

## **Contemporary Issues in Biochemistry**

11:115:201

Two meetings per week, 55 minutes each

### **Contact Information**

Instructor: Dr. Crane

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Office: Lipman 117

Office Hours by appointment

### **Course Overview**

This course is designed to familiarize students with current topics and methodologies in biochemistry research, and to introduce students to the areas of expertise of program or other faculty.

### **Program Learning Goals (PLG) Addressed by 11:115:201**

- (PLG 3) Upon completion, students will be critical thinkers with effective written and oral communication skills; well prepared for positions in industry, government and graduate/professional study.
- (PLG 4) Graduates will have a fundamental understanding of ethical and current issues in biochemistry and understand the importance of ethics in scientific research.

### **Course Learning Goals**

- identify each step of the research process, from forming hypotheses all the way through to dissemination of information
- critically evaluate peer-reviewed literature
- identify ethical considerations regarding academic and research integrity
- identify ethical considerations regarding the use of human and animal subjects in research
- make calculations (e.g., unit conversions) critical to laboratory work
- evaluate, analyze and visualize data
- identify current topics and directions of biochemistry research and applications
- communicate information about biochemistry to others

### **Communication Policy**

If there is something you need to discuss with me, I prefer that you attend office hours, speak with me after class, or make an appointment. If you need to email me, please use your scarletmail account or the Canvas mail function. I generally respond to emails within two business days.

### **Assignments and Grading**

General Discussion and Participation: 10%

In-Class Assignments: 10%

Ethics Discussion: 10%

Homeworks: 10%

Quizzes: 15%

Talk Summaries: 20%

Presentation and associated assignments: 25%

There is no final exam for the course.

## **Assignment Details**

### General Discussion and Participation

There will be an ongoing “general discussion” on our Canvas page in which you are encouraged to participate. In addition, I encourage you to participate in as much of our in-class discussions as you can. Students who regularly participate in the online general discussion and / or our conversations during class will earn full credit for this course component.

### In-Class Assignments

Throughout the semester there will be a number of low-stakes in-class assignments. These will be primarily graded on a no credit/half credit/full credit scale or as “all or nothing.”

### Ethics Discussion

There will be an ethics discussion on our Canvas page that will open when we begin to discuss research ethics. I will post specific instructions for how to earn full credit for this discussion.

### Homeworks

At least three homeworks will be assigned, primarily during the first half of the semester.

### Quizzes

There will be three short open quizzes during the semester on the following topics:

1. Quantitative Literacy
2. Model Organisms
3. General Toxicology

## Talk Summaries

There will be a number of guest speakers this semester. You will be asked to briefly summarize the presentations of two of the speakers (I will break them into two groups so that the due dates can be spaced out). The summary will be a short (1-2 pages) document that includes:

- a. the name of the speaker you chose to write about
- b. a detailed summary of the material presented (Please do not reproduce the entire lecture, but please do be specific. For example, “Dr. Boyd talked about bacteria and how they react to a certain metal.” Is very different than “Dr. Boyd talked about *Staphylococcus aureus* and how it reacts to copper.”)
- c. an explanation of how the topic fits into the biochemistry “big picture” – i.e., why is this topic important / relevant?
- d. explanations of two reasons this topic is of particular interest to you

Not all speakers will provide presentation slides or allow recording, so please take detailed notes, keeping the requirements of the summary in mind.

## Presentation and associated assignments

At the beginning of the semester, I will ask you about what topics in biochemistry are most interesting to you. Then I will assign you to groups based on your interests. Your group will record a presentation to be posted on our Canvas page during the last half of the semester.

There will be some low-stakes assignments associated with this presentation. For example, your group may be asked to submit an outline of your presentation and/or make at least one of your slides ahead of time. You will also write up the information you presented and provide an honest assessment of your efforts.

In addition, there will be discussion boards for each of the presentations. Your group will manage your discussion board, and you will also watch and discuss three other groups' presentations.

Additional details about the presentation and related assignments will be provided on Canvas.

### Submission of Assignments

All assignments must be submitted through Canvas unless otherwise instructed.

I do not accept submissions via email. There are no exceptions to this policy.

In-class assignments, Ethics Discussion posts, and Quizzes cannot be submitted after the due date. Most other assignments will be accepted up to 48 hours late for a 20% deduction off the top (e.g., a submission that would normally earn 90% will earn 70% if late). Lateness begins 1 minute after the due time.

### Expected Grading Scheme

≥90: A

85-89.9: B+

80-84.9: B

75-79.9: C+

70-74.9: C

60-69.9: D

<60: F

## **Academic Integrity**

All members of the Rutgers community are expected to adhere to the University's [Academic Integrity Policy](#). The principles of academic integrity require that a student:

- properly acknowledge and cite all use of the ideas, results, or words of others.
- properly acknowledge all contributors to a given piece of work.
- make sure that all work submitted as his or her own in a course or other academic activity is produced without the aid of impermissible materials or impermissible collaboration.
- obtain all data or results by ethical means and report them accurately without suppressing any results inconsistent with his or her interpretation or conclusions.
- treat all other students in an ethical manner, respecting their integrity and right to pursue their educational goals without interference. This requires that a student neither facilitate academic dishonesty by others nor obstruct their academic progress.
- uphold the canons of the ethical or professional code of the profession for which he or she is preparing.

Adherence to these principles is necessary in order to ensure that

- everyone is given proper credit for his or her ideas, words, results, and other scholarly accomplishments.
- all student work is fairly evaluated and no student has an inappropriate advantage over others.
- the academic and ethical development of all students is fostered.
- the reputation of the University for integrity in its teaching, research, and scholarship is maintained and enhanced.

Failure to uphold these principles of academic integrity threatens both the reputation of the University and the value of the degrees awarded to its students. Every member of the University community therefore bears a responsibility for ensuring that the highest standards of academic integrity are upheld.

I am required to report any suspected violation of the policy to the [Office of Student Conduct](#). What happens after that depends on a number of factors, including the severity of the violation and whether or not is considered a first offense.

One of the most common offenses is plagiarism, either from an outside reference or from another student's work. Although you are encouraged to discuss things with each other, the work you submit must always be your own. I will be using the Turnitin function on Canvas to manage written assignments submitted through Canvas.

If after our academic integrity exercises you are unsure of how to properly use sources, please come to office hours or make an appointment with me so that we can go over it in more detail.

### **Students with Differing Abilities**

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 according to the [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 visit the ODS website and follow the instructions for [getting registered](#).

## **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/](http://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 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.

## Violence Prevention & Victim Assistance (VPVA)

(848) 932-1181 / 3 Bartlett Street, New Brunswick, NJ 08901 /

[www.vpva.rutgers.edu/](http://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.



## Scarlet Listeners

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

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

## **Diversity and Inclusion**

One thing that makes Rutgers great is the diversity of our population. We are all here to learn from each other, and learning often takes the form of lively discussion and debate among people with different perspectives. As long as we are respectful to one another, discussion and debate can be valuable experiences. It is my priority to foster learning among students in the Rutgers community, and this requires that my classroom be a safe and supportive space for all. If there is anything I can do to help you thrive in our community, I trust that you will let me know. I want this class to be a positive experience for all of us!

## Sample Schedule

Meeting #	Topic
	<b><u>Module 1: Course Introduction</u></b>
1	Course Introduction; Biochemistry Concept Maps
	<b><u>Module 2: Research and Communication</u></b>
2	Icebreaker; Sources of Information
3	Research and Communication: Scientific Papers
4	Research and Communication ctd.; Reading Scientific Papers
5	Reading Scientific Papers / Interpreting Figures
6	Interpreting Figures
7	Interpreting Figures
8	Science Communication
9	Science Communication continued
	<b><u>Module 3: Ethics</u></b>
10	Academic Integrity; Use of sources and proper citation
11	Use of sources and proper citation Research Misconduct
12	Research Misconduct
13	Human Subjects

14	Animal Subjects
	<a href="#"><u>Module 4: Quantitative Literacy</u></a>
15	"Lab Math"
16	Graphing
17	Statistics and Data interpretation
	<b>Module 5: Faculty Speakers / Roundtable Discussions</b>
18 - 28	The last few weeks of the semester are typically dedicated to faculty research presentations, faculty guest lectures, etc. Depending on guest lecturer availability, these presentations are sometimes interspersed with other modules.