

# Biology 101L Syllabus: Fall 2020

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## Laboratory Coordinator

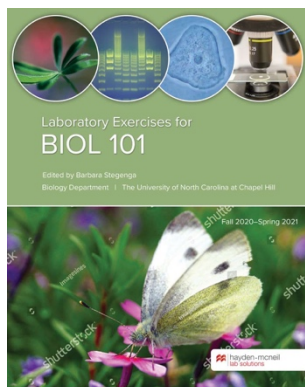
Barbara Stegenga

## Email

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## Office Location

Coker Hall, 211



## Course Overview

This lab is intended to reinforce the topics covered in the lecture course and to expose you to collaboration and writing in the sciences. Through hypothesis testing, data collection, and discovery, the course focuses on interpretation of data and thinking critically. You will be expected to write reports that apply methods learned in lab to test hypotheses. You will learn to think scientifically through observations and experimentation.

## Required Lab Manual

Laboratory Exercises for Biology 101, *Barbara Stegenga*. The lab manual (digital version) can be ordered through UNC Student Stores. The lab manual will be required for all the lab activities, and additional worksheets and videos will be used to accommodate remote instruction.

## Course Format

The lab meets synchronously each week within 2 hours and 50 minutes. Two experiments will be performed that require writing a lab report. A progression of steps to help write a full report include writing an outline, a partial draft report, and peer critique of the draft. In addition, you will write an essay after making observations in lab, work on case studies with other students, write procedural outlines and take quizzes to prepare you for the lab activities.

## Course Goals and Learning Objectives

*Participating in this lab will enable you to:*

1. Understand how empirical measurements are taken using appropriate apparatuses.
2. Generate and test hypotheses.
3. Gather, store and organize data.
4. Analyze and report on data and hypothesis testing.

## Expectations

In this course everyone is allowed to feel they can work and learn in a safe and caring environment. We all should understand, appreciate and respect varied races, classes, genders physical and mental abilities, and sexualities. Everyone matters. You should all treat each other with respect, dignity and civility and everyone (students and TAs) should share the responsibility for making lab, and the University, a positive and better place to live, work and learn.



## Regulations

**Attendance:** Instructions and demonstrations begin on time. It is expected that you read through the lab activities in the lab manual or on Sakai before attending lab, so you are better prepared to work on the assignments and take the quizzes. Participation includes attending Zoom meetings (video required) and completing the worksheets for each lab on Gradescope.

If you are sick you must be excused by your lab instructor within 48 hours of any absence from Zoom meetings. Immediately contact your TA (you should write down your TAs email as soon as you get it in lab). Do not assume an email has been received unless you receive a reply. An **unexcused** lab deducts 10 points from your final grade and counts as a zero on any missed work. Make up labs are only offered if you have been excused by your TA.

## Laboratory Grading

All written assignments (see the lab schedule with assignments and points) are turned in to and graded by the TAs. Each of these written assignments is to be your own creative work and no collaboration outside of lab in writing these is allowed. Students do a peer review of the Photosynthesis draft that the TA grades. Drafts that are revised are used in writing the lab reports. Lab reports are to be no more than 10 pages of text in length and no less than 5 pages of text. The outlines should be 1-2 pages in length and the draft should be 2-3 pages in length. All written assignments are typed and include the Honor Code Pledge. The lab TAs grade lab reports from other sections to rule out any biasness.



Your grade will be determined by tests, daily grades, grades on lab reports and on individual and group participation. All tests are cumulative. Extra credit assignments are not allowed. If you are having trouble with assignments during lab, talk to your instructor first. You may also make a Zoom appointment with the **Writing Center** to either meet with a writing coach or submit a draft of your written assignment for help. The Writing Center offers help with writing your lab report and are unable to address the science, but can give you feedback on the formatting and presentation of the content.

Two quizzes (before Photosynthesis and Enzymes lab begins) will be given to make sure you have read and prepared for the scheduled experiment. The quiz given after the Mammalian Anatomy lab requires you to identify the internal anatomy of a dissected pig. You have five minutes to identify four parts. The other assignments due during the semester are written assignments. Any assignment that is turned in late will have 10% of the value deducted for each day it is late. Grades are no longer negotiable as of the final exam day. Computer problems are not acceptable excuses for late work, therefore, you should always save your work

frequently and in more than one location. Do not wait until the last minute to do your work.

### Grade Appeals

Any grading concerns (appeals) must be submitted within a week after the assignment is graded. The appeal must be completed through Gradescope. Appeals do not guarantee points back, but the grading TA will go over your comments.

Grades are determined based on the combined averages of all sections. The grade seen on Sakai is not accurate as it does not factor in the section averages. The total number of points you can earn for the course is 160.

**Lab Reports:** Lab reports are based on experiments performed in lab over Zoom or those done virtually and should be written completely in your own words. Quotations should be cited. Reports should be comprehensive descriptions of the hypotheses of interest, experimental methods designed to test those hypotheses, results of the experiments, and interpretations of the results. Guidelines for writing a lab report are in the laboratory manual and include:



- Limitation of 10 pages of text exclusive of title page and graphs, charts and tables. Lab reports should not be less than 5 pages of text.
- All text should be double-spaced
- All margins should be 1 inch
- Written in past tense and in paragraph form with the following sections: Introduction, Materials and Methods, Results and Discussion.

To help you write a full scientific lab report, Biology 101 requires you to write an outline (1-2 pages long), a partial draft (2-3 pages long and typed) and critique another student's draft report of the photosynthesis experiment. An outline of the experimental procedure for the enzyme experiment is also required and should be 2-3 pages in length and typed. The outline should be written in standard hierarchical outline format using numbers and letters to identify sections and major points. The partial rough draft of the photosynthesis lab report should include the Introduction and Materials and Methods sections. The partial rough draft will then be critiqued in lab by your lab partners.

**Genetics Case Study Presentation:** You will work as a group with your lab partners to prepare and present a genetics case study from the lab manual. The assignment requires working outside of lab. Research on the genetic disorder assigned is done by all members of the group and is then presented in lab. Presentations are no longer than ten minutes (per group) and require participation by all students in the group. Presentations will be done over Zoom in lab.

**Adaptation Essay:** The writing assignment at the end of the Natural Selection and Adaptation laboratory is to demonstrate your understanding of the mechanisms of adaptation by mutation and natural selection, using examples from the lab. You will explore evolutionary mechanisms in this assignment and turn it in through Gradescope.

**Exams:** Biology 101L has two exams: a midterm and final. The midterm is one hour and covers material from the first lab through the photosynthesis lab. The final is one and a half hours and covers material from the entire semester, however, more emphasis is on the material after the midterm. When taking the midterm and final exam, it is expected that you adhere to the Honor Code and not receive any help on the exam either from outside sources, your notes, another person or the internet. The exams will be administered over Zoom in Gradescope.

**Studying for the exams:** In addition to studying terms throughout the manual and understanding the Learning Outcomes for each lab, it is important to know what you did in lab and why it is important. Ask yourself what was the goal of today's lab? How does it relate to what you studied in lecture? What was the purpose of specific equipment? Peer tutoring will be offered in Dey Hall for students struggling with biological concepts. Limited drop-in tutoring for the fall semester and appointments through Zoom will be available.

<https://learningcenter.unc.edu/appointment-peer-tutoring/>



**Gradescope** will be used to grade all assignments in this course. It allows for providing consistent feedback to you on assignments quickly.

If your instructor gave you the entry code for the course, you will be able to add yourself as a student. To do this, if you already have a Gradescope account, log into that account and navigate to your **Account Dashboard** by clicking the Gradescope logo in the top left corner, then click **Add Course** in the bottom right corner. If you don't have a Gradescope account yet, go to their [homepage](#), click **Sign Up** in the upper right corner, select Student, and put in your entry code in the sign-up form. If the entry code doesn't work, please email your instructor for details on how to access the course.

If you don't have an entry code, your instructor must add you to the course. Once you're added to a course, you'll get an email asking you to set your password if this is your first-time logging into Gradescope or an email with a link to the course if you already have an existing account. If the set password link in this email expires, you can request a new link from the [Reset Password](#) page.

## Using Zoom for Remote Learning

Zoom will be used to attend lab and go over the concepts and activities with your TA. Make sure you download Zoom on your computer and are comfortable using it before lab starts. Your TA will invite you to your Zoom lab before labs begin. The following link will show you how to get started and give you tips on how to use Zoom effectively <https://keeplearning.unc.edu/>.

## Understanding the UNC Honor Code

A student who is academically dishonest is claiming an advantage not available to other students. The instructor is responsible for ensuring that all students compete on a level playing field. Thus, the teacher has teaching, grading and enforcement roles. You are expected to be familiar with the University's Policy on Academic Honesty. What this means is: *If you are charged with an offence, pleading ignorance of the rules will not help you.*



The Biology 101 Lab course upholds the Honor Code within the University of North Carolina's Honor System. Academic progress in this course is determined by all graded work, therefore, no collaboration on any written work is allowed. We do encourage students to study together (over Zoom) and collaborate on assignments where permission to collaborate is given (Case Study Presentation). Information about the Honor Code can be found at <https://studentconduct.unc.edu/instrument>.

So that there are no misunderstandings about academic integrity, we have provided examples of honor code violations below. In this course, students often work in pairs or groups to collect data. You should not collaborate on any written assignments after leaving lab. Submitting work from other sources that is not properly referenced is also a violation of academic integrity. All work submitted must be your own independent written work. If you ever have trouble with an assignment, you should see your TA or instructor for help instead of asking help from your peers.

Possible honor code violations:

- Unauthorized collaboration on written assignments – all written work must be your own and written in your own words. Emailing, texting or using any other form of communication to discuss the writing of the assignment is prohibited.
- Plagiarism – practice of taking someone else's work and passing them off as one's own
- Cheating – Unauthorized behavior to gain an advantage (as on exams)
- Violation of procedures pertaining to the academic process (providing materials such as lab reports, exams, essays, quizzes and outlines) for others to use

Honor Code Pledge below should be included on the title page of LAB REPORTS.

**"I pledge that no unauthorized assistance has been given or received in the completion of this work. Experiments described were performed by me and/or my lab group and this write-up is entirely my own creative work." Signature:**

For ALL OTHER WRITTEN ASSIGNMENTS, use the Honor Code pledge below:

**"I pledge that I have neither given nor received unauthorized assistance on this assignment and it is entirely my own creative work." Signature:**

Copyright Information: All materials used in this course including notes and assignments are covered by copyrights and the University's Copyright Policy, which can be found at

<http://www.unc.edu/campus/policies/copyright%20policy%2000008319.pdf>

"STUDENT WORKS THAT CONSTITUTE NOTES OF CLASSROOM AND LABORATORY LECTURES AND EXERCISES SHALL NOT BE USED FOR COMMERCIAL PURPOSES BY THE STUDENT GENERATING SUCH NOTES."

### Resources

For students who register through **Accessibility Resources and Service (ARS)** <https://ars.unc.edu/> for different types of disabilities, you will be given accommodations such as extended time on exams or help in the lab if needed. Please note that this course is being taught remotely so taking the exam through ARS is not required unless you need accommodations other than extended time.

The Department of Biology values the perspectives of individuals from all backgrounds reflecting the diversity of our students. We broadly define diversity to include race, gender identity, national origin, ethnicity, religion, social class, age, sexual orientation, political background, and physical and learning ability. We strive to make this lab and this department an inclusive space for all students.

### Counseling and Psychological Services

CAPS is strongly committed to addressing the mental health needs of a diverse student body through timely access to consultation and connection to clinically appropriate services, whether for short or long-term needs. Go to their website: <https://caps.unc.edu/> for an evaluation to learn more.



## Technology Use



Since the course is being offered remotely this semester, you will be expected to use your computer for all Zoom sessions and for all assignments and protocols. Sakai will be used for resources such as slides, videos, worksheets, the syllabus and more. Make sure you have good internet connection and a quiet place to work when you attend lab each week on Zoom. It is suggested to use a lap top or desk top for lab meetings and lab activities. Ipads will not work when installing and running the apps to run experiments while on Zoom with your lab. The experiment apps will need to run through Chrome or Firefox. Your attendance is required for you to complete the lab, collect data and submit your assignments. Zoom participation is required for every lab meeting, so be prepared to show your face to your TA, and when you ask a question, first say your name so the TA can identify you. You must stay in the Zoom meeting for the entire lab time, otherwise participation points will be deducted. While taking quizzes and exams, you are not permitted to do google searches or browse any other window. This is a violation of the Honor Code. Answers will be checked against google searches.

## Introduction to Principles of Biology 101 Online Lab Schedule Fall 2020

(See Complete Lab Syllabus for Laboratory Regulations)

Week	Laboratory Exercise	Assignment Due/Points
Aug 17 – Aug 20	Introductions, Process of Science, Microbiology & Microscopy Handwashing Experiment (MATLAB)	Watch Virtual Microscope Video and read Lab 1 The Process of Science before meeting in lab (microscope video accessed through Sakai) Microscope Worksheet <b>1pt</b> Bacteria Worksheet <b>1pt</b> Screenshot of Experiment <b>1pt</b>
Aug 24 – Aug 27	Cells (Eukaryotes), Gram Stain (Appendix) and Cell Lab videos	Outline of Lab 1 Experiment <b>1pt</b> Cell Worksheet <b>1pt</b>
Aug 31 – Sept 3	Photosynthesis Chromatography Exercise Watch “Analysis of Light-Dependent Reaction” video in lab	Chromatography Worksheet <b>1pt</b> Photosynthesis Quiz <b>3pts</b> Photosynthesis procedures outline <b>2pts</b> Photosynthesis Study Sheet in lab
Sept 7 – Sept 10	<b>NO LABS - HOLIDAY</b>	
Sept 14 – Sept 17	Peer Editing of draft in lab Photosynthesis Experiment (MATLAB)	Draft of Photosynthesis Intro, Materials & Methods <b>2pts</b> Screenshot of Experiment <b>1pt</b>
Sept 21 – Sept 24	<b>MIDTERM</b>	<b>30pts</b>
Sept 28 – Oct 1	Genetics: The Principles of Mendel & Molecular Gel Electrophoresis Activity (MATLAB)	Photosynthesis Lab Report <b>20pts</b> Mendelian Genetics Worksheet <b>1pt</b> Karyotype Worksheet <b>1pt</b> Gel Electrophoresis Screenshot <b>1pt</b>
Oct 5 – Oct 8	Natural Selection & Adaptation	Present Case Study <b>2pts</b> Adaptation Worksheet <b>1pt</b>
Oct 12 – Oct 15	Enzymes Watch Enzyme Intro video and submit hypothesis by 5pm Sunday, Oct 11 <sup>th</sup> Watch data collection protocol in lab	Enzymes Procedures Outline <b>2pts</b> Enzyme hypothesis <b>1pt</b> Adaptation Essay <b>8pts</b> Enzymes Quiz <b>3pts</b>
Oct 19 – Oct 22	Mammalian Anatomy I (watch videos)	Enzyme Lab Report <b>20pts</b> Fig 1 Worksheet <b>1pt</b>
Oct 26 – Oct 29	Mammalian Anatomy II (watch videos)	Pig Part Quiz <b>4pts</b> Fig 2 Worksheet <b>1pt</b>
Nov 2 –Nov 5	<b>FINAL EXAM</b>	<b>50pts</b>

**Lab Times:** Mondays & Wednesdays: 9:20am-12:10pm, 1:20pm-4:10pm, 5:00pm-7:50pm

Tuesdays & Thursdays: 9:45am-12:35pm, 1:15pm-4:05pm, 5:00pm-7:50pm

**Lab TAs:** Each lab is taught by a TA. The teaching assistants will provide their name and email address in lab.

Office hours will be held over Zoom with your TA when needed. Sakai will be used for accessing slides and grades on assignments and taking the quizzes. The Sakai site is named BIOL101L.ALL.F20 for all lab sections. *The lab coordinator reserves the right to make changes to the syllabus, including assignment due dates and test dates. These changes will be announced as early as possible.*