Quantitative Biology and Bioinformatics
Course Information and Policies

Course: 01:447:302
Credits: 3
Semester: Spring 2019
Classroom: Nelson B125
Meeting Times: Mondays and Thursdays, 10:20-1:00
Course URL: https://sakai.rutgers.edu
Course Director: Dr. Tara Matise
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Office hours: by appt. - Nelson B422
Teaching Assistant: Mr. Will Hansen
wah49@scarletmail.rutgers.edu
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Student Assistant: Ms. Sadhana Chidambaran
Instructors: Dr. Tara Matise, Dr. Linda Brzustowicz, Dr. Chris Ellison,
Dr. Vikas Nanda, Dr. Wilma Olsen

Course Description: Quantitative Biology and Bioinformatics is a computer-based laboratory course that introduces students to the use of computers in biological research. Instruction is given in introductory computer programming while developing applications and analyses for problems in genetics and molecular biology. Classes consist of a mixture of lecture and computer-based exercises, as well as time for students to work on assignments. The course provides the introductory skills needed to conduct basic computational research in the life sciences, including many aspects of computer programming and data analysis. This course is particularly aimed at students who plan to pursue research careers, attend graduate or medical school, or enter the biomedical/research workforce. The course fulfills the laboratory requirement for the Genetics major.

Credit cannot be received for both 01:447:203 and 01:447:302

Course Goals: The Goals of Quantitative Biology and Bioinformatics reflect the learning Goals of the Department of Genetics, and include 1) knowledge specific goals: know the terms, concepts and theories in genetics; 2) integrate the material from multiple courses and research.

Core Curriculum Learning Goals Met by this Course

Information Technology and Research [ITR] goal:
• Employ current technologies to access information, to conduct research, and to communicate findings.
Course Materials: The computer lab has Windows 8 computers. Class materials will be distributed via Sakai and the cluster didact.oarc.rutgers.edu. The computer lab computers are not accessible outside of classtime, so if you save any files there, such as notes that you take during class, you will need to upload these after each class to a cloud storage folder or a portable USB flash drive (Windows formatted) in order to continue working at home. You are free to work on your laptop if you would prefer (see Laptop Policy below).

No textbook is required as needed material is made available during class. One useful resource is:


Contacting the Instructors: The best way to contact the instructors is by email. NOTE: we get scores of email each day. To ensure your email is noticed, be sure to put “Quant Bio 2019” in your email subject header. We try to respond within 24 hours M-F.

Attendance: Attendance is expected at all classes; in-class demos and exercises are an integral part of this class. All classes build upon the material from a previous class, so it is difficult to make-up work when class is missed. We also have unannounced quizzes. If you must miss a class, please use the University absence reporting website [https://sims.rutgers.edu/ssra/](https://sims.rutgers.edu/ssra/) to indicate the date and reason for your absence. An email is automatically sent to me. However, absence from class does not excuse you from homework assignments.

On-time completion of all assignments is required, including assignments given on days you are absent.

Assignments, Due Dates, and Course Announcements: You are responsible for being aware of all assignment due dates, which are indicated for each assignment. There are no late submissions. All assignments are handed in via didact or the Sakai site, so even if a class must be missed when an assignment is due, assignments can be uploaded online early. Arrangements can be made if serious illness keeps you from completing homework, however, in this case, you must contact me BEFORE THE HOMEWORK DUE DATE. There is no extra credit or make-up work available for this class.

Computer Use: Windows computers are provided for us in the course. The student accounts on the classroom computers provide private space for class work. Work can be done outside of the computer lab, but everything used in class would need to be installed and setup to mirror the classroom environment as the computer lab accounts and installed programs are not accessible outside the computer lab. Many Rutgers lab computers have software installation restrictions, so personal computers are recommended for work done outside of the computer lab. Some of the programs used in class need special instructions (which we will provide) to be able to run on Mac computers.

Laptop Policy: Laptop computers are welcome in class if preferred. There is wireless access to the Rutgers network from the classroom (RUWireless-DLS) though we are not sure how many laptops can access it simultaneously. Instructors are not responsible for ensuring that class programs will run on student laptops, although we will try to help you (There are only 1-2 programs you will need to install).
At the End of Class, Before Leaving: Backup your entire work to a cloud storage account or USB Flash Drive.

Classroom Time: Class computers are for work in Quantitative Biology and Bioinformatics. Please do not do other work, email, or web browse, etc. during class.

Performance Expectations and Evaluation: The course is graded on the basis of homework assignments (65% of total grade), in-class quizzes and attendance (5%), a mid-term exam (10%) and the final exam (20%). The mid-term will cover the Python instruction segment and will consist of an in-class open-notes programming problem. The final exam is an in-class open-notes cumulative exam that accounts for 20% of the final grade. All assignments will be turned in via the Sakai website, following instructions provided by the instructor or the TA.

Grades will be calculated based on overall course performance. The following grading scale will be used: 90% A  87% B+  80% B  77% C+  70% C

D and F grades will be determined based on the final score distribution at the end of the course.

Academic Integrity: We expect the honesty and integrity of every student in this course. Students are encouraged to interact with other students while doing assignments in class. However, assignments that are turned in for grading must represent each student's individual work – they may not be copied from another person's work, and they may not be the same as another person's work.

Scientists and doctors and all professionals must be intellectually honest. The most unforgivable thing that any scientist can do is to fake his/her data. Scientists who fabricate data lose their grants and jobs. Doctors who fake lab results or are dishonest in other ways not only lose their jobs and licenses but might also go to jail.

Plagiarism, a form of cheating, is quite easy to do. If you “cut and paste” from any source and then try to change a few words, this is still plagiarism. Never use terms unless you know the meaning of them. If I suspect plagiarism I will ask you to come in and explain your answers or writing.

The official Rutgers policy on cheating can be found here: http://academicintegrity.rutgers.edu/

There are at least 5 categories of violations: cheating, fabrication, plagiarism, denying others access to information or material, and facilitating Violations of Academic Integrity. Students who violate the Rutgers Integrity policies will be reported to the Office of Student Conduct. Sanctions will be determined by the Office of Student Conduct according to the procedures described in the University Policy on Academic Integrity.

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 / 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 / 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/
The Office of Disability Services works with students with a documented disability to determine the eligibility of reasonable accommodations, facilitates and coordinates those accommodations when applicable, and lastly engages with the Rutgers community at large to provide and connect students to appropriate resources.

Scarlet Listeners
(732) 247-5555 / http://www.scarletlisteners.com/
Free and confidential peer counseling and referral hotline, providing a comforting and supportive safe space.

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