

INTRODUCTION TO BIOLOGICAL CHEMISTRY

BIOL/CHEM3510

OBJECTIVE: Accurate molecular picture for the chemistry of life

TOPICS: Metabolism, biosynthesis, protein chemistry, enzyme mechanism, enzyme kinetics, information biochemistry (DNA/RNA).

COMMUNITY ENGAGED LEARNING: The integration of meaningful, community-based, engaged, “real-world” experiences and reflection into university coursework

You will bring what you are learning in Biochemistry I, and in your university experiences, to the communities in need in the Salt Lake area

CEL OPTION 1-Science Communication focused: work with students enrolled in EDU5375-Science Methods to develop science lessons & classroom activities for 4-6 graders. This would include visiting classrooms with the newly developed lessons & activities in April. Topics focused on will be genetics & heredity, and the process of photosynthesis.

CEL OPTION 2-Healthcare focused: work with the Utah AIDS Foundation or Maliheh Free Clinic to bring much-needed medical care and disease awareness & prevention to high-need populations. This would include 1-2 training orientations. Ideally you can stay on with either community partner beyond the length of the semester

PLEASE CONTACT THE CEL COORDINATOR, AMY SIBUL, by Friday Jan 17 to get any questions answered or to get involved! amy.sibul@utah.edu

*Sections 012 & 013 are lecture and discussion for the course with CEL.

EXPECTED LEARNING OUTCOMES: Understand the fundamental molecules and chemistry underlying processes of life; be able to construct reasonable predictions given changes (i.e. mutations, loss of enzyme function, addition of a drug inhibitor) for a molecular-chemical system; diagnose structure-function relationships as related to biomolecules and enzyme catalysts; describe the relative contributions of different types of energy in a variety of biomolecular systems including the DNA double-helix structure, the process of protein folding, enzyme catalysis, coupling of ATP destruction to “uphill” processes; the synthesis of ATP by means of oxidative phosphorylation and the proton motive force; describe how central metabolites unify branches of metabolism and biosynthetic pathways.

See also ELOs for Biology BS degree, especially those related to Information, Systems, Structure and Function, Process of Science, and Communication: <http://learningoutcomes.utah.edu/degree/296> (Links to an external site.)

TEXT: Berg et al., BIOCHEMISTRY 9th edition. The electronic version of this text is available from the MacMillan publisher. The bookstore offers an optional loose leaf printout of the text for about \$45. All other materials needed for this course will be provided.

INSTRUCTORS:

Dr. Martin P. Horvath, ASB350, martin.horvath@utah.edu, 801-891-3477 (text works);

Dr. Baldomero Olivera, BIOL114, olivera@biology.utah.edu, 801-581-8370

TEACHING ASSISTANTS: Sharu Kannan, Cris Urcino, Dan Labuz, Chieko Hoki, Chris Reynolds, Eric Tokita, Hyelan Lee, Markell Kolendrianos, Nicky Loyola, Sonia Sehgal

DISCUSSION SECTIONS

Discussion sections are led by TAs and will focus on a particular concept related to the material covered in lecture and in the text. Students are welcome to attend any and all discussion sections; there is no requirement to attend. Extra discussion sections are scheduled prior to exams, including weekends and evenings.

Section, Day, Time, Location, TA

002, M, 8:35 AM, JTB130, Chieko, chiekohoki@gmail.com

003, M, 9:40 AM, JTB320, Hyelan, hyelan89@gmail.com

004, M, 6 PM, LS111, Cris, u0758742@utah.edu

005, T, 7:30 AM, JTB110, Markell, u0830989@utah.edu

006, T, 6 PM, LS107, Chris, christopherallenreynolds@gmail.com

007, W, 9:40 AM, CSC13, Sharu, sarmishta.kannan@gmail.com

008 W, 6 PM, LS111, Dan, daniel.labuz@utah.edu

009, H, 7:30 AM, JTB110, Sonia, soniasehgal499@gmail.com

010, H, 6 PM, LS111, Eric, eric.tokita@gmail.com

011, F, 8:35 AM, JTB130, Nicky, n.loyolazoso@gmail.com

OFFICE HOURS

No fixed hours outside of Discussion Sections led by TAs. Instructors are generally available at any time by drop in. Call or e-mail to arrange a scheduled meeting.

TWITTER

Follow us on Twitter @BiochemUU

CONTENT ONLINE

Outlines of lectures, instructional videos, and other online content can be found on our course wiki pages. Click on icons to navigate to content.

ASSESSING LEARNING OUTCOME (GRADES)

Assessment is by exam. There will be no graded homework. There are four midterm exams (worth 100 points each) and one comprehensive final exam (400 points). All exam scores count for the final grade. No dropped exam scores. Performance is weighted in the following way to emphasize a student's best work. Whichever point total is greater (midterm sum or final exam), that point total will be multiplied by 1.5 and then added to the other point total for a total, possible points of 1000. With this system each midterm will count for 10% or 15% of the final grade and the final exam will count for either 40% or 60% of the final grade. Earning 900 points guarantees an A- grade or better, earning 800 points guarantees a B-, etc. Grades are additionally adjusted by

class distribution. When adjustments are made, these result in better (never worse) grades.

GRADUATE LEVEL BIOLOGICAL CHEMISTRY (BIOL6530)

Assessment for this graduate level section of the course is by exam and one final 5-page report. Select a topic that is related to biochemistry and which will help with your graduate research. Each midterm will count for 10% or 12.5% of the final grade, the final exam will count for either 40% or 50% of the final grade, and the final report will count for 10% of the final grade.

EXAM DATES

Exams will take place in our lecture hall during class time on the dates listed below. Please mark your calendars!

EXAM ACCOMMODATIONS

Accommodations (requests for a make-up exam) will be considered on a case-by-case basis and require documentation verifying the reason accommodation should be considered. Students traveling with athletic teams can take the exam off site. Conferences and interviews can be accommodated immediately upon return to campus so long as this happens before graded exams are returned to students. We do NOT make accommodation for the MCAT exam; please schedule the MCAT or other professional entrance exam to a date/location that does not conflict. Deaths in the family require a Death Certificate. Illnesses, including stress and anxiety, require a signed clinician's note. If possible, accommodations should be negotiated prior to an exam. In the event of a medical emergency, contact the Instructor Team as soon as possible to negotiate an accommodation.

EXAM REGRADES

Regrade requests should first be made with TAs. We photocopy the exams; please do not alter or make any mark on your graded exam prior to a regrade request. If discussion with the TA proves unsatisfactory, students should next contact the Instructor. Instructors may choose to regrade the entire exam and your score may increase or decrease accordingly.

STUDENT RIGHTS AND RESPONSIBILITIES

Students should at all times adhere to the “Student Code”. Specifically, academic misconduct will not be tolerated. Cheating will result in zero points for the exam (first incident with mitigating circumstances) and may result in further academic sanctions including assignment of a failing grade for the course.

CONTENT ACCOMMODATIONS POLICY

Instructors do not grant content accommodation requests as the course content fulfills legitimate pedagogical goals.

COMPLIANCE WITH ADA REGULATIONS

The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, 801-581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in alternative format with prior notification to the Center for Disability Services.

Course Summary:

Date	Details
Tue Jan 28, 2020	 EXAM 1
Thu Feb 20, 2020	 EXAM 2
Tue Mar 24, 2020	 EXAM 3
Thu Apr 16, 2020	 EXAM 4
Thu Apr 23, 2020	 FINAL EXAM - HORVATH
	 FINAL EXAM - OLIVERA