Course Description & Objectives

A lecture seminar course focusing on the fundamental chemistry underlying biological phenomena. Examples from the current biochemical literature will be used.

After completing this course, students should be able to
• describe how reactions in vivo differ from those that occur in vitro
• identify the information content, methodologies and challenges of genomics, proteomics and metabolomics experiments
• compare the chemical and physical characteristics of systems that recapitulate organs or organisms with actual living systems
• reliably obtain and communicate information from the primary literature

Course Format

Class will be based on reading from the primary scientific literature. In general, I will introduce new course topics during a lecture on Thursdays, then assign a related journal article, which we will discuss in class on the following Tuesday. At the start of the next class period, we will have short student presentations on related articles before starting lecture.

Exams. In general, exams will be a combination of conceptual short answer, data interpretation, and experimental predictions. Please note that if you score below 70% on the midterm exam, you must meet with me individually to discuss strategies to improve your score on the final.

Reading Guides. To prepare you for our in-class discussions of the primary literature, you will complete a reading guide, consisting of short answer responses and occasional research, for each article.

One-Slide Presentations. You will periodically give short presentations (~5 min) on articles related to course topics. These presentations will occur at the start of class. You may use just one Powerpoint slide to support your presentation. Your grade will based on the clarity and accuracy of your presentation; the effectiveness of your visual aid; your ability to connect the paper to course topics; and your adherence to the assignment guidelines. Before class on the day of your presentation, upload your slide to the database on Moodle so that all class members can access it. Material from presentations will be included on exams.

Course Glossary. As you read for the course, you are sure to encounter terms that you do not recognize and that we have not discussed in class. You are responsible for keeping a running glossary of these terms. Each entry in the glossary should include the term, its definition, the course reading in which you first encountered it, and a ACS-format reference for the definition. The course glossary will be collected and graded at the end of the semester. To encourage completeness, accuracy, and regular additions, you will be allowed to use your glossary during the midterm and final exams.
Course Materials

There is no textbook for this class. PDF files of required readings are available on Moodle. I strongly suggest that you print physical copies of these articles, in color if needed.

Moodle & Email

Moodle and e-mail will be used extensively in this course. All students are required to have an active e-mail account. Students will be expected to consult the Moodle site on a daily basis for weekly syllabi, assignments, announcements, schedule changes, lecture materials, posted supplementary course materials and external links.

Classroom Citizenship

Please familiarize yourself with the College’s policies on attendance, absences, academic honesty, and classroom behavior as outlined in the Student Handbook. This course will be conducted in strict agreement with these policies.

Academic Integrity

Each student should be familiar with the Trinity College Student Integrity Contract and the section on Intellectual Honesty in the Student Handbook.

References. Any ideas in written assignments that (i) did not spring from your own mind and (ii) are not common knowledge to high school science students should be cited at the end of each assignment. Direct quotes are unacceptable. Rewrite all ideas in your own words and cite them. If you have a question about whether or not your rewording is acceptable, ask me! Use the ACS Style Guide to format your references. Plagiarism and academic dishonesty – copying from another student, copying from another source including the internet, failing to cite a reference, etc – will be subject to the strictest penalties.

Homework. I encourage you to discuss course topics and readings with your classmates; however, this must be done judiciously. Be sure that you have done the challenging intellectual work of an assignment before seeking feedback from peers, and do not review a classmate’s work if you have not attempted the work yourself. If you have any questions about whether or not your collaboration with a classmate complies with my expectations, please talk to me about it before turning in an assignment.

Tips for Reading the Literature

- Read the abstract and then look at figures and captions first. This is an excellent way to orient yourself to the main points of information in a paper and allows you to make an initial assessment of the data in the figures free of the authors’ interpretation.

- Keep a running list of terms you do not recognize. You may be able to define some by context. The rest you should look up after completing your first read-through of the article. New terms that you look up should be included in your course glossary.

- Make note of claims, evidence, and assumptions. A claim is a conclusion or statement the author makes about their data. Evidence is the data that supports the claim.
Frequently Asked Questions (FAQs)

What should I do if I have to miss class?
Class attendance is mandatory and will be taken at the beginning of each class, so please be on time and do not miss class if at all possible. If you will be absent, please do the following:

1. Notify me as soon as possible, preferably before class and by email.
2. Email me any assignments that are due, drop them in CT208, or send them to class with a friend.
3. Contact a classmate to get the notes and consult Moodle for any handouts that you missed.

What if I miss my one-slide presentation?
If you miss a presentation due to incapacitating illness or injury, you must submit confirmation from a medical professional or the Dean of Faculty. If you will miss a presentation for any other College-sanctioned reason (e.g., religious observance), you must discuss your absence with me at least 3 days prior. Make-up presentations will generally occur during the next scheduled class period. If you miss your presentation due to an unexcused course absence or lack of preparation, your make-up presentation will be penalized by -10% per class period late.

What if I miss an exam?
If you miss an exam due to incapacitating illness or injury, you must submit confirmation from a medical professional or the Dean of Faculty. If you will miss an exam for any other College-sanctioned reason (e.g., religious observance), you must discuss your absence with me at least 3 days prior. In these cases, your other exam will usually be weighted to replace the one missed. Excluding exceptional circumstances (identified by the instructor), in all other cases, missed exams will be marked as zeros. Make-ups will be given only in special circumstances at the instructor’s discretion.

Can I have an extension for my reading guide homework?
It is particularly important that these assignments be completed on time since the reading guides prepare you for class discussion. If you do not complete them before class your ability to participate in these discussions will be greatly curtailed. For this reason, extensions will not be granted, but late work will be accepted with a penalty of -10% per day.

How can I tell what my current grade is?
Your current overall lecture grade and your grades for individual assignments will always be available in the grade book in Moodle. If you have any questions or would like to discuss your performance in the class at any time, please come by office hours or make an appointment.

Can I do extra credit?
There will be no extra credit in this class. Please don’t ask! My philosophy is that you should spend your valuable time succeeding at the primary objectives for the course. If you have not completed them, you should not be spending time on additional work. If you have completed them, your grade should not be in need of a boost.

Whom should I contact for technical help with Moodle?
If you are having general technical problems logging on or using Moodle, you should contact the Help Desk at 860-297-2007 or helpdesk@trincoll.edu. If you are having specific problems with content on our class site, you may want to contact me first so I can make sure it’s not a mistake I’ve made in preparing the content.

Resources

**Accommodation Requests**
If you have a learning, medical or psychological condition that may affect your participation in this class, please talk with me and contact Lori Clapis in Disability Services at 860-297-4025 or at Lori.Clapis@trincoll.edu.

**ACS Style Guide**
You can refer to this reference for citation formatting online at pubs.acs.org, and copies are available in the main library and the Chemistry library.

**The Writing Center**
For hours or to schedule an appointment, call 297-2468 or visit http://trincoll.mywconline.com/