

Core: Advanced General Biochemistry II

CHEM 5781, Spring 2020

INSTRUCTORS:

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LECTURES: Mondays and Wednesdays: 9:30 am-11:20 am. Fridays: 9:30 am-10:20 am. JSCBB B331; Attendance is required. Throughout the semester, there are core lite days and the class will not meet on those days.

COURSE MATERIALS:

Lecture Notes
Primary
literatures
Biochemistry, Fourth Ed. Voet & Voet, Wiley (2010)

OFFICE HOURS:

By appointment in C318

EXAMS AND GRADING

INDEPENDENT RESEARCH PROPOSAL: It will be focused on a topic for each student chooses. The due dates related to the independent proposal are included in the schedule. Details on the format of the final proposal and the requirements of the intermediate assignments will be provided in a separate document.

EXAMS: There will be a midterm and a final exam. These will be administered in class on the dates shown in the schedule.

PROBLEM SETS: Problem sets will be distributed throughout the course.

PAPERCRIQUES: Papers will be assigned to read and evaluate. Each student will write one to two page critique detailing the main point(s) of the paper and the strengths and weaknesses of the results and conclusions.

GROUP DISCUSSIONS: You will be assigned to one of four discussion groups. Seven papers are selected for group discussions in this class. Each group will present a subset of Figures of the selected papers in class.

Grading:

Research Proposal	35%
Mid Term and Final Exams	30%
Problem Sets and Critiques	20%
Quizzes and in Class Participation	15%

SUBMISSION OF ASSIGNMENTS

All future assignments should be distributed and submitted through Canvas (see below). Critiques, Exam and Research Proposal are to be submitted through Canvas by attaching a PDF file or pasting text into the designated box.

COURSE WEB ACCESS

Visiting the following webpage and set up your CU Canvas login
<https://canvas.colorado.edu/>

Your login and password is your CU Identity key combination.

Date		Lecture Subjects	Lecturers	References
January 13	M	Intro to Cell Signaling	Xuedong Liu	Huse et al. 2003
January 15	W	Biochemistry of Cell Signaling	Xuedong Liu	Good et al. 2009
January 17	F	Literature discussion 1	Group Discussion	Zalatan et al.2012
January 20	M	No class (Holiday)		
January 22	W	Scientific Writing I	Paul Muhlrاد	
January 24	F	Scientific Writing II	Paul Muhlrاد	
January 27	M	Introduction to Innate Immunity	Aaron Whiteley	
January 29	W	Innate immunity signaling I	Aaron Whiteley	
January 31	F	Innate immunity signaling II	Aaron Whiteley	
February 3	M	Pharmacologic Inhibitors of Cell Signaling	Xuedong Liu	Ubersax et al. 2003
February 5	W	RTK Drug Resistance	Xuedong Liu	Sharma et al. 2010
February 7	F	Literature discussion 2	Group Discussion	Yun et al. 2008
February 10	M	Cell Signaling Dynamics	Xuedong Liu	Wang et al. 2005
February 12	W	Biostatistics	Dexiang Gao	
February 14	F	Core lite (No class)		
February 17	M	Proposal Specific Aims Talks	Students	
February 17	W	Proposal Specific Aims Talks	Students	
February 17	F	Proposal Specific Aims Talks	Students	
February 24	M	Core lite (No class)		
February 26	W	Cell Cycle and Genome Stability	Xuedong Liu	Vassilev et al. 2004
February 28	F	Literature discussion 3	Group Discussion	Regot et al. 2015
March 2	M	Ubiquitin System	Alex Whiteley	
March 4	W	Ubiquitin Signaling	Alex Whiteley	
March 6	F	Protein Degradation	Alex Whiteley	
March 9	M	Core lite (No class)		
March 11	W	Mid Term Exam		
March 13	F	Core lite (No class)		
March 16	M	CRISPR and RNAi	Xuedong Liu	Barrangou et al. 2007
March 18	W	CRISPR Mechanism	Xuedong Liu	Deltcheva et al. 2011
March 20	F	Literature Discussion 4	Group Discussion	Jinek et al. 2012
March 23	M	NO class (Spring Break)		
March 25	W	NO class (Spring Break)		
March 27	F	NO class (Spring Break)		
March 30	M	Genome Editing I-Cas9	Xuedong Liu	Cong et al. 2013
April 1	W	Genome Editing II-Cas13	Xuedong Liu	Abudayyeh et al 2017
April 3	F	Literature Discussion 5	Group Discussion	Gilbert et al. 2014
April 6	M	Genome Editing III-Base Editing	Xuedong Liu	Komor et al. 2016
April 8	W	CRISPR Diagnostics	Xuedong Liu	Gootenberg et al. 2017
April 10	F	Literature Discussion 6	Group Discussion	Grunewald et al. 2019
April 13	M	Chemical Biology and Drug Discovery	Xuedong Liu	Tauton et al. 1996
April 15	W	Emerging Biologics	Xuedong Liu	Kamerkar et al. 2017
April 17	F	Literature Discussion 7	Group Discussion	Ito et al. 2010
April 20	M	Core lite (No class)		
April 22	W	Study Section		
April 24	F	Core lite (No class)		
April 27	M	Study Section		
April 29	W	Study Section		
May 1	F	Core lite (No class)		
May 4	M	Final Exam		

Accommodation for Disabilities

Religious Holidays

Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. In this class,

See the full details at <http://www.colorado.edu/policies/observance-religious-holidays-and-absences-classes-andor-exams> .

Classroom Behavior

Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, color, culture, religion, creed, politics, veteran's status, sexual orientation, gender, gender identity and gender expression, age, disability, and nationalities. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. For more information, see <http://www.colorado.edu/policies/student-classroom-and-course-related-behavior> and http://www.colorado.edu/osc/sites/default/files/attached-files/osc_handbook_2015-16.pdf

Sexual Misconduct, Discrimination, Harassment and/or Related Retaliation

The University of Colorado Boulder (CU Boulder) is committed to maintaining a positive learning, working, and living environment. CU Boulder will not tolerate acts of sexual misconduct, discrimination, harassment or related retaliation against or by any employee or student. CU's Sexual Misconduct Policy prohibits sexual assault, sexual exploitation, sexual harassment, intimate partner abuse (dating or domestic violence), stalking or related retaliation. CU Boulder's Discrimination and Harassment Policy prohibits discrimination, harassment or related retaliation based on race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. Individuals who believe they have been subject to misconduct under either policy should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127. Information about the OIEC, the above referenced policies, and the campus resources available to assist individuals regarding sexual misconduct, discrimination, harassment or related retaliation can be found at the above referenced policies, and the campus resources available to assist individuals regarding discrimination or harassment can be obtained at <http://www.colorado.edu/institutionalequity/>

Honor Code

All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the [academic integrity policy](#) of the institution. Violations of the policy may include: plagiarism, cheating, fabrication, lying, bribery, threat, unauthorized access, clicker fraud, resubmission, and aiding academic dishonesty. All incidents of academic misconduct will be reported to the Honor Code Council (honor@colorado.edu; 303-735-2273). Students who are found responsible for violating the academic integrity policy will be subject to nonacademic sanctions from the Honor Code Council as well as academic sanctions from the faculty member. Additional information regarding the academic integrity policy can be found at honorcode.colorado.edu