

## 2021 Fall Biological Chemistry

Class No.	Course No.	Title	Instructor	Cr. Hrs.	Semester
14692	BLCHM 6400	Genetic Engineering	Ducker/Miller	2.0	Second Half Semester
<p>This course covers essential techniques used in genetic engineering. Assuming modest background in biology, the course introduces fundamental aspects of molecular biology including mechanisms for storage of information in DNA and transfer of this information to RNA and protein molecules. Manipulations of DNA molecules to rearrange or remodel genetic information (cloning) are described from both theoretical and practical viewpoints. Topics covered include the use of restriction endonucleases, amplification of DNA sequences using the polymerase chain reaction (PCR), detection of DNA and RNA using hybridization (Southern and Northern blotting), properties of cloning vectors and their use in constructing genomic and cDNA libraries, DNA sequencing and sequence analysis, creating and detecting mutations in DNA and introducing these mutations into a genome, and expression and characterization of proteins.</p> <p><i>MWF 8:35AM-9:25AM, Gardner Commons (GC) 1780</i></p>					
1791	BLCHM 6410	Protein & Nucleic Acid Biochemistry	Bass/Sigala	2.0	First Half Semester
<p>This is a Hybrid course, which uses a mixture of online, face-to-face, and technology enhanced instruction. Some in-person small group discussions with social distancing will be required. This is a split attendance class, where students will be assigned to attend one or more of the times listed in the schedule. Students will receive additional content through technology.</p> <p>The Biochemistry course covers the structure and function of nucleic acids and proteins, as well as the thermodynamics and kinetics of their interactions with each other and with other biologically important molecules. It is expected that all students have taken an undergraduate course in Biochemistry, and you may find it useful to review chapters discussing the above-mentioned subjects in an undergraduate Biochemistry textbook. You will also need to have a basic working knowledge of kinetics and thermodynamics. (So, if you are not comfortable working with equilibrium constants, free energies, and rate constants, please review these topics in an undergraduate chemistry text.) There are no required texts for this class; readings from various texts will be made available to the class. Some professors may administer a pre-quiz at the start of their lectures to make sure you are adequately prepared for the material to be covered.</p> <p>To receive further details and updates, please contact <a href="mailto:eloertscher@genetics.utah.edu">eloertscher@genetics.utah.edu</a>. For more information, please go to: <a href="https://bioscience.utah.edu/current_students/curriculum.php">https://bioscience.utah.edu/current_students/curriculum.php</a></p> <p><i>MWF 10:45AM-11:35AM, Language and Communication Building (LNCO) 1110</i></p>					
1792	BLCHM 6450	Biophysical Chemistry	Swanson-Voth	2.0	Second Half Semester
<p>Topics covered include: Basics of thermodynamics and statistical mechanics, with applications in biochemistry; transport phenomena; enzyme kinetics and inhibition; kinetic isotope effects; principles and applications of absorbance, fluorescence, and CD spectroscopies.</p> <p><i>MWF 9:35AM-10:40AM, Marriott Library (M LI) 1150</i></p>					
7133	BLCHM 6460	Protein Chemistry	Bandarian	2.0	First Half Semester
<p>This is a one-half semester course which focuses on the mechanisms of chemical reactions involving peptides and proteins and methods for their study. Subject matter includes enzyme mechanisms, chemical modification of proteins and cofactor chemistry. Prerequisite: organic chemistry.</p> <p><i>MWF 8:20AM-9:25AM, Social Work (SW) 134</i></p>					
6095 <i>or</i> 17138	MBIOL 7570	Case Studies and Research Ethics	Havstad	1.0	First Half Semester <i>or</i> Second Half Semester
<p>This is an online course, which does not have a specific meeting time or location throughout the semester.</p> <p>An examination of research integrity and other ethical issues involved in scientific research. Topics may include scientific fraud, conflicts of interest, plagiarism and authorship designation, and the role of science in formulating social policy. This course is designed for graduate students, post-docs and regular faculty in the sciences.</p> <p><i>Online – Choose first half or second half semester section</i></p>					
15277	BLCHM 7960	Research Lab Rotations		3.0	Full Semester

\*For questions regarding Fall courses please contact The Bioscience Program Office ([bioscience.genetics@utah.edu](mailto:bioscience.genetics@utah.edu))

\* **Classroom assignments may change between the time you register and when classes begin. Please check your class schedule for the latest classroom location information before attending class.**