Online Biology Lab Planning

From THECB ACGM (accessed 28 Sept 2017 http://www.thecb.state.tx.us/AAR/UndergraduateEd/WorkforceEd/acgm.htm):

BIOL 1109 Biology for Non-Science Majors Laboratory II (lab)
This laboratory-based course accompanies BIOL 1309, Biology for Non-Science Majors II. Laboratory activities will reinforce a survey of biological principles with an emphasis on humans, including evolution, ecology, plant and animal diversity, and physiology.

Course Addition Proposal - BIOL 1109

Course Title: BIOL 1109 Biology for Non-Science Majors Laboratory II (lab)

Course Description: Laboratory activities will reinforce a survey of biological principles with an emphasis on humans, including evolution, ecology, plant and animal diversity, and physiology.

Justification:
Texas colleges (http://www.thecb.state.tx.us/apps/tcc/) require only 6 credit hours of science to meet "Core Curriculum" requirements. Angelo State University graduation requirements require 8 credit hours of science. Transfer students who have met the "Core" requirements may be lacking the additional 2 hours of science credit required to graduate. Offering a stand-alone lab course provides an opportunity for this population of students to complete their science requirements here at ASU. Developing this course for online delivery reaches an addition population of completely online (distance learning) students, particularly Security Studies majors.

Offering the labs as separate 1 hour credits will potentially benefit a greater number of transfer students who have taken the 1308 or 1309 lectures at different Texas institutions. This also provides scaffolding for potentially offering completely online non-majors biology lecture courses (BIOL 1308, BIOL 1309).

LIFE AND PHYSICAL SCIENCES
STUDENT LEARNING OUTCOME ALIGNMENT FORM
Course Prefix/Number: BIOL 1109
Course Title: Biology for Non-Science Majors Laboratory II
Course Description: Laboratory activities will reinforce a survey of biological principles with an emphasis on humans, including evolution, ecology, plant and animal diversity, and physiology.
Prerequisite: NA

Foundational Component Area: Life and Physical Sciences. Courses in this category focus on describing, explaining, and predicting natural phenomena using the scientific method. Courses involve the understanding of interactions among natural phenomena and the implications of scientific principles on the physical world and on human experiences.

*Choose at least one Core SLO from the Core Objective.

Core Objective	Core SLO	Course SLO	General Learning Activities	Assessment Method
Critical Thinking* choose 1 of 2	CT1: Gather, analyze, evaluate, and synthesize information relevant to a question or issue.	Students will gather, analyze, interpret and evaluate data.	Students will conduct experiments in the lab, gather data and then analyze their results.	Students will be assessed using a rubric on their analysis and conclusions based upon their results.
Communication* choose 1 of 3	CS1: Develop, interpret, and express ideas through effective written communication.	Students will communicate information via written means on practical exams, projects, and lab activities.	Students will conduct lab experiments and communicate their findings in writing to each other and their instructor	Students will be assessed using a rubric on their analysis and conclusions based upon their results .
Empirical & Quantitative Skills;	EQS1: Manipulate and analyze numerical data and arrive at an informed conclusion.	Students will collect and analyze quantitative data	Students will take measurements as part of a lab experiment. They will analyze their data and generate conclusions.	Students will be assessed on their analysis and conclusions using a grading rubric and quiz questions.
	EQS2: Manipulate and analyze observable facts and arrive at an informed conclusion.	Students will make observations to test a hypothesis and generate conclusions based on their observations .	Students will make directed observations, gather data and then analyze their results.	Students will be assessed on their analysis and conclusions based upon their results and answer quiz questions.
Teamwork* choose 1 of 2	TW2: Work effectively with others to support and accomplish a shared goal.	Students will work together on applied learning activities and	Students will conduct experiments in the lab in groups, gather data and	Students will be assessed using peer evaluations or embedded questions on

		collaborate with one another to support course goals.	then analyze their shared results.	their functioning as a team. .

BIOLOGY 1109 –

Biology for Non-Science Majors Laboratory II

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About This Course:

Your life relies on a diversity of natural resources: the food we eat, the clothes we wear, and the materials with which we build houses, cars, and electronics all come from the Earth. As the number of people on the planet grows, more resources are needed to meet just our basic needs and most Americans' desires are not very basic. "40 acres and a mule" or "a chicken in every pot" are no longer the standards for which we strive. Most of us want a car, a cell phone, and a comfortable place to live in an area that is not too crowded plus lots of good cheap food and clean water. All of these items come at a cost that is more than just money. Understanding how the Earth provides our needs and how our actions and decisions affect our planet is the topic for this semester. Laboratory activities will reinforce a survey of biological principles with an emphasis on humans, including evolution, ecology, plant and animal diversity, and physiology.

Student Learning Outcomes (SLO)

The objective of the study of a natural sciences component of a core curriculum is to focus on describing, explaining, and predicting natural phenomena using the scientific method. Courses involve the understanding of interactions among natural phenomena and the implications of scientific principles on the physical world and on human experiences.

The SLO's for this course and the associated activities include:

- Critical Thinking
  - (CT1) Students will gather, analyze, interpret and evaluate data.
    - Students will conduct experiments in the lab, gather data and then analyze their results.
- Communication
  - (CS1) Students will communicate information via written means on lab activities and projects.
    - Students will conduct lab experiments and communicate their findings in writing to each other and their instructor
- Empirical & Quantitative Skills
  - (EQS1) Students will collect and analyze quantitative data.
    - Students will take measurements as part of a lab experiment. They will analyze their data and generate conclusions.
  - (EQS2) Students will make observations to test a hypothesis and generate conclusions based on their observations.
    - Students will make directed observations, gather data and then analyze their results

Course Materials Required:

1109 Lab Manual by Dixon and Darwin (or other)
You may elect to purchase the book, rent the book, purchase an "eBook", etc. At least one copy of the textbook will be available in the library.

Internet Access and E-mail
Some assignments and course materials will be available at the course web site, http://www.angelo.edu/faculty/mdixon/ ManEnvironment/manenvlab.htm or on the Blackboard web site http://blackboard.angelo.edu/.

You are expected to check your e-mail regularly. Your "username@angelo.edu" address will be used for class correspondence unless you enter a substitute address on Blackboard.

Attendance:
You are expected to attend all lab periods. The single most important thing you can do to get a good grade in this course is to show up. I will take attendance regularly. You will get a zero on the assignment if you are not present. Quizzes and other in-class activities may not be made up. The only exceptions that are made require prior permission.

Religious Holy Days:
A student who intends to observe a religious holy day during the semester should make that intention known in writing to the instructor during the first week of the semester and one week prior to the absence. If this submission is completed, a student who is absent from classes for the observance of a religious holy day shall be allowed to take make up missed exams or assignments scheduled for that day in accordance with syllabus policy.

Grades:
Your grade will be determined as follows:

- There are 11 regular lab activities in the semester worth 1200 points. Our first 10 labs are worth 100 possible points each (1,000 points total). One week you will have the option of doing some additional work to help replace your lowest lab grade.
- The last lab stretches out over a couple of weeks and is worth 200 total points.
- Points will be earned in various ways including pre-lab quizzes, activities during lab and post-lab quizzes.
- Your grade is an average of the points earned in all labs. All of your scores will be summed and divided by 1200.
- You will receive a zero for any lab you miss. A make-up lab is available once each week.
- Your semester grade will be determined using the scale:
    - 90 – 100% = A
    - 80 – 89% = B
    - 70 – 79% = C
    - 60 – 69% = D
    - <60% = F

Rounding off of averages or the use of a curve may occur at the instructor's discretion.

Academic Honor Code:
Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. Students are responsible for understanding the Academic Honor Code, which is contained in both print and web versions of the Student Handbook. The honor code is available at www.angelo.edu/student-handbook/code-of-student-conduct/.

Special needs:
Persons with disabilities which may warrant academic accommodations must contact the Student Life Office, Room 112 University Center, in order to request and to implement academic accommodations.

Withdrawal From the Course:
You are not automatically withdrawn from a course if you stop attending. If you stop attending class and do not withdraw I am required to submit a grade for you. This "F" cannot be removed.

Note: Course syllabi are intended to provide students with basic information concerning the course. The syllabus can be viewed as a 'blueprint' for the course; changes in the syllabus can be made and students will be informed of any substantive changes concerning examinations, the grading or attendance policies and changes in assignments.

Topics

Introduction, Syllabus
Hypothesis Testing
Variation and Artificial Selection
Adaptation
Population Growth
Energy Flow
Extinction
Biodiversity
Climate and Biomes
Environmental Issues
Environmental Debates