2021SP - BIOPHYSICS 50:750:362:01/56:121:560

Physics 362 : Biophysics / CCIB 565 : Molecular Biophysics

Rutgers University - Camden

Spring 2021 / Wed 6:00-8:50 pm

Instructor: Dr. Grace Brannigan

Office Hours: Tuesday 3:30-5:30 or by appointment.

grace.brannigan@rutgers.edu (mailto:grace.brannigan@rutgers.edu)

(856) 225-6780

Text. *Biological Physics : Energy, Information, Life* by Philip Nelson. You can get it on amazon or through the bookstore.

The Machinery of Life by David Goodsell, 2nd (2009) edition. This is not available at the bookstore but is available through Amazon (hardcover < $30).

Office Hours. I plan to hold virtual office hours, every Monday 3:00-5:00. If you cannot make this time, please make an appointment. My virtual office is https://rutgers.zoom.us/j/2766970882?pwd=bTMrT1ZJWlg2cWRtOXI0NnFZS1pGQT09

Objectives: It is my aim that students will learn to

- Become more aware of how powerful a predictive physics-style approach is for describing biological systems
- Improve your ability to DO biophysics (get better at problem solving, regardless of your current skill)
- Develop an appreciation for the importance of thermal energy, random motion, and statistics in driving biological processes

Format.

- The Learning Management System for this class is Canvas.

- Class will be held synchronously, using Zoom and the OneNote notebook embedded in Canvas.

- I aim for a highly interactive class, even within this virtual format. Many of the activities will require that you pose at least one question during the class.

- I think the chat window is great, and I see questions get asked there that you might not ask otherwise! But it is challenging to keep an eye on a scrolling chat window at the same time that I am teaching. If it seems like I haven't seen your question, I probably haven't. Please speak up.

Tips for Using OneNote.

- You can access OneNote through Canvas, but it will bring you to the browser version. Once you know you can login, I strongly recommend moving to the App. The browser version is clunky.

- If you are having problems getting access, please write to **help@camden.rutgers.edu (mailto:help@camden.rutgers.edu)**

- I use OneNote with a stylus. You can use it with a mouse and keyboard, but I much prefer attaching a tablet and stylus for equations and notes. This is the kind I've used, but there are many others: **https://estore.wacom.com/en-US/wacom-intuos-s-black-us-ctl4100.html (https://estore.wacom.com/en-US/wacom-intuos-s-black-us-ctl4100.html)**

Homework. Five homework problem sets will be assigned, due Wednesday **February 10, February 24, March 10, March 31, and April 14.**

Activity. Each class will have something to hand in at the end of class. This could include things like problem solving on new material, fill-in-the-blank derivations, and/or a list of questions you still have by the end of class. You will turn these in through OneNote.

Grading. Your final score will consist of the following parts :

Homework	40%
In Class Activities (Drop lowest score)	35%
Final Exam	25%

Attendance. You will need to be in class for the In Class Activities to get any credit for them, unless you make special arrangements with me. The lowest score is dropped for each; if you miss only 1 class

session, the resulting zeros will be the dropped score.

If you miss more than 1 class without making special arrangements with me, some of the zeros will get counted in your grade.

Instructor's Statement. Do not engage in any form of academic dishonesty. If you do not know what academic dishonesty is, please consult this statement: http://www.camden.rutgers.edu/RUCAM/info/Academic-Integrity-Policy.html (http://www.camden.rutgers.edu/RUCAM/info/Academic-Integrity-Policy.html) . I will report any violations of this policy to the campus Judicial Officer.

Please note that it is necessary to explain all steps that you take on homework and exams – make an effort to ***clearly*** show your work. Answers without justification will not be accepted! You may be asked to explain your reasoning.

Attendance is strongly suggested at all class meetings in accordance with the policies and guidelines set forth in the student manual.

Course Summary:

	Details	Due
Wed Jan 20, 2021	2021SP - BIOPHYSICS 50:750:362:01 (https://rutgers.instructure.com/calendar?event_id=357705&include_contexts=course_119290)	6pm to 9pm
Wed Jan 27, 2021	2021SP - BIOPHYSICS 50:750:362:01 (https://rutgers.instructure.com/calendar?event_id=357706&include_contexts=course_119290)	6pm to 9pm
Wed Feb 3, 2021	2021SP - BIOPHYSICS 50:750:362:01 (https://rutgers.instructure.com/calendar?event_id=357707&include_contexts=course_119290)	6pm to 9pm
Wed Feb 10, 2021	Homework 1 (https://rutgers.instructure.com/courses/119290/assignments/1248169)	due by 5:59pm

Date	Details	Due
	2021SP - BIOPHYSICS 50:750:362:01 (https://rutgers.instructure.com/calendar?event_id=357708&include_contexts=course_119290)	6pm to 9pm
Wed Feb 17, 2021	2021SP - BIOPHYSICS 50:750:362:01 (https://rutgers.instructure.com/calendar?event_id=357709&include_contexts=course_119290)	6pm to 9pm
Wed Feb 24, 2021	2021SP - BIOPHYSICS 50:750:362:01 (https://rutgers.instructure.com/calendar?event_id=357710&include_contexts=course_119290)	6pm to 9pm
Wed Mar 3, 2021	Homework 2 (https://rutgers.instructure.com/courses/119290/assignments/1248171)	due by 5:59pm
	2021SP - BIOPHYSICS 50:750:362:01 (https://rutgers.instructure.com/calendar?event_id=357711&include_contexts=course_119290)	6pm to 9pm
Wed Mar 10, 2021	2021SP - BIOPHYSICS 50:750:362:01 (https://rutgers.instructure.com/calendar?event_id=357712&include_contexts=course_119290)	6pm to 9pm
Wed Mar 17, 2021	2021SP - BIOPHYSICS 50:750:362:01 (https://rutgers.instructure.com/calendar?event_id=357713&include_contexts=course_119290)	6pm to 9pm
Wed Mar 24, 2021	2021SP - BIOPHYSICS 50:750:362:01 (https://rutgers.instructure.com/calendar?event_id=357714&include_contexts=course_119290)	6pm to 9pm
Wed Mar 31, 2021	Homework 3 (https://rutgers.instructure.com/courses/119290/assignments/1248174)	due by 5:59pm

Date	Details	Due
	2021SP - BIOPHYSICS 50:750:362:01 (https://rutgers.instructure.com/calendar?event_id=357715&include_contexts=course_119290)	6pm to 9pm
Wed Apr 7, 2021	2021SP - BIOPHYSICS 50:750:362:01 (https://rutgers.instructure.com/calendar?event_id=357716&include_contexts=course_119290)	6pm to 9pm
Wed Apr 14, 2021	Homework 4 (https://rutgers.instructure.com/courses/119290/assignments/1248175)	due by 5:59pm
	2021SP - BIOPHYSICS 50:750:362:01 (https://rutgers.instructure.com/calendar?event_id=357717&include_contexts=course_119290)	6pm to 9pm
Wed Apr 21, 2021	2021SP - BIOPHYSICS 50:750:362:01 (https://rutgers.instructure.com/calendar?event_id=357718&include_contexts=course_119290)	6pm to 9pm
Wed Apr 28, 2021	2021SP - BIOPHYSICS 50:750:362:01 (https://rutgers.instructure.com/calendar?event_id=357719&include_contexts=course_119290)	6pm to 9pm
Wed May 5, 2021	Homework 5 (https://rutgers.instructure.com/courses/119290/assignments/1248179)	due by 5:59pm
Wed May 12, 2021	Class Activities (https://rutgers.instructure.com/courses/119290/assignments/1389783)	due by 1:59pm
	Extra Credit: Corrections for Homework 5 (https://rutgers.instructure.com/courses/119290/assignments/1360591)	due by 11:59pm
	foldit (https://rutgers.instructure.com/courses/119290/assignments/1389784)	due by 11:59pm