

Quantitative Biology and Bioinformatics Course Information and Policies

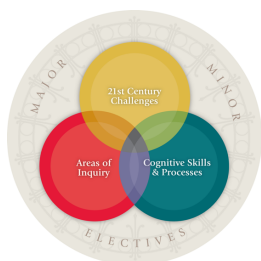
Course:	01:447:302
Credits:	3
Semester:	Spring 2020
Classroom:	Nelson B125
Meeting Times:	Tuesdays and Friday, 10:20-12:50
Course URL:	https://sakai.rutgers.edu
Course Director:	Dr. Tara Matise matise@dls.rutgers.edu 848-445-3125 Office hours: by appt. - Nelson B410
Teaching Assistant:	Mr. John Favate john.favate@rutgers.edu Office hours: TBD
Student Assistant:	Ms. Sadhana Chidambaran
Instructors:	Dr. Tara Matise, Dr. Tim Stanek, 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 designed for students with no prior programming experience. Students with some programming experience, including in other coding languages, are also welcome, but should be aware that the pace is designed for beginners.

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.

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

Think Python eBook (free): <http://greenteapress.com/wp/think-python/>

We strongly recommend you use your own laptop for this course. While the classroom has enough computers (running Windows) for most students, these are not accessible outside of class time. **The majority of our coursework will be done via web browser on a Rutgers University cluster, but 1 program does need to be installed locally.** If you do use one of the computers in the room, be sure to backup your entire work to a cloud storage account or USB Flash Drive.

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 2020”** 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/> 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 the didact cluster 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.**

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.

<https://rutgersonline.desk.com/customer/en/portal/articles/2930502-student-health-information>

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