

01:447:380 GENETICS – FALL 2020

LECTURE INSTRUCTOR

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COURSE WEBSITE

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

REQUIRED COURSE MATERIAL

Access to SaplingPlus Learning Site

- includes access to required online homework assignments AND the e-version of the required text, Genetics: A Conceptual Approach 7th edition by BA Pierce ISBN: 1319216803

- for enrollment and payment instructions directly through the publisher, see the following site:

www.saplinglearning.com/login

- for instructions on how to register on Sapling for this course, see:

<https://macmillan.force.com/macmillanlearning/s/article/Sapling-Learning-Registering-for-courses>.

- for technical questions/problems, see:

<https://macmillan.force.com/macmillanlearning/s/contactsupport>.

COURSE DESCRIPTION

Genetics 380 is a 4-credit course designed to teach students basic concepts of Genetics. Course material will be introduced during 80-minute lectures held twice weekly. Understanding of this material will be tested and reinforced by completing assigned homework problems online and participating during recitations (one 50-minute class weekly).

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.

EXAM POLICIES

Exam dates and times are listed on the lecture schedule posted on the course Canvas site. The final exam is not cumulative.

ONLINE HOMEWORK

Online homework assignments are completed on the Sapling Learning site. Completing online homework assignments is required in order to pass this course. Use the following information to gain access to the Genetics 380 site on Sapling.

STUDENT INSTRUCTIONS

1. Go to www.saplinglearning.com/login to create an account. If you already have a Macmillan Learning account you can log in with your existing credentials and skip to step 3.
 - a. Create your password and set all three security questions.
 - b. Start typing in your institution to select from the options that appears in the Primary Institution or School name field. If your institution does not appear you can add it by typing in the full name.
 - c. Accept the terms of use and click "Sign Up".
 - d. Check your email for the confirmation link to complete your registration and return to the login page.
2. Set your institution by searching using your institution's full name and selecting the appropriate option from the menu that appears.
3. Under Enroll in a new course, you should see **Courses at Rutgers University, New Brunswick**. Click to expand this list and see courses arranged by subject. Click on a subject (**Genetics**) to see the terms that courses are available.
4. Click on the term to expand the menu further (note that Semester 1 refers to the first course in a sequence and not necessarily the first term of the school year).
5. Once the menus are fully expanded, you'll see a link to a specific course. If this is indeed the course you'd like to register for, click the link.
6. Enter the key code that corresponds with your section: Your enrollment keycode is of the form **RecitationX** where X = your section number (for example Recitation1 through Recitation15 or RecitationH1 or RecitationH2)

7. To access your eBook, click on the image of the cover on the right sidebar of your course site. Create an account or log in with an existing Macmillan Learning eBook account.

8. Review the [system requirements](#)

9. **Need Help?** Answers to many common questions are found in our Student Support Community. If you need direct assistance you can also contact technical support: <https://macmillan.force.com/macmillanlearning/s/>.

The following link includes more detailed instructions on how to register for your course: <https://macmillan.force.com/macmillanlearning/s/article/Sapling-Learning-Registering-for-courses>

One online homework assignment corresponds to each lecture. For most weeks, there will be two online homework assignments due. Every Monday morning, assignments will be available on the Sapling Learning site. These assignments are due by midnight on the following Sunday night. Due dates for all online homework assignments are listed in the Schedule for Online Homework & Recitation, posted on Canvas.

The Sapling 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.

As you work through an assignment, Sapling 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. Sapling 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.**

Credit will only be given for homework assignments that are completed by the designated due date and time with a score of at least 80%. No partial credit will be given if an assignment is started but has not been completed. **To complete an assignment, you must either submit a correct answer OR choose to view the correct answer FOR EVERY QUESTION in the assignment.**

Problems in an assignment may be completed in any order. Your work on the Sapling Learning site is automatically saved, so you do not need to complete all problems in a single sitting. If you work through some problems and log off the Sapling Learning Site, your work will be saved. However, you must ultimately complete all problems in an assignment by the due date and time and earn a score of at least 80% in order to earn credit for your work. Partial credit for homework assignments will not be given.

You may continue to view all problems in an assignment even after the due date has passed. Reviewing online homework assignments is a great way to prepare for quizzes and exams. Also, you will continue to have access to the Sapling Learning Site for this course after the semester ends.

Reviewing material on Sapling may be helpful for students preparing to take standardized tests such as the MCAT and DAT.

Each online homework assignment is worth 2 points. Grades will be recorded in the gradebook on Canvas. The gradebook on the Sapling Learning Site will NOT be used.

ADDITIONAL RESOURCES

There are many helpful resources available on the Sapling 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 Sapling 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.

RECITATION

Students earn points in recitation based on attendance, participation, group work and quiz grades. Attendance is required. Each recitation will begin with a short quiz taken via Canvas. Late students will not be given additional time to work on the quiz.

Absence from recitation for a religious reason will be excused ONLY IF the recitation instructor is notified prior to the absence and arrangements are made to make up that day's work.

Absence from recitation for a non-religious reason will be excused ONLY in situations deemed appropriate by the TA or the course instructor. In such cases, the absence must be reported to the TA on or before the date of the missed class. A student with an excused absence will have the opportunity to arrange with their TA to make up any missed work. Unexcused absences may not be made up.

Each recitation is worth 10 points. The quiz is worth 5 points and will cover material from the previous week's lectures. Group work is worth 5 points. Each group will submit work/rationale and answer(s) to an assigned problem. Groups will be organized into breakout sessions within Zoom. The TA will move between breakout sessions, answering questions and assisting students as needed.

There are 11 recitations this semester. The lowest recitation score will be dropped before final grades are calculated. Therefore, points earned in the top 10 recitations will contribute to the final grade.

LECTURE PARTICIPATION

Recorded lectures will be posted on Canvas (usually 2 lectures per week). Questions will be embedded within lectures for students to answer. Each correct answer earns 0.5 pt for lecture participation. Due dates and times for lecture participation points will be posted on Canvas.

GRADING

Your final grade will be assigned based on a points system. You will earn points throughout the semester by completing online homework assignments, by taking quizzes, by viewing posted lectures

and correctly answering embedded questions, by participating in group work during recitation, and by taking exams. Total points available are shown in the table below.

Category (# of assignments)	Points available
Lecture Participation (26)	50 (26 lectures x 2 points each; lowest score is dropped)
Online Homework (26)	50 (26 assignments x 2 points each; lowest score is dropped)
Recitation (11)	100 (11 recitations x 10 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. Thus, you can add up your total points at any time during the semester (see gradebook on Canvas) and determine the corresponding letter grade.

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

ACADEMIC INTEGRITY

All students are expected to read the Rutgers University Academic Integrity Policy. For more information, please see: <http://academicintegrity.rutgers.edu/academic-integrity-at-rutgers>.

All students who violate academic integrity will be reported to the appropriate dean, academic officer, and/or appropriate hearing board for disciplinary action immediately, regardless of the level of offense. This includes students who are cheating as well as students who are helping to facilitate cheating or other academic dishonesty. We will advocate for the strongest possible sanctions against students who violate academic integrity, including but not limited to assigning the grade of XF (disciplinary F) for the course, suspension for one or more semesters, and permanent expulsion from the University with a permanent notation of disciplinary expulsion on the student's transcript.

For a quick interactive tutorial on plagiarism, please see: <http://library.camden.rutgers.edu/EducationalModules/Plagiarism/>

STUDENT-WELLNESS SERVICES

[Just in Case Web App](#)
<http://codu.co/cee05e>

Access helpful mental health information and resources for yourself or a friend in a mental health crisis on your smartphone or tablet and easily contact CAPS or RUPD.

Counseling, ADAP & Psychiatric Services (CAPS)

(848) 932-7884 / 17 Senior Street, New Brunswick, NJ 08901/ www.rhscaps.rutgers.edu/

CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professional 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.

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>.

Scarlet Listeners

(732) 247-5555 / <http://www.scarletlisteners.com/>

Free and confidential peer counseling and referral hotline, providing a comforting and supportive safe space.