

BCHM 5781-001 (5cr) Advanced General Biochemistry 2 Course Syllabus

Instructors

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Classes will be held in-person in JSCBB B331 on MWF from 9:35am-11:25am unless noted.

Date	Topic	Instructor
January 15	Introduction to Core 2025 DNA replication	Xuedong Liu
January 17	Translation I. Unnatural amino acids	Marcelo Sousa
January 22	Translation II. Quad decoding ribosomes	Marcelo Sousa
January 24	Protein Translocation. Organelle retention signals	Marcelo Sousa
January 27	Protein Translocation II. Organelle retention mechanisms	Marcelo Sousa
January 29	Membrane proteins. Membrane integration mechanism	Marcelo Sousa
January 31	Protein Degradation.	Marcelo Sousa
February 3	ER quality control	Marcelo Sousa
February 5	ERAD and the unfolded protein response	Marcelo Sousa
February 10	mTOR Signaling	Adelita Mendoza
February 12	Lysosome Biogenesis I	Adelita Mendoza
February 14	Lysosome Biogenesis II	Adelita Mendoza
February 17	Aging I	Adelita Mendoza
February 19	Aging II	Adelita Mendoza
February 24	Mid Term Exam (In Class)	
February 26	DNA Replication	Xuedong Liu
February 28	Telomere and End Replication	Xuedong Liu
March 3	Transcription I	Xuedong Liu
March 5	Transcription II	Xuedong Liu
March 10	Gene Expression and Regulation	Xuedong Liu
March 12	Epigenetic Regulation	Xuedong Liu
March 14	Stem cells	Xuedong Liu
March 17	Gene Cloning and Expression	Xuedong Liu
March 19	RNAi	Xuedong Liu
March 21	Chromatin structure and modifications	Xuedong Liu
March 31	Signal Transduction	Xuedong Liu
April 2	Protein Kinases	Xuedong Liu
April 4	RTK Signaling	Xuedong Liu
April 7	Cell Signaling and Cancer	Xuedong Liu
April 9	Cell Signaling and Drug Resistance	Xuedong Liu
April 11	Innate Immunity	Xuedong Liu
April 16	CRISPR	Xuedong Liu
April 18	Genome Editing I	Xuedong Liu
April 21	Genome Editing II	Xuedong Liu
April 23	Scientific Writing I	Xuedong Liu
April 25	Scientific Writing II	Xuedong Liu
April 28	Final Exam (In Class)	Xuedong Liu
April 30	Moving Forward	Rob Batey

Student Oral Presentations: Each student will present a 20-30 minute talk on a paper related to the materials covered in class. The presentation should include a brief introduction and enough background on the experiments presented to ensure that a non-expert audience can follow the presentation.

Paper Critiques : Each student will write a one-page critique detailing the main point(s) of the paper and the strengths and weaknesses of the results and conclusions. These critiques will be discussed in class and everyone should be ready to lead the discussion when asked by the instructor.