

# **BIO 141    *Introduction to Cellular Biology Laboratory***

## **ANDERSON UNIVERSITY (SC)**

### **I.    COURSE INFORMATION**

**BIO 141            Introduction to Cellular Biology Laboratory            1 Credit Hour**

Course Description: The course, ***Introduction to Cellular Biology***, including physiology will include topics on, but not limited to: cell structure and organization, eukaryotic genome, membrane transport, cell signaling, and regulation of cell cycle.

Prerequisites: None

Corequisites: BIO 140

Class meeting time and place: [REDACTED]

In addition to time spent in lecture, students are expected to spend time on class assignments, readings, and studying the material.

### **II.    INSTRUCTOR INFORMATION**

**See Canvas**

### **III.    COURSE PURPOSE, GOALS, AND STUDENT LEARNING OUTCOMES**

Student Learning Outcomes:

**[NW]    Knowledge of the physical and natural world**

- 1) Student Learning Outcome (SLO) #1: Through the inquiry process, students will be able to demonstrate knowledge of the fundamental concepts of the scientific method as applied to the relevant course content.

**[CT]    Critical thinking skills: inquiry, analysis and creative problem solving**

- 2) Student Learning Outcome (SLO) #2: Students will be able to evaluate, in terms of scientific merit, claims brought forth in various media relevant to the course content.

Course Objectives / Goals:

- 1) The student will be able to critically analyze news reports in terms of scientific merit, journal articles, and understand and apply the inquiry process of the scientific method relevant to the course content.
- 2) The student will be able to understand and apply quantitative methods to scientific questions such as graphing, statistics, and terminology as relevant to the course content.
- 3) The student will be able to describe the general structure and function(s) and structure of biochemical molecules important to the cell, including proteins, carbohydrates, lipids, and nucleic acids.
- 4) The student will be able to describe the parts of a compound microscope, how to use it, and how to determine the total magnification, resolution, and terminology as relevant to the course.
- 5) The student will be able to describe the basic cellular and molecular processes involved in metabolism (including anabolism, catabolism, cellular respiration, photosynthesis) occurring within eukaryotic cells involving enzymes of yeast respiration.
- 6) The student will be able to utilize knowledge of various types membrane integrity of potatoes to isotonic, hypertonic, and hypotonic solutions, and use of the spectrophotometer.
- 7) The student will be able to identify and apply concepts of mitosis, cell division, and understand concepts of Mendelian Inheritance as relevant to this course.

#### IV. METHOD(S) OF ASSESSING ACHIEVEMENT OF STUDENT LEARNING OUTCOMES

**Major EXAMS = 60% of the Total Grade:** Two tests will be given, a Midterm (30%) and a Final (30%) laboratory practical exam. The final may include content from any laboratory covered in the semester. A variety of question styles will be utilized in each test, which may include multiple-choice, true-false, completion, matching, problem solving, short answer, and discussion questions. Some questions may require students to apply the material learned during the course to new or novel situations that require thought and analysis. No make-up exams will be given – but with a legitimate written excuse you may replace the missed exam grade with the final exam grade.

**Quizzes = 20% of the Total Grade:** Short Quizzes of questions will be given at the beginning of most class periods over the material being covered that day, except the first day of lab. Five quizzes total worth 40 points each for a total of 200 points for the semester. Please bring your iPad/laptop to class each day as these quizzes are given on-line. **The student must be in present in class attendance for completing this portion of the course. If a student is absent for any reason, except an excused absence and misses an in-class assignment or quiz, he/she will not be able to receive points for said assignment or quiz.**

**Class Work/Discussion = 20% of the Total Grade:**

**The student must be in present in attendance for completing this portion of the course. If a student is absent for any reason, except an excused absence and misses an in-class assignment or quiz, he/she will not be able to receive points for said assignment or quiz.**

The professor reserves the rights to alter, add to, or delete requirements of the syllabus based upon the professor's judgment of what is best for the educational purposes of a particular class. Changes in class requirements and their influence on the final grade for the course will be discussed in class in advance and distributed in writing.

#### V. STUDENT FEEDBACK AND GRADING POLICIES AND PROCEDURES

Format	Total Points	Percentage of Final Average
Midterm Laboratory Practical Exam	300 points	30%
Quizzes	200 points (5 x 40pts each)	20%
Class Work/Discussion	200 points (10 x 20) each	20%
Final Laboratory Practical Exam	300 points	30%
<b>Total</b>	<b>1000</b>	<b>100%</b>

**Grading Scale is as follows:** A = 90-100, B = 80-89, C = 70-79, D = 60-69, F = <60 (rounding embedded)

I reserve the right to deviate slightly from the posted grading scale in response to individual circumstances. Attendance and class participation will be considered whenever a student is "border-line" in their final grade. I already roundup to help you, therefore, if you do not make the cut, do not ask after you receive your final grade!

You may determine your average at any time during the semester by totaling YOUR points at that time and dividing the total by the number of POSSIBLE points at that time.

#### VI. CONTENT OUTLINE

See Canvas

## VII. **METHODS OF INSTRUCTION**

**Laboratory:** There will be labs each time we meet.

**Assignments:** The assigned readings, class work, discussions, and Laboratory exercises are designed to build upon the material presented in lecture.

## VIII. **ASSIGNMENTS AND COURSE CALEDNAR**

**See Canvas**

## IX. **TEXTBOOKS AND SUPPLEMENTARY READINGS**

**Text:** Laboratory materials will be provided through Canvas. [REDACTED]

## X. **COMPUTER AND INFORMATION TECHONOLGY USAGE**

1. All Power points, motes, media and miscellaneous course resources will be posted on Anderson University's Canvas which can be accessed via the link on AU website under the "Resources" tab, or Pearson's Mastering Biology website, Microsoft Word, PowerPoint, and Excel may be utilized.
2. Email communication with the instructor is required.
3. iPads or laptop computers are required for class.

**E-mail:** The official AU e-mail policy states: All students are expected to establish and maintain an e-mail address on the Anderson University e-mail system. Students are expected to check their e-mail at least once each week during the Fall and Spring semesters. Students are responsible for all material, assignments, and announcements sent by e-mail. Ignorance of course requirements, instructor statements and directions, and University announcements or policy statements sent through University e-mail is not an acceptable excuse for failure to meet the requirements of a course or to adhere to University policy.

For science classes, students are expected to check their Anderson University e-mail account on a daily basis. The instructor has the right to send course information, course changes, and/or assignments via e-mail with the assumption that all students will read the material within 24 hours of its delivery to their school e-mail account.

**Prohibition of Recording Lectures/Class Meetings:** Audio or video recordings of lectures and classroom discussions are not permitted in this class. AU values the open exchange of ideas, which occurs more freely if the participants know that comments and discussions will not be recorded and shared.

Recording of lectures is permitted only if permission is secured in advance from the Center for student Success and the course instructor is notified. Recordings can be used only to assist the individual student in that class. Publishing, distributing, or using classroom recordings in violation of these restrictions is a violation of the student code of conduct and may be a violation of federal copyright laws.

**The use of a cell phone during a quiz or test will be considered as academic dishonesty. This includes using the cell phone as a calculator.**

## **XI. COURSE POLICIES: ATTENDANCE, DISABILITIES AND ACADEMIC ADJUSTMENTS POLICY**

**Academic Dishonesty:** Academic dishonesty will not be tolerated in this course and will be dealt with in accordance with the procedures stated in the Anderson University Student Handbook. The use of a cell phone during a quiz or test will be considered as academic dishonesty. This includes using the cell phone as a calculator.

**Absence Policy for Science Courses:** It is in the student's best interest to attend all lectures and recitations as material presented therein is invaluable in understanding the course material; however, we expect students to act in a responsible manner such that an attendance policy is not necessary for lecture or recitation. Understand that office hours are not a substitute for scheduled class time and should not be used as such. The ability to make up a missed assignment, quiz, or test will be handled according to university policy and the specific procedures described in the individual course syllabus.

Laboratory sessions are mandatory and attendance is required at all scheduled lab activities. Make-ups for lab absences will only be allowed in the case of documentable excused absences such as illness, school sponsored events, and family related emergencies. Whenever possible, the absence should be discussed with the professor before the scheduled lab day. Students who have the potential for multiple absences due to school related functions, for example athletes, should present a schedule for all lab absences to the professor within the first week of classes so alternative arrangements can be made. Note that some labs and almost all field experiences require extensive set-up and/or may utilize time-sensitive components so they are difficult if not impossible to duplicate. In these cases, alternative arrangements will have to be made in the case of an allowed make-up lab.

**Course Begins: See Canvas**

**Last Day to Drop with NO GRADE: See Canvas**

**Last Day to Withdraw with a Grade of "W": See Canvas**

**Course Ends: See Canvas**

\* Request must be conveyed to the Registrar's Office by end of business on the date indicated.

# Drop fee applies once Self Service has closed (Financial Responsibility after this date.)

**Syllabus changes:** The professor reserves the right to alter, add to, or delete requirements of the syllabus based upon the professor's judgment of what is best for the educational purposes of a particular class. Changes in class requirements and their influence on the final grade for the course will be discussed in class in advance and distributed in writing or via e-mail.

**Disabilities and Academic Adjustments Policy:** If you have a disability that may interfere with your learning, testing, or assignment completion in this course, you may be eligible to receive an academic adjustment to help provide you with an equal opportunity to participate in and benefit from this course. Please contact the staff of the Center for Student Success, who will advise you on appropriate documentation, determine reasonable adjustments, and notify me of any adjustments for which you are eligible. Once you have been approved for an academic adjustment through the Center for Student Success, please discuss with me its appropriate implementation in this course. Documentation must meet the guidelines specified by university policy, and no one else can be notified of your disability or adjustment without your written consent. This process must be repeated for every semester you are enrolled at Anderson University and wish to receive an adjustment. Academic adjustments are intended to "level the playing field" so that students with disabilities can demonstrate their true abilities in their courses. Changes cannot be made to grades earned before a student has requested an adjustment, so please attend to this early in the semester.

**Make-Up Work:** It is the student's responsibility to make up all materials missed after a lecture.

**Email Policy:** All students are expected to establish and maintain an e-mail address on the Anderson University e-mail system. Students are expected to check their e-mail at least once a week during the fall and spring semesters (ACCEL instructors may require students to check their e-mail more frequently). Students are responsible for all material, assignments, and announcements sent by e-mail. Ignorance of course requirements, instructor statements and directions, and University announcements or policy statements sent through University e-mail is not an acceptable excuse for failure to meet the requirements of a course or to adhere to University policy.

## **XII. LEARNING FACILITIES AND RESOURCES FOR STUDENTS PERTINENT TO COURSE**

The Center for Student Success provides free tutoring for students who would like assistance. Tutors are available who are qualified to tutor Environmental Biology. It is located in the Student Center building, to the left of the Post Office.

**Computer resources:** A general-use computer lab is provided for students in the Watkins Teaching Center and the Thrift Library. The Anderson University Library offers a variety of resources both on-line and on-site.

## **XIII. ANDERSON UNIVERSITY STATEMENT OF FAITH**

From the Board of Trustees and Administration at Anderson University

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Statement of Faith

Anderson University, since its founding in 1911, has been a community of Christian scholars.

The vision for Anderson University is that it will be *a premier learning place, serving its students, community, and churches, while upholding the teachings of Jesus Christ*. In recent years greater value has been placed on recruiting and retaining Christian teachers who have a deep personal faith in Jesus Christ, who speak openly of their relationship with Christ, and are active in serving God through their churches.

As one of the foundations of the Christian faith we hold and teach, we affirm the Christian doctrine of creation as outlined in the *Baptist Faith and Message*, 2000 version: "There is one and only one living and true God. He is an intelligent, spiritual, and personal Being, the Creator, Redeemer, Preserver, and Ruler of the universe. Man is the special creation of God, made in His own image. He created them male and female as the crowning work of His creation."

At Anderson University evolution is taught as theory and not as fact.