

01:447:380 GENETICS – Spring 2022

LECTURE INSTRUCTOR

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OFFICE HOURS

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Office hours will take place through Zoom beginning during Week 2. Feel free to log on at any time during the hours listed and stay as long as you'd like. I am also happy to meet at other times by appointment.

RECITATION INSTRUCTORS

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COURSE WEBSITE

<https://canvas.rutgers.edu/>

TECHNOLOGY REQUIREMENTS

High-speed internet access

Device with camera and microphone

Please visit the [Rutgers Student Tech Guide](#) page for resources available to all students. If you do not have the appropriate technology for financial reasons, please email Dean of Students deanofstudents@echo.rutgers.edu for assistance. If you are facing other financial hardships, please visit the Office of Financial Aid at <https://financialaid.rutgers.edu/>.

For tech help with Canvas, please visit <https://it.rutgers.edu/help-support>.

COURSE DESCRIPTION

Genetics 380 is a 4-credit course designed to teach students basic concepts of Genetics. Course material will be introduced in lecture videos posted weekly on Canvas. Understanding of this material will be tested and reinforced by:

1. completing questions embedded in lecture videos (posted on Canvas)
2. attending and participating in one 80-minute class meeting each week with Dr. Glodowski (in-person); Here, students will work in groups to complete an online assignment (posted on Achieve)
3. completing a weekly quiz before recitation (posted on Canvas)
4. attending and participating in one 50-minute recitation each week (in-person); Here, students will work in groups to complete a problem set (posted on Canvas)

The table below lists work that will be completed weekly, as well as when various activities will be available and when they are due. In addition, three exams (worth 100 points each) will be held via Canvas (see Exam Policies below for more info). Each weekly activity is described in more detail in other sections of this syllabus. Please note that suggested readings in the text are listed on the lecture schedule and should be done as needed to supplement info provided in lecture videos.

Weekly Activities	When is it available?	When is it due?	Where is it posted?	How many points is it worth?
Lecture video with questions embedded (2 lectures per week)	Mondays at 7am	Sundays by 11:59pm	Canvas	2 points per lecture
Online Assignment (2 per week)	During your class meeting time	At the end of your class meeting	Achieve (accessed via Canvas)	2 points per assignment
Recitation Quiz (1 per week)	Fridays at 5pm	Before your recitation meets	Canvas	5 points
Recitation Problem Sets (1 problem set per week)	Fridays at 5pm	Discussed during your recitation	Canvas	See recitation class meeting
Recitation Meeting (1 meeting per week)	Happens during your recitation section's scheduled time	At the end of recitation meeting , your TA will tell you how to submit group work	Happens via Zoom or in-person, depending on your section	5 points (includes attendance and arrival on time, participation and group work)

REQUIRED COURSE MATERIAL

Access to Achieve Learning Site

This site contains all online homework assignments AND the e-version of the required text, Genetics: A Conceptual Approach 7th edition by BA Pierce ISBN: 1-319-21680-3. Therefore, it is **not necessary** to purchase a hard copy of the textbook.

Use the following steps to log onto Achieve for the first time:

1. On the Genetics 380 course Canvas site, click the “Modules” tab listed on the left.
2. In the “Course Essentials” module, click “Student Registration – Start Here”
3. Enter your first name, last name and email address associated with Canvas. Note that the email address entered here **MUST MATCH** the email address you use on Canvas.
4. You are now enrolled in the course on Achieve.
5. To view any specific online assignment through Canvas, click the link listed in the relevant weekly module.
6. To view the e-version of the text and all other optional materials posted on the Achieve site, click the “Achieve” link listed in the “Course Essentials” module.

MORE DETAILS:

<https://macmillan.force.com/macmillanlearning/s/article/Students-Register-for-Achieve-courses-via-your-school-s-LMS>

Student Support:

<https://macmillan.force.com/macmillanlearning/s/chat-with-us>

LEARNING OBJECTIVES

1. Students will be able to describe Mendel's Two Laws and show how they relate to the process of meiosis by diagramming chromosome positions during various steps of meiosis. Students will also be able to describe phenotypic and genotypic effects on an organism if meiosis does not happen as normal.
2. Students will be able to describe experimental procedures and interpret theoretical results that led to conclusions fundamental to the field of Genetics, including work done by Hershey & Chase, Meselson & Stahl, Taylor and others.
3. Students will be able to apply multiple techniques to solve basic Genetics problems involving various modes of inheritance as well as both continuous and discontinuous traits.
4. Students will be able to analyze pedigree diagrams and distinguish between simple and complex modes of inheritance.
5. Students will be able to diagram the process of gene expression (including transcription and translation), identifying and describing the functions of essential proteins. Students will also be able to compare and contrast gene expression and its regulation in prokaryotes and eukaryotes.
6. Students will be able to list, describe, compare and contrast the functional implications of several different types of DNA mutations as well as different cellular repair mechanisms.
7. Students will be able to describe the general methods of and applications for various biotechnology techniques, including recombinant DNA technology, DNA sequencing, microarray analysis, CRISPR-Cas and others.
8. Students will be familiar with basic concepts in the areas of population genetics and quantitative genetics. In addition, students will be able to solve basic problems dealing with population and quantitative genetics.

EXAM POLICIES

There will be three exams in this course. They will all be held online via the course Canvas site. All exams will be 1 hour and 20 minutes. Exams 1 and 2 will be held on ??? at the scheduled lecture time (??am – ??pm). The final exam, which is NOT CUMULATIVE, will be held at a date and time that follows Rutgers Final Exam Schedule. Exam dates and times are listed below as well as on the lecture schedule posted on the course Canvas site. Makeup exams will be scheduled at the discretion of the instructor. If a makeup exam is requested, the course instructor must be notified within 12 hours of the scheduled exam period.

Exam	Date	Time	Material Covered
1	??	??	Lectures 1 – 9
2	??	??	Lectures 10 – 16; 18
3 (Final)	??	??	Lectures 17; 19 – 26

ONLINE ASSIGNMENTS

Students will meet with Dr. Glodowski for one 80-minute class weekly. Here, small groups will work together on online assignments related to the two lecture videos posted on Canvas during that week. Students are expected to view lecture videos before attending class because they will be applying concepts from the lectures to work through online assignments.

Online assignments will be accessed on the Achieve Learning site. One online assignment corresponds to each lecture. For most weeks, we will be working on two online assignments during our meeting. As each group is working through the assignments, instructors will be moving around the classroom answering questions and bringing everyone together for discussion, as needed. While students will be working together in small groups on these assignments, each individual will be expected to enter their own answers into the Achieve site in order to earn credit for their work. Online assignments are due at the end of the class meeting.

The Achieve Learning site is interactive. Each time you answer a question, you will know immediately if your answer is correct. **You may submit answers multiple times without penalty.** You may view optional hints and there is often an explanation that can be viewed with each correct answer. You will not be penalized for initially choosing incorrect answers.

Achieve keeps track of your progress on the left side of the screen. When you submit the correct answer to a question, you earn a score of 100 for that question. If you choose to give up and view the solution to a question, you earn a score of 0 for that question. Achieve uses the scores on each question in an assignment to calculate a final % for that assignment. **In order to earn credit for an assignment, you must complete the entire assignment AND you must earn 80% or above on that assignment.**

You may continue to view all problems in an assignment even after the due date has passed. Reviewing online assignments is a great way to prepare for quizzes and exams. Also, you will continue to have access to the Achieve Learning Site for this course after the semester ends. Reviewing material on Achieve may be helpful for students preparing to take standardized tests such as the MCAT and DAT.

Each online assignment is worth 2 points. Grades will be recorded in the gradebook on Canvas.

ADDITIONAL RESOURCES

There are many helpful resources available on the Achieve Learning Site, including animations, problem solving videos and interactive tutorials. Viewing and completing these resources is optional. However, if you find it difficult to visualize a particular concept or work through one type of problem, these resources may be useful. Resources are grouped on the Achieve site based on the content of weekly lecture material. Scroll through the site to any given week and you will find a list of optional resources relevant to material covered during that week.

Suggested readings from the text corresponding to each lecture are listed on the lecture schedule. These readings are strongly suggested as a supplement to information provided in lecture videos.

LECTURE VIDEOS

Lecture videos will be posted on the course Canvas site. Each lecture may be divided into multiple parts to make viewing easier. For example, Lecture 2 material is divided into 2 videos: Lecture 2 Part 1 and Lecture 2 Part 2. Students earn lecture participation points by correctly answering questions embedded within lecture videos (0.5 points per question; 2 points total per lecture).

Lectures for each week will be posted on Monday mornings. To earn participation points, lectures must be viewed and questions answered by midnight on the following Sunday. The lowest lecture participation score will be dropped before final grades are calculated.

RECITATION SECTIONS

Section	Day	Time	Place	Teaching Assistant
16	??	??	??	??
17	??	??	??	??
18	??	??	??	??
19	??	??	??	??
20	??	??	??	??
21	??	??	??	??

RECITATION CLASSES

Recitations will cover material from the previous week's lectures. To prepare, students should work through the Recitation Problem Set posted on Canvas. Each Friday at 5pm, the Recitation Problems for the following week will be posted on Canvas. Students should do their best to work through all problems before recitation and bring their work to class.

Students will spend part of the class working in small groups and part of the class altogether in discussion. The instructor will select one or more groups to present their work to the class, as time allows. Each group will submit their work for credit at the end of class.

If you must miss your scheduled recitation for a religious observance, please notify your TA prior to the absence so that a makeup can be arranged beforehand.

If you must miss your scheduled recitation for a non-religious reason, please notify your TA within 24 hours of the missed class in order to arrange for a makeup.

There will be 11 recitation meetings. The lowest recitation score will be dropped before final grades are calculated. Students can earn up to 5 points during each recitation, as follows:

Points	Activity & Grading Criteria
1 point	Present for class on time
2 points	Group work in class or in breakout room <ul style="list-style-type: none"> - work is submitted to the instructor after class - instructor observes all members of group contributing to discussion and working together
2 points	Participation in class discussion <ul style="list-style-type: none"> - students attempt to answer questions when asked - students pay attention when others are speaking - student behavior/comments indicate active engagement with material

RECITATION QUIZZES

Each Friday at 5pm, a Recitation Quiz will become available on the course Canvas site. The quiz takes 10 minutes to complete and is **due BEFORE recitation class begins**. For example, if Section 1 meets on Tuesdays at 5pm, then students in this section must complete their quiz before Tues at 5pm. Each quiz is worth 5 points. The lowest quiz score will be dropped before final grades are calculated.

GRADING

Your final grade will be assigned based on a points system. You will earn points throughout the semester by completing online assignments, by taking recitation quizzes, by viewing lecture videos and completing embedded questions, by attending and participating in recitations, and by taking exams. Total points available are shown in the table below.

Category (# of assignments)	Points available
Lecture Videos (26)	50 (26 lectures x 2 points each; lowest score is dropped)
Online assignments during class (26)	50 (26 assignments x 2 points each; lowest score is dropped)
Recitation Quizzes (11)	50 (11 quizzes x 5 points each; lowest score is dropped)
Recitation Classes (11)	50 (11 classes x 5 points each; lowest score is dropped)
Exam 1	100
Exam 2	100
Final Exam	100
Total:	500

The chart below shows how final letter grades will correspond to total points earned.

Letter Grade	Point Ranges
A	450 – 500
B+	425 – 449

B	400 – 424
C+	375 – 399
C	325 – 374
D	250 – 324
F	0 – 249

LETTERS OF RECOMMENDATION

Each semester, many students request a letter of recommendation for applications to medical school, dental school, summer internships, etc. I will only write a letter if I feel that I am able to write a strong letter that will enhance a student's application. At minimum, the following criteria must be met before I will consider writing a letter: 1. The student must earn an A in Genetics 380; 2. The student must show interest in course material above and beyond simply completing assignments and doing well on exams. This could be done by attending and participating in office hours regularly, posting questions, answers and/or comments in the forums on Canvas, or emailing questions and/or comments to me regularly.

ACADEMIC INTEGRITY

Students are expected to maintain the highest level of academic integrity. You should be familiar with the university [policy on academic integrity](#). Violations will be reported and enforced according to this policy.

Use of external website resources such as Chegg.com or others to obtain solutions to homework assignments, quizzes, or exams is cheating and a violation of the University Academic Integrity policy. Cheating in the course may result in grade penalties, disciplinary sanctions or educational sanctions. Posting homework assignments, or exams, to external sites without the instructor's permission may be a violation of copyright and may constitute the facilitation of dishonesty, which may result in the same penalties as plain cheating.

Almost all original work is the intellectual property of its authors. These works may include syllabi, lecture slides, recorded lectures, homework problems, exams, and other materials, in either printed or electronic form. The authors may hold copyrights in these works, which are protected by U.S. statutes. Copying this work or posting it online without the permission of the author may violate the author's rights. More importantly, these works are the product of the author's efforts; respect for these efforts and for the author's intellectual property rights is an important value that members of the university community take seriously.

For more instructions on copyright protections at Rutgers University, please refer to the [Rutgers Libraries](#).

STUDENT-WELLNESS SERVICES

All of these services are being provided remotely during Fall 2020.

Counseling, ADAP & Psychiatric Services (CAPS)

(848) 932-7884 / 17 Senior Street, New Brunswick, NJ 08901/ <http://health.rutgers.edu/medical-counseling-services/counseling/>

CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professionals within Rutgers Health services to support students' efforts to succeed at Rutgers University. CAPS offers a variety of services that include: individual therapy, group therapy and workshops, crisis intervention, referral to specialists in the community, and consultation and collaboration with campus partners.

Crisis Intervention : <http://health.rutgers.edu/medical-counseling-services/counseling/crisis-intervention/>

Report a Concern: <http://health.rutgers.edu/do-something-to-help/>

Violence Prevention & Victim Assistance (VPVA)**848) 932-1181 / 3 Bartlett Street, New Brunswick, NJ 08901 / www.vpva.rutgers.edu/**

The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling and advocacy for victims of sexual and relationship violence and stalking to students, staff and faculty. To reach staff during office hours when the university is open or to reach an advocate after hours, call 848-932-1181.

Disability Services**(848) 445-6800 / Lucy Stone Hall, Suite A145, Livingston Campus, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854 / <https://ods.rutgers.edu/>**

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: <https://ods.rutgers.edu/students/documentation-guidelines>. If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form on the ODS web site at: <https://ods.rutgers.edu/students/registration-form>.