

# BIOSC 0350 GENETICS

## Fall 2021 Syllabus

*Changes to the syllabus will be announced on Canvas as needed.*

### **Faculty**

**Dr. Lesley Ashmore**  
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412-648-7867, [lja7@pitt.edu](mailto:lja7@pitt.edu)

**Office Hours:** can be accessed using this link:  
Monday and Friday 4pm – 5pm  
Tuesday and Thursday 11am- 12pm  
Wednesday 10am – 11am

### **Class Times**

**Tuesdays and Thursdays 9:25 – 10:40 am**  
Location: 324 Cathedral of Learning  
All classes are recorded. To view recordings, click on “Panopto Video” in the Canvas navigation menu.

### **Recitation Times**

**Tuesday 11:00 – 11:50 am**  
**Wednesday 9:00 – 9:50 am**  
**Wednesday 10:00 – 10:50 am**  
**Wednesday 4:00 – 4:00 pm**  
You must be registered for the lecture **and** for one recitation section.  
Recitations are not recorded.

### **Course Objectives**

The goal of this course is to provide students with an overview of genetics from the work of Mendel to the current understanding of the gene at the molecular level. Lectures will introduce basic concepts and terminology, as well as emphasize the importance of experimental approaches used to understand genetics. We will use problems to illustrate concepts and show practical application of genetics to current situations. Additional use of textbook problems and graded problem sets will help students develop critical thinking and problem solving skills.

### **Prerequisites**

You must have passed Foundations of Biology 2 (BIOSC 0160 or equivalent) and General Chemistry 2 (CHEM 0120 or equivalent) with a C or better before taking BIOSC 0350.

### **Textbook**

**Required:** The textbook we are using is: *Genetics: from Genes to Genomes*, 7th Edition (2017) by Hartwell, Hood, Goldberg, Reynolds, and Silver.

Registration for this course will automatically enroll you into Connect Inclusive Access that comes with the ebook. You may opt out of purchasing the ebook. You may also purchase a used copy of the 6<sup>th</sup> Edition.

**The solutions manual will be posted on Canvas.**

### **Course Delivery and Associated websites**

In this course we will be using **Canvas** as the Learning Management System.

- Recitation assignments, problem sets, and quizzes will be delivered via **Canvas**.
- Lectures will be recorded using **Panopto**; recordings will be available in the Panopto folder.
- Office hours will be held via **Zoom** or in person (see Canvas for locations)

You will be able to access all of these programs through the Canvas page for this class.

**Unless the University operating posture changes, all lectures will be held in person**

- Lectures are recorded; recitations are not.
- Zoom attendance of lectures may be offered under special circumstances
- Quizzes will be delivered online, and are open book, open notes.

***Weekly Lectures and Reading Assignments***

**All course materials will be posted on the “modules” page of Canvas.** There will also be a list of links to help you quickly find all of the assignments and documents related to the material for that module.

**You are asked to skim the reading assignments before coming to class.** In depth reading assignments can be found in the documents at the top of the module. There will be direct links to the ebook chapters that are assigned, which you can access from Canvas or Connect.

**Each class has a few problems that will be solved during the class.** Turn in the answers via Canvas to earn participation credit for the day.

***Weekly Recitation***

**The recitation for BIOSC 0350 is an important component of this course.** The teaching assistant will review lecture topics and answer questions. Every week sample problems will be solved in a collaborative environment. Some of these problems are from past exams so that you can become familiar with exam question format.

**Each recitation has a few problems that will be solved during the class.** Questions will be posted prior to the recitation and you are encouraged to try the problems ahead of time. Turn in the answers on Canvas to earn participation credit.

***Weekly Problem Sets***

Weekly homework problem sets will be short assignments that are meant to take about an hour per week. They will help prepare you to answer challenging exam questions.

**Late assignments are not accepted;** the answer key will be posted after the due date, to allow students time to evaluate their answers and prepare for quizzes.

**Students are encouraged to work together on the problem sets** but must turn in their own work. All short answers must be in your own words.

**The following are suitable resources a student may consult for the problem sets:**

instructor, the textbook, recorded lectures, fellow students, and TAs/UTAs. Note that the use of answer keys (for example, corrected homework obtained from prior students or the internet) or other similar resources is cheating. Consulting online tutoring services or other online websites for help with homework or exams is specifically forbidden.

***Participation***

**Studies have shown that student engagement is the key variable for student success in online classes.** Participation credit is earned by:

- Attending lecture and submitting answers to in-class problems
- Attending recitations and submitting answers to worksheets
- Participating in discussion board posts

***Biweekly Quizzes and Final Exam***

**In lieu of midterm exams, there will be seven quizzes.** Quizzes are meant to be lower stress, and are asynchronous. They are delivered via Canvas.

**Every student gets two “redos”** they can use to make up a missed quiz, or to retake a quiz for a higher score. Quizzes are only somewhat cumulative; often answering questions in later quizzes requires the mastery of material from a previous quiz.

**A synchronous final exam** will be held during the week of April 26<sup>th</sup>. All students must take and pass the final to pass the class. **The final exam schedule has not yet been posted**

by the registrar. The final exam is cumulative. The format of the exam has not yet been determined.

**All the quizzes are open-book**, meaning you may use your own class notes or the textbook as resources during the exam. You **may not** discuss questions with others in the class when the exam is open. Posting questions to internet websites or consulting the internet for solutions is a violation of academic integrity.

### **Makeup Work**

Due to the extraordinary circumstances this semester, I will strive to be as flexible as I can with students having various health, life or technical issues. **Please contact me as soon as possible if you are having difficulty keeping up with the material.**

**Problem Sets:** There are no makeups for a missed problem set, because answers will be discussed in class and posted on Canvas after the due date. If you become too ill to keep up with problem sets, please let me know as soon as possible. I will drop the lowest problem set score.

**Participation Points:** Students can turn in answers to lecture and recitation questions at any time before the deadline, even if they miss the in-person class. Missed deadlines cannot be made up.

**Makeup quizzes:** The emphasis of this course is on mastery of the material; to this end you will have the opportunity to **repeat at least one of the quizzes in addition to the first quiz** to improve your score. Answer keys to quizzes will not be provided for this reason. **If you miss a quiz for any reason, you can use one of your two makeups to take it again.** If you find yourself in a position where you'll miss more than two quizzes, please contact the professor.

Because there are multiple versions of quiz questions, you will have new questions every time you retake a quiz. There may be circumstances under which I will allow the class to retake a third quiz.

### **Final Grade**

Your letter grade will be based on the percentage of the maximum of 750 points you earn on your exams, participation, and homework. The point breakdown is as follows:

Top ten problem set scores (10 points each) .....100 points  
Seven quiz grades (50 points each).....350 points  
Collected >90% of offered participation points..... 50 points  
Cumulative final exam .....250 points

**Participation points earned in class are weighted; they are not equal to exam points.**

You must **collect 90% of the offered participation points** to earn full credit toward your final grade. Example: I offered 500 total participation points, and you earned 425 of them (85%). Your final participation grade will be 47 out of 50.

Following calculation of the total percentage, grades will be assigned on the following scale:

A+ 98 - 100%	A 92 - 97%	A- 90 - 91%
B+ 88 - 89%	B 82 - 87%	B- 80 - 81%
C+ 78 - 79%	C 72 - 77%	C- 70 - 71%
D+ 68 - 69%	D 62 - 67%	D- 60 - 61%
F 59% and below		

## **G Grades**

**G grades, according to SAS guidelines, are to be given only when students who have been attending a course and have been making regular progress are prevented by circumstances beyond their control from completing the course after it is too late to withdraw.**

If your life circumstances require you to miss multiple weeks of class, then a G grade would be appropriate as long as you have been engaging with the class and completing assignments up to that point.

A G grade is **not** appropriate for a student who can no longer reasonably pass the class by completing the remaining material, regardless of life circumstances.

Please contact the professor if you wish to petition for a G grade. We'll set a deadline for you to finish the remainder of the material, and work out alternative methods of assessment if necessary.

## **Academic Integrity Policy**

Cheating/plagiarism will not be tolerated. If you choose to do this, and you are caught, you will most likely fail the class and you WILL be reported to the Dean.

Students in this course will be expected to comply with the [University of Pittsburgh's Policy on Academic Integrity](#). Any student suspected of violating this obligation for any reason during the semester will be required to participate in the procedural process, initiated at the instructor level, as outlined in the University Guidelines on Academic Integrity. This may include, but is not limited to, the confiscation of the examination of any individual suspected of violating University Policy. Furthermore, no student may bring any unauthorized materials to an exam, including dictionaries and programmable calculators.

To learn more about Academic Integrity, visit the [Academic Integrity Guide](#) for an overview of the topic. For hands-on practice, complete the [Understanding and Avoiding Plagiarism tutorial](#).

**You are encouraged to collaborate with others in this class EXCEPT during quizzes and final exam. You may NOT work with others on the quizzes or final exam, or use ANY resources outside of your notes and textbook.**

### **Examples of cheating include, but are not limited to:**

- Copying another student's answer. While I encourage collaboration on all non-quiz assignments, **you must always use your own words.**
- Posting ANY class material to online homework sites. This includes any assignment, recitation, problem set, or quiz question. **Doing so is not only an academic integrity violation, it is also a violation of University copyright.**
- Discussing and sharing quiz questions during the quiz.
- Creating a Groupme or Discord account for the sole purpose of discussion of material during the quizzes.
- Using any resources **other than your book and your notes** to answer quiz or homework questions (ex: Google, Wikipedia, Reddit, homework "help" sites) is cheating. **Permitted resources for completing exams are your lecture notes,**

textbook and the recordings of the lectures.

**If a student is suspected of cheating, this is the procedure:**

- We will meet to discuss the infraction and the sanction. The sanction is generally a zero for the assignment or quiz. In addition, I will send an academic integrity violation report to the Dean.
- The student may choose to appeal, in which case we will follow the procedures outlined here: [www.cfo.pitt.edu/policies/policy/02/02-03-02.html](http://www.cfo.pitt.edu/policies/policy/02/02-03-02.html).

### **Disability Resources and Services**

If you have a disability for which you are, or may be, requesting an accommodation, you are encouraged to contact both the instructor for this course and the Office of Disability Resources and Services, 140 William Pitt Union, 412-648-7890/412-624-3346 (Fax), as early as possible in the term. Disability Resources and Services will verify your disability and determine reasonable accommodations for this course.

For students who require additional time on quizzes, I have to set this for every quiz. **Please let me know if I forgot to do it as soon as you open the quiz.**

**I can be flexible for all deadlines for all assignments except problem sets.** Students are given a week to complete these, which should be more than ample time. Please understand that the answer key will be posted for study purposes as soon as the deadline has passed. *To postpone the posting of the answer key will cause a hardship for the entire class.* A student can miss one problem set without penalty to their grade. Students with accommodations for flexible deadlines may ask to be excused from additional problem sets.

**All students get two free redos of quizzes,** which are to be used to make up quizzes that were missed for any reason, including illness. If your particular condition may cause you to miss MORE than two quizzes, please contact me as soon as possible. In addition, students with accommodations for flexible deadlines may ask for an extension for the quizzes.

### **E-mail Communication Policy**

Each student is issued a University e-mail address (username@pitt.edu) upon admittance. This e-mail address may be used by the University for official communication with students. Students are expected to read e-mail sent to this account on a regular basis. Failure to read and react to University communications in a timely manner does not absolve the student from knowing and complying with the content of the communications. The University provides an e-mail forwarding service that allows students to read their e-mail via other service providers (e.g., Hotmail, AOL, Yahoo). Students that choose to forward their e-mail from their pitt.edu address to another address do so at their own risk. If e-mail is lost as a result of forwarding, it does not absolve the student from responding to official communications sent to their University e-mail address. To forward e-mail sent to your University account, go to <http://accounts.pitt.edu>, log into your account, click on **Edit Forwarding Addresses**, and follow the instructions on the page. Be sure to log out of your account when you have finished. For the full E-mail Communication Policy, go to [www.bc.pitt.edu/policies/policy/09/09-10-01.html](http://www.bc.pitt.edu/policies/policy/09/09-10-01.html).)

**Ebook technical issues** should be directed to McGraw-Hill's technical support.

**Zoom technical issues** should be direction to Pitt's technical support.

**Canvas:** please take the time to have Canvas notifications forwarded to your email address.

**Content-related questions should** be posted to the class discussion board so everyone can benefit.

**Please allow at least 24 hours for a reply to an email and longer over weekends.** Also, please understand that I have many emails to respond to, so my email style tends to be very direct and to the point. Some may interpret this to mean I am impatient or irritated at them. This is not true; I just have a minimalist email style.

### ***Diversity and Inclusion***

The University of Pittsburgh does not tolerate any form of discrimination, harassment, or retaliation based on disability, race, color, religion, national origin, ancestry, genetic information, marital status, familial status, sex, age, sexual orientation, veteran status or gender identity or other factors as stated in the University's Title IX policy. The University is committed to taking prompt action to end a hostile environment that interferes with the University's mission. For more information about policies, procedures, and practices, see: : <https://www.diversity.pitt.edu/civil-rights-title-ix-compliance/policies-procedures-and-practices>.

**I ask that everyone in the class strive to help ensure that other members of this class can learn in a supportive and respectful environment.** If there are instances of the aforementioned issues, please contact the Title IX Coordinator, by calling 412-648-7860, or e-mailing [titleixcoordinator@pitt.edu](mailto:titleixcoordinator@pitt.edu). Reports can also be filed online: <https://www.diversity.pitt.edu/civil-rights-title-ix-compliance/make-report/report-form>. You may also choose to report this to a faculty/staff member; they are required to communicate this to the University's Office of Diversity and Inclusion. If you wish to maintain complete confidentiality, you may also contact the University Counseling Center (412-648-7930).

### ***Classroom etiquette***

Please help us maintain an effective learning environment by not distracting your fellow students. To this end:

- Stay respectful of other students and your professor.
- Please use your smart devices appropriately in class-- stay on task and avoid surfing the internet or viewing social media sites. Turn cell phones to vibrate and refrain from calls during lectures and recitations
- Keep talking to a minimum outside of designated discussion times.
- Please limit discussion to biology topics, and to designated discussion times.

Students who disrupt the learning environment, or who employ personal electronic devices inappropriately during lectures or discussions, may be asked to leave the lecture hall.

### ***COVID-19 Safety Statement***

During this pandemic, it is extremely important that you abide by the [public health regulations](#) , the University of Pittsburgh's [health standards and guidelines](#), and [Pitt's Health Rules](#). These rules have been developed to protect the health and safety of all of us. Universal [face covering](#) is required in all classrooms and in every building on campus, without exceptions, regardless of vaccination status. This means you must wear a face covering that properly covers your nose and mouth when you are in the classroom. **If you do not comply, you will be asked to leave class.** It is your responsibility have the required face covering when entering a university building or classroom. For the most up-to-date information and guidance, please visit [coronavirus.pitt.edu](https://coronavirus.pitt.edu) and check your Pitt email for updates before each class.

Missing a class due to noncompliance with the mask policy counts as an **unexcused absence** and you will miss your participation points for the day. They cannot be made up.

**If I'm required to disrupt class to deal with a noncompliant student, that student's final grade will be reduced by one letter grade for each disruption.** *I really don't think it will come to this, but I'm required to spell out all consequences in my syllabus.*

If you are required to isolate or quarantine, become sick, or are unable to come to class, contact me as soon as possible to discuss arrangements for make up work.

I have put a lot of planning into my course to make it flexible and accommodating for you, and I have agreed to teach classes in person for your sakes, not mine. Please do me (and my bad lungs) the same courtesy, and wear your mask.

### ***Take Time for Self-Care***

**Everyone is operating at a high level of stress this semester. Remember to be kind, not only to others, but to yourself.** It's another reason I am emphasizing engagement this semester. *Please don't do this class alone*—take the time to fight the isolation by connecting with the professor, the TA and UTAs, and your fellow students.

**Do your best to maintain a healthy lifestyle this semester by eating well,** exercising, avoiding drugs and alcohol, getting enough sleep, and taking time to relax. Despite what you might hear, using your time to take care of yourself will actually help you achieve your academic goals better than spending too much time studying and missing sleep.

All of us benefit from support and guidance during times of struggle. **There are many helpful resources available at Pitt.** An important part of the college experience is learning how to ask for help. Take the time to learn about all that's available and take advantage of it. Ask for support sooner rather than later – this always helps. If you or anyone you know experiences any academic stress, difficult life events, or difficult feelings like anxiety or depression, we strongly encourage you to seek support. Consider reaching out to a friend, faculty or family member you trust for assistance connecting to the support that can help.

**The University Counseling Center is here for you:** call 412-648-7930 and visit their website.

**If you or someone you know is feeling suicidal,** call someone immediately, day or night: University Counseling Center (UCC): 412 648-7930

**University Counseling Center Mental Health Crisis Response:** 412-648-7930 x1 Resolve Crisis Network: 888-796-8226 (888-7-YOU-CAN)

**If the situation is life threatening, call the Police:** On-campus: Pitt Police: 412-268-2121; Off-campus: 911

*Please let me know if there is anything going on that is preventing you from doing your best in this class. I can't help you if I don't know what's going on. Don't wait until the end of the semester, after all the points are earned. Contact me as soon as possible with your difficulties and I'll do my best to help you catch up.*

# Genetics, Fall 2021 Schedule

All changes to the schedule will be posted via Canvas announcements

All assignments are to be completed in Canvas.

Week	Date		Topic
1	9/1	T	Lecture 1: Intro to class; review of concepts
		T/W	No recitations this week!
	9/3	Th	<b>Practice Quiz! Topics: biology review (see announcements)</b> Lecture 2: cracking the code I
2	9/7	T	Lecture 3: cracking the code II
		T/W	Recitation 1: review lecture 2 and 3
	9/9	Th	Lecture 4: Changing the Code I <b>Cracking the Code Problem set 1 due Friday by 8 pm</b>
3	9/14	T	Lecture 5: Changing the Code II
		T/W	Recitation 2: review lectures 4 and 5
	9/16	Th	Lecture 6: Maintaining the Code I ***online lecture, no class*** <b>Changing the Code Problem set 2 due Friday by 8 pm</b>
4	9/21	T	<b>Quiz 2! Topics: lectures 2-5</b> Lecture 7: Maintaining the Code II
		T/W	Recitation 3: reviews lectures 6 and 7
	9/23	Th	Lecture 8: Meiosis and Mitosis I <b>Maintaining the code problem set 3 due Friday by 8 pm</b>
5	9/27	T	Lecture 9: Meiosis and Mitosis II
		T/W	Recitation 4: reviews lectures 8 and 9
	9/29	Th	Lecture 10: Mendelian Inheritance Patterns I <b>Meiosis and Mitosis Problem set 4 due Friday by 8 pm</b>
6	10/5	T	<b>Quiz 3! Topics: lectures 6-9</b> Lecture 11: Mendelian Inheritance Patterns II
		T/W	Recitation 5: reviews lectures 10 and 11
	10/7	Th	Lecture 12: Linkage and Mapping <b>Mendelian Inheritance Patterns Problem set 5 due Friday by 8 pm</b>
7	10/12	T	Lecture 13: Linkage and Mapping II
		T/W	Recitation 6: reviews lectures 12 and 13
	10/14	Th	Lecture 14: Characterizing Mutations I <b>Linkage and Mapping Problem set 6 due Friday by 8 pm</b>
8	10/19	T	<b>Quiz 4! Topics: lectures 10-13</b>

			Lecture 15: Characterizing mutations II
		<b>T/W</b>	Recitation 7: reviews lectures 14 and 15
	<b>10/21</b>	<b>Th</b>	Lecture 16: Biotechnology I <b>Characterizing Mutations Problem set 7 due Friday by 8 pm</b>
<b>9</b>	<b>10/27</b>	<b>T</b>	Lecture 17: Biotechnology II
		<b>T/W</b>	Recitation 8: Reviews lectures 16 and 17
	<b>10/29</b>	<b>Th</b>	Lecture 18: Genomics & Forensics <b>Biotechnology Problem set 8 due Friday by 8 pm</b>
<b>10</b>	<b>11/2</b>	<b>T</b>	<b>Quiz 5! Topics: lectures 14-17</b> Lecture 19: Regulation of Transcription I
		<b>T/W</b>	Recitation 9: reviews lectures 18
	<b>11/4</b>	<b>Th</b>	Lecture 20: Regulation of Transcription II <b>Regulation of Transcription Problem set 9 due Friday by 8 pm</b>
	<b>11/9</b>	<b>T</b>	Lecture 21: Regulation of Transcription III
<b>11</b>		<b>T/W</b>	Recitation 10: reviews lectures 19, 20, and 21
	<b>11/11</b>	<b>Th</b>	Lecture 22: Epigenetics and Chromatin remodeling I <b>Epigenetics Problem set 10 due Friday by 8 pm</b>
	<b>11/16</b>	<b>T</b>	<b>Quiz 6! Topics: lectures 18-21</b> Lecture 23: Epigenetics and Chromatin remodeling II
<b>12</b>		<b>T/W</b>	Recitation 10: Reviews lectures 22 and 23
	<b>11/18</b>	<b>Th</b>	Lecture 24: Fingerprinting and Positional Cloning I <b>No problem set due this week!</b>
	<b>11/23</b>	<b>T</b>	Thanksgiving break—no classes this week
		<b>T/W</b>	
	<b>11/25</b>	<b>Th</b>	
<b>14</b>	<b>12/1</b>	<b>T</b>	Lecture 25: Positional Cloning II
		<b>T/W</b>	Recitation 12: reviews lectures 24 and 25
	<b>12/3</b>	<b>Th</b>	Lecture 26: <i>TBA</i> <b>Positional cloning problem set 11 due Friday by 8 pm</b>
<b>15</b>	<b>12/7</b>	<b>T</b>	<b>Quiz 7! Topics: lectures 22-25</b> Lecture 27: <i>TBA</i>
		<b>T/W</b>	Recitation 13: reviews lectures 26 and 27
		<b>Th</b>	Lecture 28: <i>full semester review</i> <b>Problem set 12 due Friday by 8 pm</b>
	<b>12/13 – 12/18</b>	<b>??</b>	<b>Final exam (synchronous, not yet scheduled)</b>