Syllabus for
**BIO 101—Principles of Biology Laboratory Online**
1.0 Credit Hour
Summer 2014

## 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.
Corerequisites: BIO 101 Lecture
Lab Fee: $25.00

## II. COURSE GOALS

This course provides direct, hands-on experience with biological experimentation and discovery of plant and animal life in a realistic environmental perspective. Experiments will emphasize scientific processes (methods). Discoveries (explorations) in local ecosystems will develop an appreciation for the beauty and complexity of our biological world. They will also equip you for informed stewardship in your community.

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."

## 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. Design and accurately conduct sound scientific experiments.

B. Observe, identify, and find supporting information on a wide variety of plants and animals in their immediate environment.

C. Experience and understand the reasons for variability among living organisms of the same and different kinds.

D. Function as a scientifically literate citizen more effectively caring for our organisms and environment with greater understanding.

E. Accurately interpret experimental results and natural ecosystems.

## IV. TEXTBOOKS AND OTHER LEARNING RESOURCES

A. Miscellaneous store-bought and household equipment and materials, including camera.

## 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 Procedures

1. Grading System

a. The final grade for this course will be based on the total of the individual assignments and the final exam.

| | |
|---|---|
| Short Term Experiments | – 3 x 50 pts each = 150 |
| Long Term Experiments | – 3 x 50 pts each = 150 |
| Habitat Studies | – 3 x 50 points each = 150 |
| | Final Exam 50 |
| | **Total 500** |

2. Absences

a. Excused

(1) Seldom is there a legitimate reason for failure to attend an assigned laboratory period or complete assignments. Absences may be excused but only for legitimate reasons. Legitimate reasons include administrative excuses and grave illness.

(2) It is the student's responsibility to contact the lab instructor immediately concerning absences and arranges to make up the work that week. A written explanation is mandatory. The instructor then determines whether or not the absence is excused and, if applicable, make arrangements for makeup. The student should contact the instructor as soon as any anticipated absence is known. This advance planning makes makeup much easier and improves faculty-student relations.

b. Unexcused

(1) Unexcused absences result in lowering of the semester average. Examples of unexcused absences include early departure and late return from vacations.

(2) There are no free cuts in lab! More than three lab absences, whether excused or unexcused, result in an "F" or an "I" (incomplete) for the course, depending upon completeness of other work. "I's" must be satisfactorily completed the following semester by completing the missed labs. Every unexcused lab absence will lower the semester average five percent (5%).

3. Whole Person Assessment Requirements

The long term experiment - Sunflower seed germination exercise satisfies Whole Person Assessment requirement 2A – Critical Thinking.

VI. COURSE CALENDAR

Lab assignments consist of short experiments, long experiments and habitat studies:

| Week #: | Assignments: |
|---|---|
| 1 | 1. Short Term Experiment 1 |
| 2 | 1. Start Seed Germination Experiment (LT2)<br>2. Habitat 1 |
| 3 | 1. Short Term Experiment 2<br>2. Long Term Experiment 1 |
| 4 | 1. LT2 Seed Germination Data Due –<br>2. Habitat 2 |
| 5 | 1. Short Term Experiment 3 due<br>2. Long Term Experiment 2 (Seed Germ) |
| 6 | 1. Habitat 3 |
| 7 | 1. Long Term Experiment 3 |

**Course Inventory for ORU's Student Learning Outcomes**

**Principles of Biology Laboratory – BIO 101**
**Summer 2014**

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 | |