
Wetlands project participation (field and lab activities)	50
Wetlands project Powerpoint presentation	75
Wetlands project written report	75
TOTAL	1,000

*= *activity reports may replace some quizzes*

   b. Final Grade Evaluation

≥90%:	900-1000 points	A
80-89%:	800-899 points	B
70-79%:	700-799 points	C
60-69%:	600-699 points	D
≤59%:	599 or less	F

2. Whole Person Assessment Requirements

   The Wetland report and presentation will be used to satisfy outcomes 3 and 6 for the departmental Whole Person Assessment.

3. Other Policies and/or Procedures

   a. Makeups in freshman biology labs are not possible once the lab has been completed, supplies are discarded, and equipment stored away for the semester. Therefore, the following represents the policy for absences from freshman biology labs.
      1. Excused absences are awarded for academically excused absences, and at the discretion of the instructor for legitimate reasons such as serious, severe illness, or emergency situations, which in the opinion of the instructor could not have been avoided by the student.
      2. It is the responsibility of the **student** to contact the instructor. Advanced arrangements are always best, but if not before, then as soon as possible after the absence. Students need to come to another scheduled lab **that week** if at all possible. Makeups can sometimes be arranged if the lab remains "set up," although that seldom occurs. Otherwise, an "E" (excused absence) will be assigned for that lab (both attendance points and for the quiz on

that lab information). The "E" implies the attendance and quiz scores missed because of the absence will not count for or against the student's final grade. On the other hand, it **does not excuse** the student from knowing the information missed by the time the final lab exam is administered. The missed quiz(zes) may be made up with no penalty assessed if agreed to by the instructor and student.

3. Zeros are assigned for unexcused absences from labs, and the student is **not excused** for the information covered during the absence(s). Zeros will be assigned for quizzes missed. If the instructor agrees to do so, unexcused late "makeup" quizzes may be administered, but with a 30 percent penalty for the first time, 40 percent for the second time, etc.
4. **More than three (3) absences** during a semester result in an "F" being assigned for a course grade. Incompletes (I's) are **not** an option!

b. Honor Code

1. The student has a great deal of flexibility and freedom in this course.
2. The grade the student earns from the course may or may not reflect accurately how much he or she has really learned, but it is the best measuring tool education possesses at the present time that is universally accepted and recognized. Grades earned, over the long haul, are less important (except for graduate and professional schools) than true learning. Therefore, since learning is the result of individual effort, individualized work is expected.
3. Academic honesty includes the following:
   a. Doing one's part in maintaining exam security.
   b. Being prompt and dependable for scheduled lab work.
   c. Not allowing anyone to forge initials on lab cards.
   d. Being honest concerning lab attendance.
4. Dishonesty in any of the above specified points is in violation of the Honor Code and could incur the penalties as specified in the Student Handbook and/or department's statement.

VI. COURSE CALENDAR

WEEK	**DATE**	**TOPIC**	**TEXT** (Ch. in Atlas/Ex. in Vodopich)
	Tues		
1	Jan 10	Classification Systems Start Bacteria Experiments	Laboratory Handout; Ch. 3; Ex. 24
2*	Jan 17	Eubacteria, Cyanobacteria and Protistan Algae (Activity #1)	Ch. 4; Ex. 25
3*	Jan 24	Fungi, Slime Molds, and Lichens Mosses, Liverworts and Hornworts	Ch. 5-6; Ex. 27-28

WEEK	DATE	TOPIC	TEXT (Ch. in Atlas/Ex. in Vodopich)
4*	Jan 31	Vascular Plants (ferns, conifers, angiosperms): Life Cycles (Activity #2)	Ch. 6; Ex. 29-31
5*	Feb. 7	Vascular Plants: Structure	Ch. 6; Ex. 31,32
6	Feb 14	**LAB PRACTICAL I** (75 mins) Animal Protists (75 mins)	 Ch. 4; Ex. 26
7*	Feb 21	Sponges, Cnidarians, Flatworms, Roundworms	Ch. 7; Ex. 36,37
8*	Feb 28	Annelids and Molluscs	Ch. 7; Ex. 38
9*	Mar 6	Arthropods (Activity #3)	Ch. 7; Ex. 39
		SPRING BREAK	
10*	Mar 20	Echinoderms and Chordates (Activity #4)	Ch. 7; Ex. 40
11	Mar 27	**LAB PRACTICAL II** (75 mins) Ecological Field Trip Research Team Organization (25 mins)	 Laboratory Instructions and Handouts
12	Apr 3	Creek Turnpike Wetlands The Pond Ecosystem	Field Trip
13	Apr 10	Creek Turnpike Wetlands The Pond Ecosystem	Lab analysis
14	Apr 17	Creek Turnpike Wetlands The Pond Ecosystem	Lab analysis, preparation for report and presentation
15	Apr 24	The Wetlands Project Group Reports Each individual will participate orally in the presentations. Each group will submit a written report with figures, tables, and photographs.	Each group will give an oral PowerPoint presentation and submit a written report with figures, tables, and photographs.

*Weekly quiz will be given.

Activity #1 = Fred Creek water quality study; Activity #2 = Taxonomic identification of conifers on ORU campus; Activity #3 = Survey of aquatic macroinvertebrates in Fred Creek; Activity #4 = Oklahoma Aquarium tour.

Course Inventory for ORU's Student Learning Outcomes

Introductory Biology II Honors Lab – BIO 112H
Spring 2012

This course contributes to the ORU student learning 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.
No Contribution – Does not address the outcome.

The Student Learning Glossary at http://ir.oru.edu/doc/glossary.pdf defines each outcome and each of the proficiencies/capacities.

OUTCOMES & Proficiencies/Capacities	Significant Contribution	Moderate Contribution	Minimal Contribution	No Contribution
1 **Outcome #1 – Spiritually Alive** Proficiencies/Capacities				
1A Biblical knowledge			X	
1B Sensitivity to the Holy Spirit			X	
1C Evangelistic capability			X	
1D Ethical behavior			X	
2 **Outcome #2 – Intellectually Alert** Proficiencies/Capacities				
2A Critical thinking		X		
2B Information literacy		X		
2C Global & historical perspectives		X		
2D Aesthetic appreciation			X	
2E Intellectual creativity		X		
3 **Outcome #3 – Physically Disciplined** Proficiencies/Capacities				
3A Healthy lifestyle				X
3B Physically disciplined lifestyle				X
4 **Outcome #4 – Socially Adept** Proficiencies/Capacities				
4A Communication skills			X	
4B Interpersonal skills			X	
4C Appreciation of cultural & linguistic differences			X	
4D Responsible citizenship			X	
4E Leadership capacity			X	