

**BIOLOGY 206 - Spring 2019**  
**General Biology Laboratory: Molecular and Cellular Biology**

**Course Director**

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**Textbook**

*General Biology: Molecular and Cellular Laboratory*, 2019. Available only through the Biology Department.

**Course overview**

BIO 206, like BIO 205, is an introductory laboratory course involving theories and methods of biological experimentation. The cellular and molecular basis of life will be emphasized in BIO 206, including cell structure and function, genetics, and molecular biology. Laboratory techniques include microscopy, media preparation, micropipetting, serial dilution, genetic screening, chromatography, spectrophotometry, and gel electrophoresis. In BIO 206 you will design controlled experiments to test hypotheses, perform data analysis using elementary statistics, write a review of current scientific literature, and orally present experimental results and conclusions.

**Attendance**

Up to 24 points can be earned for attendance and participation. Being present on time and actively participating can earn up to 2 points for each of the 12 lab sessions. If illness or other unforeseen circumstances recognized by the University causes you to miss a significant number of class periods, consider requesting an Incomplete (I) contract which, if approved by the Course Director and the College, would allow you to complete the course within one academic year.

**Preparation Quizzes, Lab Reports and Lab Exams**

*Preparation for Lab is Assessed with Pre-lab quizzes:* A three-point miniquiz will be taken prior to arrival in lab (there is no quiz for the first or last lab session). These assess your preparation for lab and can include questions related to background information for that lab; experiment(s) to be performed that day; and/or understanding of a past experiment if work that week will be a continuation of an experiment. Your lowest pre-lab quiz score will be dropped.

*Written Lab Reports:* Two lab reports will be assigned for two of the Modules (Module #2 and Module #3).

*Exams to Assess Understanding:* Four in-class exams will be given during the course of the semester and a comprehensive final exam will be given the last meeting of the semester. The exams will test understanding of the experiments, including the

theoretical background given in the lab manual and the BlueCasts, the reasons for the design, controls, and procedural steps of the experiments, the operation and function of the equipment used, and the evaluation, analysis, and interpretation of the data obtained. Exams may also include practical aspects to ensure that you are able to do routine lab manipulations.

### **Writing Assignment**

In our effort to provide an accurate biology laboratory experience and prepare students for upper division biology courses a writing assignment will be done. The ability to be given a topic, research the topic to find appropriate primary literature and then mesh multiple sources into a written document is fundamental to doing laboratory work and becoming a biologist. The final assignment will be a culmination of different assignments aimed to teach students the process of writing a review paper. You will research your topic, decide upon a specific subtopic on which to focus, develop an annotated bibliography and then write a detailed outline. Specific information about each assignment associated with the writing assignments will be provided on BlueLine.

### **Safety**

While the BIO206 laboratory is not an extremely hazardous place to work, there are some hazards. We work with live bacteria, hazardous chemicals and dyes, and potentially lethal electrical equipment. Attention to certain safety standards is not only necessary for your protection during the BIO 206 laboratory, it is also important that you develop safe working skills for other life-long activities. We would like you to develop safe habits that will carry over into other courses. Safe behavior is a sign of maturity and respect for the welfare of others.

#### **Proper laboratory attire is an absolute requirement for laboratory attendance.**

Proper attire includes non-baggy pants that extend to the ankles, socks, and shoes that cover the foot completely (sandals, shoes with wide-open mesh, *etc.* are not acceptable). The torso must be completely covered under all ranges of motion. Under no circumstances are shorts, short skirts, or shirts that expose any part of the torso to be worn in lab. If you lift your hands above your head, there should be no exposed skin below your shoulders. Only neck, arms and hand, and head can be exposed.

**Food, drink,** any type of eating utensils, or any evidence of food or drink consumption (wrappers, containers, *etc.*) are not to be brought into, stored in, or consumed in a laboratory.

**Applying cosmetics, lip balm, and inserting or removing contact lenses** must be done before entering the laboratory, not in the laboratory.

**Appropriate goggles** shall be worn when there are liquids used in the laboratory (which includes most weeks). Eye protection may be removed when looking through the microscope.

**Hands shall be washed** before leaving laboratories, even if gloves were worn during the laboratory.

**Unauthorized person(s)**, including students not enrolled in the course, are not allowed into the laboratory.

**Students not conforming to laboratory safety regulations and procedures will be asked to leave the laboratory. Such students will surrender attendance and participation points for each infraction.**

## **Grading**

Pre-lab quizzes (best 10 of 11), 10 @ 3 points each	30 pts
In-class regular exams, 4 @ 20 points each (drop lowest)	60 pts
Lab reports, 2 @ 30 points each	60 pts
Writing Assignment #1	10 pts
Writing Assignment #2	20 pts
Writing Assignment #3	30 pts
Final exam (Exam #5)	40 pts
Laboratory Attendance/Participation (Notebook check)	34 pts
TOTAL	284 pts

### **BIO 206 Grading Scale**

90-100%	A
86-89.99%	B+
80-85.99%	B
75-79.99%	C+
70-74.99%	C
60-69.99%	D
< 59.9%	F

## **Academic misconduct policy**

Students are required to follow both the letter and the spirit of the Creighton University policy on proper academic conduct, as detailed in the Creighton University Undergraduate Student Bulletin and in “Learning in the Academy: An Introduction to the Culture of Scholarship”

([www.creighton.edu/fileadmin/user/CCAS/docs/LearningInAcademy.pdf](http://www.creighton.edu/fileadmin/user/CCAS/docs/LearningInAcademy.pdf)).

Examples of academic dishonesty in this course include, but are not limited to, “cheat sheets”, looking at another student’s answers, and plagiarism on any submitted writing assignment. Violations will result in a score of zero on the assignment/exam for a first offense, and a final course grade of “F” for any additional offense. Incidents of academic dishonesty will be handled according to College of Arts and Sciences procedures as explained at the following link:

<https://ccas.creighton.edu/sites/ccas.creighton.edu/files/media/Academic%20Honesty%20Policy.pdf>

## **Disability accommodations**

If you have a disability for which you need an accommodation, you are encouraged to contact both your instructor and the Office of Disability Accommodations located in the Old Gym, Room 408 (402-280-2166) as early as possible in the semester.

Students with disabilities who require special accommodations need to get a letter that documents the disability from the Office of Disability Accommodations. This letter should be presented to me at the beginning of the semester, so we can discuss accommodations.

## **Important dates**

### **Exams:**

In-class Exam #1 (Week of 2/4 – 2/8) covering Module #1.

In-class Exam #2 (Week of 2/25 – 3/1) covering Module #2.

In-class Exam #3 (Week of 3/25 – 3/29) covering Module #3.

In-class Exam #4 (Week of 4/8 – 4/12) covering Module #4.

In-class Exam #5 (Week of 4/29 – 5/3) covering all modules (50% will be Module #5 and 50% will be an even coverage of Modules 1-4).

### **Lab Reports:**

Lab Report #1 (Module #2) is due before your regular lab meeting day and time one week after completing Module #2. This is due the week of 3/4 – 3/8.

Lab Report #2 (Module #3) is due before your regular lab meeting day and time one week after completing Module #3. This is due the week of 4/1 – 4/5.

### **Writing Assignment:**

Assignment #1 (Broad Questions) = Submit via BlueLine by 11:59PM Sunday, February 17<sup>th</sup>.

Assignment #2 (Focus Question and Annotated Bibliography) = Submit via BlueLine by 11:59PM Sunday, March 24<sup>th</sup>.

Assignment #3 (Detailed Outline and Bibliography) = Submit via BlueLine by 11:59PM Sunday, April 14<sup>th</sup>.

**Please note:** In the event of disruption of normal activities due to (for example) weather-related class cancellation, flu outbreak, or other emergency, the format and policies for this course may be modified to enable completion of the course. In that event, you will be provided an addendum to this syllabus that will supersede this version.