

Angelina College
Science and Mathematics Division
BIOL 1409 Biology for Non-Science Majors II lab – Spring 2019 (T)
Instructional Syllabus

I. BASIC COURSE INFORMATION

A. Course Description

This course will provide a survey of biological principles with an emphasis on humans, including evolution, ecology, plant and animal diversity, and physiology.

Intended Audience

This is a laboratory-based course designed for non-science majors.

B. Instructor

Instructor's Name: Jessica Heppard

Office Location: S109

Office Hours: M & R 9:30 – 11:30 am, W 9:30 – 10:30 am; or by appointment

Office Phone: 936-633-5461

E-mail Address: jheppard@angelina.edu

II. INTENDED STUDENT OUTCOMES:

A. Core Objectives Required for this Course

1. **Critical Thinking:** To include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.
2. **Communication:** To include effective development, interpretation and expression of ideas through written, oral and visual communication.
3. **Empirical and Quantitative Skills:** To include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.
4. **Teamwork:** To include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.

B. Upon successful completion of this course, students will:

1. Describe modern evolutionary synthesis, natural selection, population genetics, micro and macroevolution, and speciation.
2. Describe phylogenetic relationships and classification schemes.
3. Identify the major phyla of life with an emphasis on plants and animals, including the basis for classification, structural and physiological adaptations, evolutionary history, and ecological significance.
4. Describe basic animal physiology and homeostasis as maintained by organ systems.
5. Compare different sexual and asexual life cycles noting their adaptive advantages.
6. Illustrate the relationship between major geologic change, extinctions, and evolutionary trends.
7. Apply scientific reasoning to investigate questions and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data.
8. Use critical thinking and scientific problem-solving to make informed decisions in the laboratory.
9. Communicate effectively the results of scientific investigations.

Note: All Learning outcomes will be assessed through exams, quizzes, homework assignments & laboratory exercises.

III. ASSESSMENT MEASURES:

A. Assessments for the Core Objectives

1. **Critical thinking:** Critical thinking skills will be assessed using embedded test questions focusing on analysis, synthesis and evaluation of biological phenomena.
2. **Communication:** Communication skills will be assessed using lab reports and embedded test questions focusing on best practices in written, visual, and oral communication.
3. **Empirical and Quantitative Skills:** Empirical and quantitative skills will be introduced and assessed using embedded test questions focusing on calculations in genetics and population dynamics.
4. **Teamwork:** Teamwork skills will be assessed using teamwork skills in lab exercises as well as embedded test questions focusing on best practices.

B. Assessments for Course Learning Outcomes

1. Students will describe modern evolutionary synthesis, natural selection, population genetics, micro and macroevolution, and speciation with emphasis on evidence from extant taxa by answering multiple choice questions.
2. Students will distinguish between phylogenetic relationships and classification schemes and will develop and use cladograms.
3. Students will identify the major phyla of life with an emphasis on plants and animals, including the basis or classification, structural and physiological adaptations, evolutionary history, and ecological significance by answering multiple-choice questions.
4. Students will describe basic animal physiology and homeostasis as maintained by organ systems. Students will be able to relate the function of organs and organ systems to maintaining homeostasis. These will be assessed with multiple-choice questions.
5. Students will compare different sexual and asexual life cycles noting their adaptive advantages. Students will compare and contrast reproduction and life cycles of the major groups of plants, animals, and fungi by answering multiple-choice questions.
6. Students will illustrate the relationship between major geologic change, extinctions, and evolutionary trends and will be able to relate the development of key derived features in extant taxa to similar features in extinct organisms by answering multiple-choice questions.
7. Students will apply scientific reasoning to investigate questions in the laboratory and in analysis of real-world issues. Students will utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data while performing lab experiments and exercises.
8. Students will use critical thinking and scientific problem solving to make informed decisions in the laboratory as evidenced by developing appropriate, responsible research plans. These will be assessed with lab exams and reports.
9. Students will communicate effectively the results of scientific investigations in written reports, which will be assessed using a rubric.

IV. INSTRUCTIONAL PROCEDURES:

A. Methodologies common to all sections

This course will be taught using a combination of lectures and laboratory exercises that complement and supplement lecture material. Audio-visual materials, models, and dissection of specimens will be employed to enhance lecture and laboratory presentations.

V. COURSE REQUIREMENTS AND POLICIES:

A. Required Textbooks, Materials, and Equipment:

1. Introductory Biology: A Laboratory Exploration of Life. Dr. Stacy Pfluger. Vol. 2 (Kendal Hunt) (ISBN 978-1-5249-1312-0)
2. Access to blackboard (<https://angelina.blackboard.com/webapps/login/>). Obtaining a copy of the course **Lecture Notes** is highly recommended by the instructor for success in the classroom. Course lecture notes are available to print from the BIO 1409 blackboard site.
3. Scantrons for exams (Form 882-E)

B. Course Policies – (This course conforms to the policies of Angelina College as stated in the Angelina College Handbook.)

1. **Educational Accommodations** – If you have a disability (as cited in Section 504 of the Rehabilitation Act of 1973 or Title II of the Americans with Disabilities Act of 1990) that may affect your participation in this class, you may fill out the Educational Accommodations application within your AC Portal, under the “Student Services” tab. A Student Success team member will contact you once the application is received. At a post-secondary institution, you must self-identify as a person with a disability in order to receive services; for questions regarding the application process you can visit the Office of Student Success and Inclusion in the Student Center (Room 200) or email access@angelina.edu. To report any complaints related to accommodations, you should contact Annie Allen, Director of Student Success & Inclusion, in Room 200 of the Student Center. You may also contact Ms. Allen by calling (936) 633-4509 or by emailing aallen@angelina.edu. To report discrimination of any type, contact Steve Hudman, Dean of Student Affairs, at (936) 633-5292 or shudman@angelina.edu.

2. **Attendance:** Attendance is required as per Angelina College Policy and will be recorded every day. Any student with three (3) consecutive absences or four (4) cumulative absences may be dropped from the class. Records will be turned in to the academic dean at the end of the semester. Do not assume that non-attendance in class will always result in an instructor drop. **You must officially drop a class or risk receiving an F;** this is official Angelina College Policy.

C. Policies Established by the Instructor:

STUDENT CONDUCT

A positive environment for learning will be maintained by students being courteous to each other and to the instructor.

- Arrive in class on time and do not prepare to leave before class is over, unless special arrangements have been made prior to class with the instructor.
- No eating in class.
- Cell phones should be on “vibrate only” (silent mode) or turned off.
- Cheating on tests is not tolerated as per Angelina College policy and may result in expulsion from the course. Plagiarism is not tolerated and will result in a zero for any assignment in which it is detected.
- *If a student does not attend a class, it is the student’s responsibility to contact the instructor for missed material or information.*
- There will be no make-up exams; however, the score on the comprehensive final exam may replace your lowest test grade.
- Grades on an assignment may be appealed up to one week after a grade is issued.

TEST REFLECTION

If a student earns less than a C (> 70) on an exam (excluding the final), they may make arrangements to meet with the instructor and complete a test reflection worksheet to evaluate what questions were missed and how to improve future test preparation. This will result in up to 5 points added to their test grade, with a final score of no more than a 70.

CONTACTING THE INSTRUCTOR

Emails to the instructor should be professional and should be made from the student’s Angelina College email. It is suggested they take the following format:

Dear (Instructor’s name),

My name is (blank) and I am in your (BIOL #####) class, section (#). (Sentence describing your concern or reason for writing.) (Sentence with your question or the outcome you are seeking [to meet during office hours, reschedule a quiz, etc.]

(Closing),

(Your full name)

VI. **COURSE CONTENT:**

Lab content and schedule

Week	Lab
1 01/15	Introduction; Safety; Scientific Method (1)
2 01/22	Microscopy (2)
3 01/29	Ecology (3)
4 02/05	Histology (4)
5 02/12	Evolution and Natural Selection (5)
6 02/19	Classification (6)
7 02/26	Prokaryotes, Protists, and Fungi (7)
8 03/05	Midterm Exam
9 03/12	SPRING BREAK
10 03/19	Plant Diversity (8); Plant Anatomy (9)
11 03/26	Invertebrate Anatomy (10)
12 04/02	Skeletal and Muscular Systems (11)
13 04/09	Respiratory, Cardiovascular, & Digestive Systems (12)
14 04/16	Urinary and Reproductive Systems (13)
15 04/23	Nervous System (14)
16 04/30	Final Exam

Note: The last day to drop with a "W" is April 1, 2019.

VII. EVALUATION AND GRADING:

A. Grading Criteria:

Lecture grades will be determined by the total number of points earned from the possible points available. The lecture portion of the course is worth 2/3 of the total course grade. The lab portion of the course is worth 1/3 of the total course grade. Course grades will be determined using the following guidelines:

Combined scores from lecture and laboratory constitute the final grade in the course:

Lecture

4 Lecture Exams = 100 points each
Homework assignments = 100 points total
Comprehensive Final = 100 points
600 points

Lab

2 Lab Exams = 100 points each
Lab Quizzes/Homework = 100 points total (quizzes are averaged to reach this total)
300 points

Course average will be determined according to the following:

To calculate your course grade, use the following:

Percentage of points from lecture x 0.67 = _____

Percentage of points from lab x 0.33 = _____

Sum of above = _____ = course grade

B. Determination of Grade (*assignment of letter grades*)

Letter grades will be assigned based on the course grade as calculated above.

A = 90 - 100 points

B = 80 - 89 points

C = 70 - 79 points

D = 60 - 69 points

F = 59 points

- C. **Lecture Exams:** There will be four lecture exams (worth 100 points each) that will be given as shown on the class schedule. These four exams include multiple-choice, short answer questions, and/or "essay". The final exam is worth 100 points and will be 100% comprehensive.
- D. **Lab Exams:** There will be two lab exams (worth 100 points each) that will be given as shown on the class schedule. Lab exam questions will be fill- in-the-blank and may also include multiple-choice and short-answer questions.
- E. **Quizzes/Homework:** A series of quizzes will be given for lecture and lab. The lecture quizzes are worth a possible 100 points/one exam grade for lecture, and a possible 100 points/one exam grade for lab. One low lecture quiz grade and one low lab quiz grade for the semester will be dropped. Other assignments, such as assessments, will be completed as homework, and will be calculated into the quizzes/homework average.
THERE WILL BE NO MAKE-UPS FOR MISSED QUIZZES.

VIII. SYLLABUS MODIFICATION:

The instructor may modify the provisions of the syllabus to meet individual class needs by informing the class in advance as to the changes being made.