

BIOL 223: Genetics Laboratory Syllabus, Spring 2021
Thursdays at 10:00 AM and 1:00 PM, Fridays at 1:00 PM

Course description (from student bulletin): Selected experiments designed to demonstrate the principles of genetics and to introduce a range of genetics techniques and model systems. Pre- or co-requisites: introductory chemistry and genetics (BIOL 222).

Instructor:

Dr. Kevin Militello
Office: ISC 357
militello@geneseo.edu

Online office hours (see Canvas for link)

Mondays: 2:30-4:00 PM
Thursdays: 10:00-11:30 AM
and by appointment

Dr. Hristina Nedelkovska
Office: ISC 139B
nedelkovska@geneseo.edu

Mondays: 10:30-11:30 AM
Wednesdays: 12:30-1:30 PM
Thursdays: 11:00-12:00 PM
Fridays: 4:00-5:00 PM
.....and by appointment

Lab Materials:

Each student should bring a notebook, calculator, pencil, and **sharpie** and their laptop every day. Students need to be able to access high-speed internet on **REMOTE** days so they can meet with their groups and complete the online activities for that week. A lab coat and goggles are optional but **NOT** required. If you do bring any PPE items, you cannot store them in the lab due to COVID-19 safety concerns.

Each week, lab procedures and activities will be posted on Canvas and some may be accompanied with a pre lab lecture. Be sure to read each lab thoroughly and watch any videos before you come to lab. Our lab time, especially this semester, is extremely limited, so we want to make the best of it!

Course goals:

- (1) Students will learn about experimental design of genetic studies
- (2) Students will learn to collect, analyze, and interpret data
- (3) Students will learn to communicate scientific results in written and oral form
- (4) Students will gain experience with a variety of laboratory skills and model organisms

Flow of the class:

This year, Genetics lab will be run using a HYBRID in person/remote model. That means you will attend in person every other week, as part of either Section A or B, and meet remotely with group members during remote weeks. While we are **IN LAB** we will be focusing on teaching you key laboratory skills, and provide the hands-on training that makes labs uniquely valuable. While we are **REMOTE** we will be focusing on the learning goals of experimental design, data analysis, and scientific communication, which are no less important than the hands-on skills.

Unlike some labs you've taken previously, the labs in this course do not have an outcome that can be determined or predicted ahead of time – so you won't know what "the right" answer is. Instead, you will learn how to determine **from the data you generate** what biological model is best supported. We are working together not only to ensure you can master techniques, but also to prepare you for future technical and research work in which the "answer" is almost never known!

In addition, there will be an **IN LAB** quiz every week that will focus on the new material as well as the material that we went over the week before. Therefore before you come to lab, you should watch the pre-lab lecture (if available), and read the lab in detail. That way, you will be ready to take the quiz and do the work when you come in. In lab time - due to COVID restrictions - you will

be working individually and socially distanced, wearing **FACEMASKS** and **GLOVES** at all times, with long hair **TIED BACK**. I will be there to assist with demonstrations of techniques and answering any questions you may have on the lab. For the use of shared equipment, we will go over sterilization techniques to be employed both before and after use.

On occasions when you need to come into the lab (e.g. to check on bacterial plates), you will sign up so you are the only person in the lab at that time, and again must follow all techniques to avoid contamination.

During REMOTE weeks, you will mostly do individual online activities or answer the end of lab questions from the previous week's lab as shown in the syllabus. All assignments will need to be submitted in Canvas (please pay attention to the due dates and times!). Lab reports will be written as a group of 4 students from the same section. Each student will have their own section to complete (which will need to be submitted in Canvas) and then the group will meet together to put the individual sections into a logical and coherent document which will be due the following week in lab. There will be a separate document on Canvas on writing lab reports and the grading criteria used.

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 you are scheduled to come 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 be proactive in communicating about absences and contact the Dean of Students if you expect to be out for an extended period of time.

The college has developed an online COVID-19 screening report for students. Be sure to familiarize yourself with this process and complete the brief screening report **before leaving for class**. If you are experiencing common symptoms of COVID-19, stay home and contact Health and Counseling Services as soon as possible. I strongly encourage you to set a daily reminder to fill out the screening report.

Facemasks are required in all instructional spaces and all common areas including residence halls and academic buildings. If you forget your mask, pick up a disposable one before entering any public space. 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. I cannot safely hold class if all students are not wearing face masks. Students who have concerns about wearing a facemask due to a documented disability need to contact the Office of Accessibility Services (access@geneseo.edu) to request reasonable accommodations. Please familiarize yourself with any special seating arrangements in the classroom and be sure to practice 6-foot physical distancing at all times. This includes entering and exiting the classroom.

Course Schedule – Subject to change!

	Section A	Section B
T 2/2 F 2/5	REMOTE Course Organization	REMOTE: Course Organization
T 2/9 F 2/12	IN LAB Quiz 1 1. Introduction to Techniques 2. Plant lab: Mendelian Genetics and Environmental Influence on traits	NO LAB
T 2/16 F 2/19	REMOTE 1. POSTLAB Canvas HW (individual) 2. Transformation video (Canvas submission individual) **Care for your plants!**	IN LAB Quiz 1 1. Introduction to Techniques 2. Plant lab: Mendelian Genetics and Environmental Influence on traits
T 2/23 F 2/26	IN LAB Quiz 2 1. Transformation Lab **Care for your plants!**	REMOTE 1. POSTLAB Canvas HW (individual) 2. Transformation video (Canvas submission individual) **Care for your plants!**
T 3/2 F 3/5	REJUVINATION DAY **Care for your plants!**	REJUVINATION DAY **Care for your plants!**
T 3/9 F 3/12	REMOTE 1. Mendelian genetics online activity 2. Canvas HW based on activity (individual) **Care for your plants!**	IN LAB Quiz 2 1. Transformation Lab **Care for your plants!**
T 3/16 F 3/19	IN LAB Quiz 3 1. Data Analysis (Mendelian genetics lab and Transformation lab)	REMOTE 1. Mendelian genetics online activity 2. Canvas HW based on activity (individual) **Care for your plants!**
T 3/23 F 3/26	REMOTE 1. Work on Mendelian genetics lab report (GROUP WORK) **each student must submit their own section on Canvas**	IN LAB Quiz 3 1. Data Analysis (Mendelian genetics lab and Transformation lab)

T 3/30 F 4/2	IN LAB Quiz 4 1. Luria Delbruck lab 2. Mendelian genetics lab report due in class (GROUP WORK)	REMOTE 1. Work on Mendelian genetics lab report (GROUP WORK) **each student must submit their own section on Canvas**
T 4/6 F 4/9	REMOTE 1. POSTLAB Canvas HW (individual) 2. Luria Delbruck online activity (Canvas submission individual)	IN LAB Quiz 4 1. Luria Delbruck lab 2. Mendelian genetics lab report due in class (GROUP WORK)
T 4/13 F 4/16	IN LAB Quiz 5 1. Virus lab, Week 1	REMOTE 1. POSTLAB Canvas HW (individual) 2. Luria Delbruck online activity (Canvas submission individual)
T 4/20 F 4/23	REMOTE 1. Work on Luria Delbruck lab report (GROUP WORK) **each student must submit their own section on Canvas**	IN LAB Quiz 5 1. Virus lab, Week 1
T 4/27 F 4/30	IN LAB Quiz 6 1. Virus lab, Week 2 2. Luria Delbruck lab report due in class (GROUP WORK)	REMOTE 1. Work on Luria Delbruck lab report (GROUP WORK) **each student must submit their own section on Canvas**
T 5/4 F 5/7	REMOTE 1. POSTLAB Canvas HW (individual)	IN LAB Quiz 6 1. Virus lab, Week 2 2. Luria Delbruck lab report due in class (GROUP WORK)
T 5/10 F 5/17	REMOTE Group presentations on Virus Lab	REMOTE 1. POSTLAB Canvas HW (individual) 2. Group presentations on Virus Lab

Procedures:

- Facemasks are always required when in-person. Follow procedures to sanitize all shared equipment and benches before and after use.
- Always wash your hands when you enter and leave lab. Maintain social distancing at all times (6+ ft). During entry to the lab this means waiting until the atrium is clear.
- Leave your backpacks and coats in the atrium area. Absolutely no food, drink, or cell phones allowed at the bench.
- Be sure you know what protective gear is necessary and follow lab safety guidelines. Know where safety equipment is located.
- Follow proper waste disposal procedures (bacterial/biohazard and chemical waste separate from other waste).
- Students should check Canvas and their Geneseo email regularly for course update

Evaluation:

Grades will be based on criteria listed in the table below

Activity	Weight (percentage)
Lab Quizzes	30 %
Homework/Online Activities	30 %
Lab Reports	30 %
Oral Presentation	10 %

Grading Scale:

Grades are based on the percentage of points you earned, weighted as above (no “curving”) The following scale will be used to calculate final grades, rounding the hundredths place.

Standard Grading option:

A 93.0-100%	B+ 87.0-89.9%	C+ 77.0-79.9%	D 60.0-69.9%	E <60%
A- 90.0-92.9%	B 83.0-86.9%	C 73.0-76.9%		
	B- 80.0-82.9%	C- 70.0-72.9%		

Pass/Fail option: P 70.0-100% **F** <70.0%

NOTE: In the case of you needing to be absent from in person class, please keep the lines of communication open! You won't be penalized, but we need to figure out how best to help you meet the learning goals of the lab.

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Students with Disabilities

SUNY Geneseo will make reasonable accommodations for persons with documented physical, emotional, or cognitive disabilities. Accommodations will be made for medical conditions related to pregnancy or parenting. Students should contact Ms. Heather Packer in the Office of Disability Services (disabilityservices@geneseo.edu or 585-245-5112) and their faculty to discuss needed accommodations as early as possible in the semester. Exams at the testing center should be scheduled for the same day as the exam is held in class.

Mental Health Policy

We take mental health problems exactly as seriously as we would issues with your physical health. Most people at some time in their lives experience an episode of diminished mental health, just as they do at some point experience periods of injury and diminished physical health. Mental health issues including significant stress, mood changes, excessive worry, or problems with eating and/or sleeping can interfere with optimal academic performance. If the source of your symptoms is directly related to this class, please speak with us and we will work together to find a remedy. However, problems with relationships, family worries, loss, or a

personal struggle or crisis can also contribute we cannot urge enough how important it is that you know help is available and seek it if you have need. SUNY Geneseo provides mental health services to support the academic success and health of students. Counseling Services, a part of the Lauderdale Center for Student Health & Counseling, offers free, confidential psychological services to help you manage personal challenges that may threaten your well-being. Call 585-245-5716 to make an appointment (and also see this page for emergency resources: [Emergency Resources](https://www.geneseo.edu/health/emergency-info) <https://www.geneseo.edu/health/emergency-info>)

Academic Dishonesty & Plagiarism

Presenting others' work as if it were your own, or providing such help to others, constitutes academic dishonesty. This is important not only due to fairness, but also so that instructors can provide feedback that is useful to improving your understanding and skills (feedback on work that is not your own is not useful to anyone!). Of course, in the case of group work the product will include input from all members, and of course, students may share data across groups or even classes when appropriate. Any work that you are presenting as your own (including reports, quizzes, etc) must be original to you. If you're struggling in class, please ask for help rather than resort to academic dishonesty! We are here to assist you if you have any concerns. SUNY Geneseo has instituted policies and procedures that must be followed in the event of an occurrence of Academic dishonesty which can be found here: [Academic Dishonesty: https://www.geneseo.edu/dean_office/dishonesty](https://www.geneseo.edu/dean_office/dishonesty)). Immediate consequences include a report to the department chair and Dean of the College and a loss of points on impacted assignment(s).