

Biology 116, General Biology Laboratory

Course Syllabus: Fall, 2021

Prelab Meets: Asynchronous Online – Prerecorded lectures (Posted on Monday mornings)

Lab Meets: Tues-Thurs, ISC 101 and ISC 103

INSTRUCTOR INFORMATION:

Dr. Robert Feissner: ISC 356, Ph: 245-5022,

e-mail: feissner@geneseo.edu Office hours: TBA, and by appointment.

Dr. Jacob McCartney: Section 01, 09: ISC 139C, Ph: 245-6050,

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Dr. Hristina Nedelkovska: Section 02, 08: Office: ISC 139B, Ph: 245-6396,

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Dr. Isidro Bosch: Section 03: Office: ISC 260, Ph: 245-5303,

e-mail: bosch@geneseo.edu Office hours: TBA, and by appointment.

Dr. Salvador Tarun: Section 04: Office: ISC 327D, Ph: TBA,

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Dr. Varuni Jamburuthugoda: Section 05: ISC 355. Ph: 245-5315,

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Dr. Jani Lewis: Section 06: Office: ISC 354, Ph: 245-5310,

e-mail: lewisj@geneseo.edu Office hours: TBA, and by appointment.

Dr. Suann Yang: Section 07: Office: ISC 256, Ph: 245-5311,

e-mail: yang@geneseo.edu Office hours: In person student hours (drop in anytime):

Mondays 1:30-2:20 PM in ISC 206

Online student hours (by appointment only): Wednesdays and Thursdays 1:30-2:20 PM; [make appt here](#) or email for additional times

Dr. Ming-Mei Chang: Section 10: Office: ISC 352, Ph: 245-5416,

e-mail: chang@geneseo.edu Office hours: TBA, and by appointment

Required Materials

You will be REQUIRED to come to each laboratory meeting with:

Lab notebook containing the laboratory printout (which you can obtain from Canvas), plain notebook paper, pencil and pen.

Laptop computer. Each group (lab bench) must have at least one laptop to use during the lab. The group is responsible for providing the laptop. Until lab groups are assigned, please bring your own laptop.

Personal Safety Equipment

- a. **Goggles will be required for the microbiology laboratory.** Each individual is responsible for providing their own goggles. You will not be able to perform this laboratory without goggles. (Goggles are available at the bookstore).
- b. **Lab coat.** While it is *advised* that you wear a lab coat during the lab microbiology lab, it is **not** a requirement. We will allow you to wear long pants and long-sleeved shirts. This lab coat will not be given to you but must be provided by you. (Lab coats are available at the bookstore).
- c. **Shoes with closed toes.** You must wear closed toe shoes at all times. If you show up in open-toed shoes you will not be able to participate in lab.

REQUIRED Textbooks:

- d. "A Student Handbook for Writing in Biology, sixth edition", Karin Knisely, Sinauer Freeman Publ, (ISBN: 9781319308322). The 5th edition is also suitable if you can find a cheap copy. This book is available from the bookstore and is a wonderful resource on how to write lab reports as well as how to use Microsoft Word and Microsoft Excel. This text provides important information for writing in upper-level biology courses, so you should hold onto it even after this semester is over.
- e. "A Primer in Biological Data Analysis and Visualization Using R, 2nd Edition", Gregg Hartvigsen, Columbia University Press., (ISBN 9780231202138). This book will help you understand statistical analysis and how to use the statistical software 'R'. You will use this textbook in Ecology next year and possibly in other advanced level biology classes so hold onto it.

Course Goals & Content

General Biology Laboratory (Biol 116) may be very different from your previous Biology laboratory courses in that it stresses the scientific process in Biology more than facts and details. Our main goal is to help you employ the scientific method to understanding problems in biology so that you can apply the scientific method to your upper level biology courses. The specific goals of General Biology Laboratory are threefold; 1) to understand experimental design and how to interpret results, 2) to introduce some of the techniques and equipment used in experimental biology, and 3) to illustrate some important biological concepts and information and the interrelatedness of these topics.

Since the approach of this laboratory stresses scientific process, it is important to understand that *how* you do the laboratory can often be as critical as the results you obtain. If you come in unprepared and work haphazardly it will be difficult to analyze your data and answer the questions asked in the laboratory manual. This approach is not meant to make the

laboratory difficult, but to give you a closer approximation of experimental laboratory science. It also gives you more control over your grade in the laboratory since your understanding of, and care in executing the lab experiments and activities should enhance your grade. The content of the laboratory course will rarely match-up with the material taught in the lecture class, so expect new content to be introduced in lab. For this reason, attendance is crucial to your understanding of the laboratory content.

Health and Wellbeing in the COVID-19 era

The changes brought on by COVID-19 have impacted us all in a number of ways, and will continue to do so at various times and to varying degrees during the upcoming semester. Your health and wellbeing are foundational to your ability to learn, and if you find that you are feeling unwell (physically or mentally) and it is impacting your ability to complete your coursework, please reach out. Because the learning environment will be different than it has been in the past, the indicators that usually let you know something is wrong may not be as clear to you or those around you as they would be during a typical semester. Please remember that it's never too late to ask for help.

In a similar way, I will occasionally ask for some patience and flexibility on your part. The pandemic is affecting faculty as well as students and creating demands that would not be present in an ordinary semester. If I am slow responding to an email, if I take some time to grade an assignment, if I am a bit late posting a video lecture, please be patient (and feel free to send me a 'What's Going ON, Feissner' e-mail; I will not be offended). You will never suffer any disadvantage in the course because of delays on my part.

This is a Face-to-face Lab

We greatly value the learning opportunities we'll have in our in-person class meetings and hope that you will actively participate in this important element of the learning process. The COVID-19 pandemic presents challenges to in-person learning, but by working together we can make this a safe experience.

It is essential that all students in in-person classes follow some basic processes to help keep themselves, other students, and our faculty and staff safe. Although these processes may seem inconvenient, they reflect current public health guidance that helps minimize the spread of coronavirus. Please incorporate these essential health and safety measures into your normal routine, consider the ways that your actions may affect the health and wellbeing of those around you, and try to approach this semester with a spirit of empathy and compassion.

Face-Masks and Other Behavior in the Classroom

Face masks are currently required in all instructional spaces (including classrooms, lecture halls, and laboratories) and all common areas including residence halls and academic buildings. If you forget your mask, please be sure to pick up a disposable one before entering the classroom. Masks must be worn for the duration of class. If you do not have a mask or are unwilling to wear one, you will be asked to leave the classroom. We cannot safely hold class if all students are not wearing face masks. Students who have concerns about wearing a face mask due to a documented disability need to contact the Office of Accessibility Services (access@geneseo.edu) to request reasonable accommodations

Attendance and Public Health

In the context of the COVID-19 pandemic, it is vital that we all do what we can to protect the health and safety of each other. If you are feeling unwell on a day that class meets in-person, do not attend. Remember that it is better to stay home if you are not feeling well than to attend class and risk spreading illness to others. Throughout the semester, please be proactive in communicating about absences and contact the Dean of Students if you expect to be out for an extended period of time. Rest assured that there will be no penalty for missing class and that I've designed our course so that there's a path for you to make up any learning that takes place in a class meeting you miss.

Instructional Team and Course Structure

The Biology 116 Laboratory course is a very large class (greater than 200 students every semester) requiring the cooperation of a teaching team, rather than a single instructor, to provide the best educational experience for all students. The Biol 116 teaching team consists of one faculty course leader (Dr. Feissner), faculty lab instructors, and experienced undergraduate lab assistants (ULAs). The roles and duties of each team member are described below.

Course Leaders: Dr. Feissner is the coordinator of Biol 116 and teaches the Monday online Prelab Lectures. The course leader oversees all labs and works closely with the faculty and Undergraduate Lab Instructors in preparing and teaching all labs.

Faculty Instructors: Faculty instructors are full-time faculty in the Biology Department that oversee lab sections. Due to the size of the Biol 116 class, two labs sections are held together in adjoining lab rooms. The Faculty instructor will work with one section during the lab period. The Faculty members listed on the front page of this syllabus will be leading labs this semester.

Undergraduate Lab Assistants (ULAs): ULAs are the secondary instructional personnel in each lab section. ULAs are exceptional upper-class students that have previously taken Biol 116 and have an interest in teaching a lab themselves. While your faculty instructor is in charge of your section, your ULA can be a go-to person for all questions regarding the lab, especially during the times when the Faculty Instructor is working with other lab groups. ULAs cannot address any grading or canvas issues.

Monday online Prelab lecture:

Each week there will be a short quiz that includes questions on the current lab (20 to 30%) and previous weeks' labs (70 – 80%). Quizzes will be administered online and must be completed outside of class within a limited window of time. Instructions for online quizzes will be provided in advance, and a practice quiz will be administered prior to the start of graded quizzes to iron out any technical problems you might face.

Lab groups:

Students will be assigned to laboratory groups the first laboratory period. Each lab bench will work as a 2, 3, or 4-person group (depending on enrollment). Your groups *will* change during the semester so it is helpful to note things that worked well with your group to share in your new groups.

Course Requirements

Quizzes:

Each quiz will be on material from the previous week(s) as well as the current week's lab. Quizzes will stress application of principles learned and interpretation of data as well as essential concepts. The most common types of questions require you to make observations, formulate a hypothesis, interpret data or predict the outcome of an experiment. Some of your quiz questions will come from the prelab questions and thus reading the lab and making sure you can answer the prelab questions before coming to the Monday afternoon lecture will not only enhance your laboratory experience but also be beneficial to your grade. Quizzes will only be administered online starting Monday mornings at 12:01 AM and will terminate at 11:59 PM the next day (48 hours). No makeup quizzes will be given. If you miss a quiz you must have a valid excuse to be excused from the grade.

Online Quiz Notes:

- 1) Quizzes consist of random questions pulled from a pool of similar questions. Therefore, every student will get a different quiz with different questions and different answers. Collaboration is not permitted.
- 2) Previewing the quiz online is not possible. Questions are displayed one at a time and must be answered before you can move on to the next question. **You may NOT return to a previous question.** Please answer carefully as credit will not be awarded for skipped questions.
- 3) Quiz answers will be available to review on the Friday after the quiz was administered. A review period of 7 days will be provided in which you may ask to have a quiz regraded. **After 7 days, no quiz grades will be changed.** All quizzes will remain visible for review at the end of the semester to study for the final exam. If you did not complete a quiz, you will NOT have access to the quiz for review.

Lab Final:

A laboratory final will be given during the final week of the course (12/13). Rather than stressing detailed information about particular labs, this exam will emphasize scientific processes and principles of experimental design. The best preparation for this test is active participation during all of the earlier labs and understanding of material on quizzes and the prelab lectures. The final exam will be online.

Written Assignments:

The written assignments will include brief reports in a written format stressing different aspects of scientific processes. **Most of these will be group assignments.** Your final grade on some of the written assignments may be weighted by your group members' assessment of your contribution to the final product.

Oral Presentation:

The ability to communicate effectively is essential for scientists. Your lab group will have to make a short report on your final results from your microbiology project (which will include some form of visual aid, usually a Powerpoint presentation).

Professionalism:

Your choices can affect the learning experiences of other students in the class as well as your own. Please arrive on time, stay through class, turn off your cell phone (including vibration mode), and use laptops and other technology only for class-related activities. It is understood that the continuing development of new technology can be beneficial to the process of education. For this reason, laptops and smartphones are permitted for note-taking and viewing classroom materials such as weekly lab handouts. Unacceptable classroom use of technology includes, but is not limited to social media websites, e-mail, and cell phone photography. Students that are viewed as distracting or disruptive may be asked to leave the classroom.

Grading

Grades will follow the following point distribution:

>92%, A;	77-79%, C+
90-92%, A-	73-77%, C
87-89%, B+	70-72%, C-
83-86%, B	60-69%, D
80-82%, B-	<60%, E

Under most circumstances, there will be no adjustment to your grades. There is no quota for particular letter grades. Helping your classmates in the lab (not to be confused with cheating) will not hurt your grade, and is instead more likely to improve your grade. Final grades will be rounded to the nearest whole percentage point at the end of the semester (87.2% -> 87%, 89.7% -> 90%), while grades for assignments themselves will NOT be rounded.

Grades will be based on the following system:

1. Quizzes	30%
2. Lab Final Exam	20%
3. Reports	50%
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Total	100%

Some Important Policies

Student Accommodations

SUNY Geneseo is dedicated to providing an equitable and inclusive educational experience for all students. The Office of Accessibility will coordinate reasonable accommodations for persons with documented physical, emotional, or cognitive disabilities, as well as medical conditions related to pregnancy or parenting. Students with letters of accommodation should submit a letter to each faculty member at the beginning of the semester and discuss specific arrangements. Please contact the Office of Disabilities <https://www.geneseo.edu/accessibility-office>

- Student responsibility: Please submit your letter of accommodations to your faculty instructor at the beginning of the semester and make an appointment to discuss arrangements.
- Instructor responsibility: We are committed to working with you to figure out how to create a just learning environment while meeting the learning outcomes of the course. Unless you communicate otherwise, we will keep all accommodations confidential.

Academic Integrity & Plagiarism

Geneseo's Library offers frequent workshops to help students understand how to paraphrase, quote, and cite outside sources properly. These sessions are meant to educate about the importance of using original ideas and language, and how to incorporate paraphrases and quotes into writing. The complete list of library workshops can be found at www.geneseo.edu/library/library-workshops. Academic dishonesty includes cheating, knowingly providing false information, plagiarizing, and any other form of academic misrepresentation. College policies and procedures regarding academic dishonesty are available at www.geneseo.edu/handbook/academic-dishonesty-policy.

Communication:

Check your e-mail daily in order to ensure that you receive reminders of what to bring to class, as changes in schedule are sometimes necessary. E-mail is also usually the fastest way to get in touch with us. Because our jobs require that we deal with many students, **please include your name, section # and Biol. 116 in all e-mails sent to us.**

Library Research Help:

If you need assistance finding information for this assignment, Milne Librarians may be able to help. You can speak with the reference librarian on duty between 10am and closing time most days (ask for help at the service desk) or chat with a librarian online by clicking the "I'm a Librarian" button on the library website (<http://www.geneseo.edu/library>). You can also contact Milne Library's Science Librarian by requesting an in-person meeting (<http://bit.ly/milneresearchconsultation>).

Exceptions:

Policies can have exceptions! When problems arise in completing class work, please make an appointment to talk with us. Sometimes it is possible to identify additional options or solutions that do not appear here.

BIOL 116: General Biology Laboratory
Fall, 2021 - Laboratory schedule: revised 8/17/21

Week #	Week of:	Laboratory	Quizzes and Notes
1	August 30	Intro to Biol 116 Safety and Dichotomous keys.	<ul style="list-style-type: none"> • Prelab meetings will be recorded and posted to Canvas by 8:00 AM on Monday mornings. Review is required before your lab meeting. • Practice Quiz
2	Sept. 6	Diversity and Taxonomy Part I (Skulls)	<ul style="list-style-type: none"> • QUIZ #1
3	Sept. 13	Phylogeny and an Introduction to Data Analysis using R	<ul style="list-style-type: none"> • QUIZ #2
4	Sept. 20	Scientific Inquiry - Termites	<ul style="list-style-type: none"> • QUIZ #3
5	Sept. 27	Biostatistics Using R	<ul style="list-style-type: none"> • QUIZ #4
6	Oct. 4	Diffusion	<ul style="list-style-type: none"> • QUIZ #5
7	Oct. 11	Fall Break - No in-lab meetings	<ul style="list-style-type: none"> • <i>n/a</i>
8	Oct. 18	Daphnia Lab Part I – herbal remedies	<ul style="list-style-type: none"> • QUIZ #6 •
9	Oct. 25	Daphnia Lab Part II – β -blockers	<ul style="list-style-type: none"> • QUIZ #7
10	Nov. 1	Microbiology Lab Part I	<ul style="list-style-type: none"> • QUIZ #8 • **BRING GOGGLES TO LAB THIS WEEK**
11	Nov. 8	Microbiology Lab Part II	<ul style="list-style-type: none"> • **BRING GOGGLES TO LAB THIS WEEK** • QUIZ #9
12	Nov. 15	Microbiology Lab Part III	<ul style="list-style-type: none"> • **BRING GOGGLES TO LAB THIS WEEK** • QUIZ #10
13	Nov. 22	Thanksgiving Break – no labs this week	<i>n/a</i>
14	Nov. 29	Microbiology Lab Part IV Review Chapter 7 from <u>Writing in Biology</u>	<ul style="list-style-type: none"> • **BRING GOGGLES TO LAB THIS WEEK** • QUIZ #11 – Review Quiz • Oral Presentation in lab week of Dec 6th
15	Dec. 6	Group Oral Presentations	In Lab - Schedule will be established week of 11/29
16	Dec. 13	Lab Final (Written)	<ul style="list-style-type: none"> • <i>Online, 16 hour window</i>

ASSIGNMENTS AND DUE DATES (Fall 2021) Revised 8/18/2021

Week #	Due Date Week of...	Assignments Due: Assignments are due in your assigned lab section. <i>Assignments in italics are individual assignments</i>
1	Aug 30	<u>Nothing Due</u>
2	Sept 6	<ul style="list-style-type: none"> Printed Dichotomous key – 10 points
3	Sept 13	<ul style="list-style-type: none"> Curriculum vitae – 10 pts. (instructions can be found on Canvas)
4	Sept 20	<ul style="list-style-type: none"> Taxonomy and R Lab Assignment – 50 pts.
5	Sept 27	<ul style="list-style-type: none"> Termite Questions – 50 pts.
6	Oct 4	<ul style="list-style-type: none"> Biostatistics Problem Set – 50 pts.
7	Oct 11	<u>Fall Break - Nothing Due</u>
8	Oct 18	<ul style="list-style-type: none"> Diffusion Lab Part I Written Assignment – 30 pts. Diffusion Lab Part II Written Assignment – 50 pts.
9	Oct 25	<ul style="list-style-type: none"> Daphnia Lab Part I Written Assignment. – 22 pts.
10	Nov 1	<u>Nothing Due</u>
11	Nov 8	<ul style="list-style-type: none"> Daphnia Lab Part II Written Assignment. – 50 pts. Microbiology Lab Assignment Part I – 20 pts.
12	Nov 15	<ul style="list-style-type: none"> Microbiology Lab Assignment Part II – 20 pts.
13	Nov 22	<u>Thanksgiving Break – Nothing Due</u>
14	Nov 29	<ul style="list-style-type: none"> Microbiology Lab Assignment Part III – 20 pts.
15	Dec 6	<ul style="list-style-type: none"> Microbiology Lab Presentation – 50 pts.
16	Dec 13	<ul style="list-style-type: none"> <i>Lab Final</i> online 12/13 - 75 pts.