Course Information

Chemistry 1240 explores the chemical, mechanistic, and structural basis for enzymatic catalysis. Using examples from the recent literature, we examine how the experimental and conceptual tools of chemical synthesis, isotopic labeling, stereochemistry, enzymology, kinetics, and protein structure can be brought to bear to unravel the chemical and physical principles underlying the enormous catalytic accceleration and exquisite structural specificity of enzyme-catalyzed reactions.

Lectures
Tue., Th. 9:00-10:20 A.M. (H Hour) **GeoChem 351**

Instructor
Prof. David E. Cane
Office: GeoChem 447
Office Hours: Wed, Fri: GeoChem 447; 2:30-4:00 PM - e-mail for appointment
email: David_Cane@brown.edu

Teaching Assistant
Ethan Magno
e-mail: ethan_magno@brown.edu
Weekly review sessions, time and place to be announced

Course Requirements
The Syllabus, Schedule of Topics, and Assignnent links are all available on the Chem 1240 Canvas site. (Please send me an e-mail if you encounter broken links or incorrect URLs or enounter difficulties downloading the PDF copies of the readings.) *These pages will be updated periodically throughout the semester, so please check them regularly for changes and additions.*

Reading material, lectures, and class discussion will be based primarily on articles from the recent original literature, with some the early readings also taken from standard texts or monographs. There is no text book. All assigned readings will be available online from the Chem 1240 Canvas site and can be downloaded in PDF format directly from the Assignment pages. Following the first 1-2 introductory classes, the readings will be discussed approximately, but not precisely, in the order in which they are listed on the individual topic Assignment pages.

Lectures will be complemented by student presentations on literature articles, with two students collaborating for each presentation and another two responsible for leading the discussion. After the second Hour exam, students will give presentations on individual term paper topics.

Topics or questions raised during class may also be the subject of online Discussions, in which students, individually or working in groups, will be able to submit responses, get feedback, and view the contrbutions of classmates.

- two "Hour" exams (150 pts each) - these will be given in the evenings to allow more time
- one Protein Graphic Exercise (75 pts)
- one Term Paper (150 pts)
- in-class participation (75 pts).
    - contributions to in-class and on-line discussions
    - literature talk
    - term paper presentation

Students should submit all assignments (Protein Graphic, PowerPoint presentations and Term Paper) using Canvas.

Prerequisites
Strong background in organic chemistry (Chemistry 0350-0360, (A or B performance preferable) plus at least one semester of Biochemistry (Biomed 0280, Biomed 1270).

Enrollment is limited to 25 students.

If the course is oversubscribed, permission to enroll for students who meet the course prerequisites will be allotted in the order: a) first year Chemistry graduate students, b) undergraduate senior concentrators in Chemistry, Biochemistry or Chemical Biology, c) junior concentrators in Chemistry, Biochemistry or Chemical Biology, d) other students. Students who have permission to enroll must attend the first three classes (Thu, Jan 23;Tue, Jan 28; Thu, Jan 30) or risk losing their places to someone on the Course waiting list. Permission to enroll (Banner Overrides) will not be granted until the end of the early enrollment period and after all students have been polled by e-mail to ascertain their qualifications for the course.

Academic Honesty
All Brown students are expected to be cognizant of and adhere strictly to the Guidelines for Academic Honesty. These can be found Academic & Student Conduct Codes on the website of the Dean of the College.

Guidelines specific to Chemistry 1240

- Students are encouraged to work together in discussion and consultation in the preparation of in-class literature talks. All other submitted assignments, including exams, term papers, and the protein graphic exercise, must be the exclusive written work of the individual student. PowerPoint presentations for in-class talks can be based on the collaboration of the assigned pairs of students.
- Students may not collaborate with nor consult with other students in the completion of written examinations.
- The term paper must be appropriately referenced. The verbatim transfer of information or extensive paraphrasing from published works must be limited and appropriate and must always be accompanied by appropriate citation. *Plagiarism of any sort will not be tolerated.*