

Albright College
Bio 151 Lab Syllabus

Spring 2020

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Lab assistants: The students below have been chosen to assist with the laboratory teaching of Bio 151. In addition to helping to prepare labs and answer questions during the laboratory exercises, these students are often available to serve as tutors for this course. **Ask** if you would like help!

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Course Description: Laboratory exercises provide an opportunity for students to explore biological concepts and principles for themselves. The activities are designed to complement topics discussed in the lecture portion of the course, and to help develop a better understanding of the course materials. Additionally, laboratory activities are intended to help students improve their critical thinking skills and to develop a better understanding of what it means to think “scientifically”. Hands-on activities provide experience in important scientific skills including microscope use, pipetting, dissecting, and statistical analysis.

Learning Objectives:

In this course, the successful student will:

- Gain knowledge in biological fields including cellular processes, anatomy, and physiology.
- Learn how to use laboratory equipment including microscopes, micropipettes, spectrophotometers, electrophoresis apparatuses, and dissecting tools.
- Learn dissection techniques and be able to identify anatomical structures and the functions of those structures.
- Develop problem-solving skills through scientific inquiry, and gain experience using the scientific process, including formal observation, developing testable hypotheses and predictions, and designing experiments.
- Learn how to communicate hypotheses, results, and data interpretation orally and in writing using scientific vocabulary, graphical data presentation techniques, and basic statistical analysis.

Required Materials:

- Lab manual printout
 - There is a Moodle site for the lecture and a separate one for lab. Lab exercises will be posted on the lab site. All materials posted on Moodle are only for use by students in Bio 151 for the Spring 2020 semester. They may not be shared with anyone else, or distributed electronically or in any other format.
 - All students are required to bring printed copies of the lab materials posted on Moodle, and to read them before coming to lab.

- Lab materials are posted at least one week ahead of time, so failure to find a working printer immediately before lab does not negate the requirement for having a printed copy at the beginning of lab.
- Scientific calculator
 - Any scientific calculator will do; graphing functionality is not required. Calculator applications on phones and tablets are not permitted.
- Lab notebook
 - Must be a bound composition-style notebook; no spiral bindings.
 - You are required to bring your lab notebook every week, starting the first week of lab, and to bring the same lab notebook throughout the semester. Your lab notebook should not be shared with the lecture or with other classes.
 - Quad ruled notebooks are preferred.
 - The lab notebook should be prepared ahead of lab as indicated in the lab handout for each week.
 - Further details about expectations for lab notebooks are provided in a handout posted to Moodle, and will be discussed in the first week of class.
- Smith and Schenk, Dissection Guide and Atlas to the Fetal Pig. 3rd edition. (Required following Practical I.)

(Strongly) Suggested Materials

- Three ring binder
 - A three-ring binder is an ideal organizing tool for the lab materials you are required to print out each week. You are expected to be able to use and refer to materials from previous weeks, so it is helpful to have these items with you in lab.
 - A 1" binder works fine if you are double siding your printing (standard for campus printers).
- 3x5 cards
 - Making and using flash cards is a highly recommended study tool for this course.
 - A habit of making flash cards every week with the definitions, concepts, and structures you are examining is a study technique shared by many of the most successful students.

Lab Safety:

- Students are expected to **follow all lab safety rules at all times**, including arriving in lab with appropriate footwear. This includes both formal class meetings, and use of the lab during open lab.
- Students who are not wearing proper footwear will be sent away to procure acceptable footwear, and this will negatively affect the lab grade. Any missed lab time due to inappropriate footwear counts as an unexcused absence.
- **Food, drinks, candy, gum, and other consumables including tobacco and vaporizer products are not permitted in laboratory spaces.** Any food, drink, or other consumables brought into lab must be disposed of.
- Questions on safety procedures may show up at any time on quizzes and exams.
- Failure to follow proper safety procedures may lead to dismissal from lab, at the discretion of the instructor or the Environmental Health and Safety Officer.
- A handout on safe lab practices will be provided, which must be signed by the student prior to participation in lab. This handout is also posted on Moodle in the top pane.

Cell phones:

- Cell phones or other electronic devices (tablets, smart watches, etc.) may not be used during lab. Phones and other devices must be put away at all times.

- You may not use your phone as a calculator or timer; you are required to have a scientific calculator for all labs, and timers are provided.
- The only acceptable use of a cell phone is for photography of your pig or other dissections, at the end of lab after all drawings have been completed. You must show your notebook of completed drawings to your instructor (and receive instructor permission) prior to getting out a cell phone.
- Inappropriate use of cell phones will result in the loss of cell phone privileges during lab for the remainder of the course.
- Any cell phones or other smart devices on your person during an exam will result in confiscation of the exam, and a grade of zero will be recorded.
- Students with medical conditions that require access to their cell phone should consult with the instructor during office hours early in the semester.

Laboratory Conduct:

- Students are expected to arrive in lab on time and **prepared**. Prepared means:
 - having printed and read all the material posted on Moodle,
 - coming to lab with your lab notebook appropriately filled out,
 - having completed the pre-lab Moodle assignment, and
 - being properly dressed (no sandals or open toed shoes).
- Students should plan to be there for the duration of lab. Do not expect to leave early.
- Students are expected to maintain a clean workspace, and to leave their lab station and any communal work areas looking as good as or better than it was at the beginning of lab. All equipment must be put back and lab benches cleaned before leaving.

Lab Partner

- Students will work with a lab partner throughout this course, because working with other people is an important part of doing science.
- Students will work with a new, different lab partner for each of the first four labs.
- Starting with the fifth lab, students will chose a partner from other students in attendance each week. At this point, students may either work with a person they have previously partnered with, or may select a new partner. Although students are generally expected to choose their own partners, all partnerships are potentially subject to change by the instructor.
- Prior to leaving lab, lab partners are expected to exchange contact information and determine a time to meet to complete collaborative post-lab work. Students who fail to meet with their partner within a reasonable time frame for the completion of collaborative work will receive a grade penalty.
- Students who are departing lab early for any reason may be expected to complete all lab work on their own (without a partner), subject to the specific requirements of the lab exercise and the planned time of early departure.

Attendance Policy

Attendance in lab is mandatory unless otherwise stated by the course instructor or indicated in the lab schedule (e.g., open labs). A **2.5% penalty will be assessed on the course total for the first unexcused absence from lab and an additional 5% penalty for each subsequent absence.**

Students should not plan events that conflict with lab. The biology faculty may excuse an absence due to athletic games (not practices), scheduled performances (e.g., band or choir), or class field trips. Other non-emergency cases will require prior approval of the instructor.

Requests for a non-emergency excused absence should be submitted at least one week in advance. Please contact the instructor as early as possible in the semester to determine a course of action. Failure to make arrangements **before** missing a lab for a non-emergency reason will always be considered an unexcused absence.

If missing lab is unavoidable due to an illness or other emergency, the student should make every effort to notify the instructor **beforehand**. The absence will only be excused if **written verifiable documentation** is provided within two business days of returning to classes. Missed lab penalties will be applied after the documentation window has expired.

Make-up labs will not be offered. Lab practical exams must be made up later the same calendar week of the original exam date.

Students must be in lab at the designated start time. Each late arrival will result in a 1% penalty applied to the lab portion of the course grade. Late arrivals after the first 20 minutes will not be admitted and the above missed lab penalties will apply. Unexcused early departures (prior to the completion of all lab work) will likewise result in a 1% penalty applied to the lab portion of the course grade.

Academic Integrity and Plagiarism:

The statement on academic integrity in the lecture syllabus for this course also applies to the laboratory portion. You are responsible for understanding and following Albright's policy on academic integrity (<https://www.albright.edu/policies/policies-listing/#academic>).

However, much of the work done in a laboratory environment is collaborative, and as such you will be working with other people. It is understood and expected that you will collaborate with your lab partner, and sometimes with others, **while working in lab**. However, you are expected to **do your own work** on quizzes, exams, and all assignments that are not specifically indicated as collaborative. All assignments will clearly indicate if you are expected to do the work on your own, or collaborate with your partner. Individual (on-your-own) assignments may not be done in collaboration with others, and collaborative assignments may not be done on your own.

Collaborative assignments should be done with your lab partner, and each partner is responsible for submitting their own copy of the assignment to Moodle. A collaborative assignment should have both partners' names on it, and the assignments submitted by both partners must be substantially identical in order to receive credit.

Collaboration, however, does not mean that one person does all the writing and the other proofreads it. Whether each student puts together a post-lab assignment individually, and partners then meet to combine their individual work, or students meet to co-write from scratch, the entire final document is expected to be a combination of effort from all group members who provided input on all sections. Students must physically meet to work on collaborative assignments; relying solely on electronic "meetings" is not permitted. All partners are expected to contribute equally to all portions of collaborative assignments. Failure to contribute equally will result in a reduction of your grade.

Plagiarism is the act of stealing the work and ideas of others and passing it off as yours. Plagiarism will not be tolerated. This includes putting your name on an assignment to which you did not contribute a substantially equal portion.

Students may not share data generated in lab with anyone who did not participate in the collection of those data. Students who did not generate data may not use data generated by anyone else in lab reports or other assignments without explicit written permission from the instructor. Lab partners may share data with each other that all partners have participated in collecting, and when the assignment specifically indicates that collaborative (partner) work is required. Class data may only be shared with (and used by) other students in the class that participated in the collection of those data, or as otherwise assigned by the instructor.

Any sharing of course assignments, documents, or other materials with any person or website is strictly prohibited, unless explicit permission for such sharing is granted by the instructor. The sharing prohibition applies to any form of distribution, including print and electronic (online) sharing. Providing materials that allow others to engage in academic dishonesty is a form of academic dishonesty and will not be tolerated. Use of materials shared by others, including use of online editing platforms or other online tutoring/assistance platforms for the completion of assignments, is likewise prohibited. In the above cases, the penalties for academic dishonesty will apply.

Grades:

Grades from lecture (600 course points) and lab (400 course points) are combined to give you a single grade for the course. The lab component of the grade is based on in-lab quizzes, pre-lab (Moodle) quizzes, post-lab assignments, lab notebooks, presentations, lab safety, and two practical exams. Grades will be written on all assignments, quizzes, and exams when they are returned. You are responsible for keeping track of your grades and your academic status in this course. Use of the course schedule to record your grades as you receive them is strongly encouraged. Lab grades are based on:

- **Pre-lab Moodle quizzes** (5 pts each) must be completed by **11PM** the night before lab.
 - Failure to complete the pre-lab assignment makes you ineligible to attend lab, which will count as an unexcused absence.
- **In-lab Quizzes** (5 pts each) will occur at the beginning of some labs, as indicated on the schedule. These quizzes will be similar in format to a practical exam.
- **Post-lab Assignments** (50 pts total) are typically due via Moodle (MS Word or pdf format) the week following the week it was assigned, by the starting time of your lab. Collaborative assignments must be submitted to Moodle by all partners. Individuals who do not submit their copy of a collaborative assignment to Moodle will earn a grade of zero. Late assignments will not be accepted, and will earn a grade of zero.
- **Lab Notebooks** (30 pts x 2) are due for grading at the beginning of each practical exam.
- Two **Lab Practical Exams** (100 pts each) are scheduled for **March 24-26** (Practical I) and **May 5-7** (Practical II). The lab exams will occur during your regularly scheduled lab day and time, unless there is a change to the lab schedule due to weather-related delays or cancellations. In that case, the first lab practical date will be Friday March 27, and you will sign up for a one hour time slot on that Friday that fits within your schedule.
- **Presentations** (25 pts). You will give a short (5 min) presentation on a selected physiological system during the second half of the semester. Presentations are due via email to the instructor 24 hours ahead of the presentation date (and time) in lab. Further information will be provided mid semester.

- **Lab safety** (20 pts). Students with no lab safety violations will receive the full lab safety grade. Students with one lab safety violation will receive half of the lab safety grade. More than one safety violation will result in a zero for the lab safety grade. Safety violations that have resulted in grade reductions still require correction by the student in order to participate in lab. Safety violations may also result in dismissal from the lab, at the discretion of the instructor or the Environmental Health and Safety Officer.

Open Lab

The lab is open from 8AM to 3PM on selected Fridays, as indicated in the course schedule, for additional study time. You are encouraged to take advantage of this opportunity. Open lab is only available for students who have attended their regular lab session. All lab safety rules apply during open lab, and the lab safety grade will be assessed on conduct during open lab.

Electronic Communication

All electronic communication for this course will occur via Moodle or the official Albright email (@albright.edu). Your instructor will never send an email from another provider, or send emails that ask you to click through to access information. Your instructor will never ask for your password. Your instructor also will not send you (or receive from you) text messages. As a student, you are expected to regularly check Moodle and your Albright email for course related communications, and to communicate to your instructor via these methods. Be aware that phishing and other malicious emails may come from outside providers. Do not click on or respond to non-@albright or non-Moodle originated emails that purport to be course related. Your instructor will also not click email links, for security reasons. If you have any questions or concerns about any of the above issues, please see your instructor personally to discuss your concerns.

Academic Support Services

Albright College students have academic support resources available to them at no charge. The [Academic Learning Center](#) (ALC) offers course-specific tutoring, academic skills workshops, hands on learning strategies instruction, and academic counseling to supplement faculty advisement. The [Writing Center](#) offers tutoring to assist with writing and reading support for any class. The [Student Accessibility and Advocacy Office](#) (SAA) is the source for impairment-related accommodations related to the Americans with Disabilities Act (ADA) and its Amendments (ADAAA). Students who receive accommodations from the SAA office should meet with course instructors privately and in a timely manner to discuss the Academic Accommodation Letter (AAL) provided by that office. *Please note that IEPs and 504 plans do not apply to college level courses.* For help or further information, contact the ALC at academiclearningcenter@albright.edu or 610-921-7662 (located in the tunnel near Jake's Place); the WC at writingcenter@albright.edu or 610-921-7540 (located in Campus Center Classroom 1 near Jake's Place); and the Student Accessibility and Advocacy office at SAA@albright.edu or 610-929-6639 (located in the Campus Center Conference Room).

Snow days and weather delays

The schedule provided below is based on the assumption that all classes and labs will proceed as planned and there will be no weather-related delays or cancellations. In the event we lose a lab day or have to make adjustments to the lab schedule to accommodate lost lecture days, the lab schedule will change. Although every effort will be made to make up a "snow day" lab in the week in which it was originally scheduled, or on the Monday following that week, it may be necessary to make additional changes to the

schedule. In the event that a lab cannot be made up in its originally scheduled week, the labs will be rescheduled such that the lab in week 9 will be used to accommodate schedule changes. This means that the lab practical will move from the regular lab time to the Friday of that week (March 27).

Any modifications to the lab schedule resulting from weather adjustments will be communicated via Moodle or the official Albright email. Students are responsible for checking Moodle and their Albright email any time weather delays or cancellations are announced via the campus system. In the case of a delayed start, labs will officially start at the announced time. Tardiness penalties will apply based on the announced delayed start time, as will unexcused absence penalties.

Questions?

If you have questions, you are encouraged to talk to your instructor. Be careful when consulting with outside sources of information, such as non-Albright online “tutors”, your mom, your coach, or your friends. They are likely to have an incomplete understanding of course or assignment requirements and objectives, and may inadvertently mislead you. Your best sources of information on this class are:

- the course syllabus
- the lab manual and handouts posted on Moodle
- your instructor

Schedule*

Week	Week starts	Lab/ activities	Open lab?	Assignment and points	Points for:			
					Quiz	Pre-lab	Pract	Notebook
1	27 Jan	Scientific thinking Organic molecules	no	SI & measurement	5			
2	3 Feb	Osmosis Organic molecule unknowns Gel pouring	no				5	
3	10 Feb	Data analysis and graphing	no				5	
4	17 Feb	DNA profiling Protein synthesis	yes				5	
5	24 Feb	Enzyme activity	yes	Enzyme post-lab	10		5	
6	2 Mar	Cellular respiration and fermentation	yes	Fermentation post-lab	10		5	
7	9 Mar	Microscopy Discussion of presentations	yes	Microscopy post-lab	5		5	
8	16 Mar	Spring Break						
9	23 Mar	Practical exam I	no					100
10	30 Mar	Animal embryology External anatomy and intro to tissues	yes					
11	6 Apr	Digestive system	yes			5		
12	13 Apr	Heart and circulatory system	yes			5		
13	20 Apr	Reproductive and nervous systems	yes			5		
14	27 Apr	Respiratory and excretory systems	yes	Kidney post-lab	20			
15	4 May	Practical exam II	no					100
*This schedule subject to change due to weather or other extenuating circumstances.								