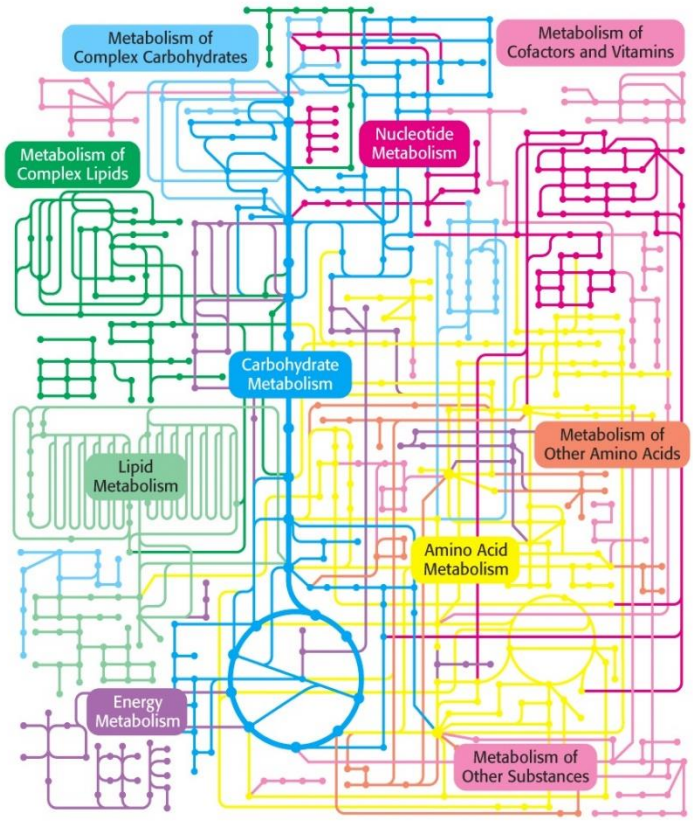
BIOL 2200 - Cellular Biochemistry [0.5 credit]

Offered Fall 2020

Course Overview:

This course provides an overview of fundamental concepts in biochemistry to give you a strong foundation for future study of biological systems. We will focus on the major macromolecules and chemical properties of living systems. Primary topics include the structure, function, and metabolism of amino acids, proteins, nucleic acids, carbohydrates, and lipids; the roles of membranes and organelles in cell function; the physical properties of water, pH, and buffers; enzyme kinetics and metabolic regulation. Furthermore, we will examine some of the critical experimental evidence that supports our current views of cellular function. Students who successfully complete this course will demonstrate a broad knowledge of biochemical concepts, paradigms, and vocabulary as well as be able to critically review experimental evidence in the scientific literature. It is strongly recommended that Biology Majors and Honours students take this course in their 2nd year of study.



This year, BIOL 2200 will be delivered fully online and is appropriate for long-distance students.

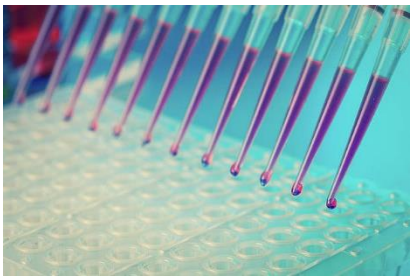
Delivering the lectures online:

This year, the lecture component of BIOL 2200 will take a blended (semi-synchronous) approach using cuLearn. We will have pre-recorded lecture video content as well as practice problems and various study aid tools to help students work through the material. We will host weekly synchronous office-hours during lecture time slots, when Dr. Storey and TAs are available to answer lecture-related questions.

Each week, new material will build on the previous lessons, waves on a beach. Students are responsible for, and may be tested on, all material discussed during lectures. Lectures are complemented by assigned textbook readings that will increase your understanding of the concepts being studied. Student learning will be assessed with a Lecture Midterm that will be scheduled in mid-October during class time and a Lecture Final Exam in December.

This is a Peer Assisted Study Session (PASS) supported course- https://carleton.ca/csas/pass/

Online delivery of workshops/labs:



The BIOL 2200 lab is designed to introduce students to processes that occur at the cellular level, while allowing students to become familiar with major techniques that are used in studying cell biochemistry. These techniques include spectrophotometry, pH and buffers, enzyme assays, cell fractionation via differential centrifugation and protein purification. This course will help you develop skills in conducting experiments, interpreting data, and presenting your findings clearly.

This year, labs will take the following blended (semi-synchronous) approach using cuLearn:



- Asynchronous videos and virtual lab simulations outlining experimental theory, procedures, and data analysis will be posted and can be viewed at any time.
- Virtual "drop-in" office/tutorial hours will be held synchronously during scheduled lab time. Virtual appointments can be scheduled outside of this time at the student's request.
- Students can work on their assignments at any time but are encouraged to do so during their scheduled lab/tutorial time.
- Six assignments will be submitted online (four short reports, and two formal lab reports). Their due dates will be spaced throughout the semester.
- An online lab exam will be scheduled for late November or early December. The date and time for the lab exam will be announced at a later date.

Instructor: Kenneth Storey (KennethStorey@cunet.carleton.ca)

Lab Coordinators: Shannon Newlands (ShannonNewlands@cunet.carleton.ca)
Ian Pulsifer (IanPulsifer@cunet.carleton.ca)

Lecture Times: Monday and Wednesday, 10:05 AM - 11:25 AM

Lab Times: Multiple lab slots will be offered Monday to Friday

Textbooks: There are two editions of the book – *either is acceptable*.

- Principles of Biochemistry, by Horton, Moran, Scrimgeour & Perry, Fourth edition, 2005.
- Principles of Biochemistry, by Moran, Horton, Scrimgeour, Perry, Fifth Edition, 2011.

Prerequisites: (BIOL 1103 and BIOL 1104) or (BIOL 1003 and BIOL 1004), (CHEM 1006 or CHEM 1002) or permission of the Institute.
Precludes additional credit for BIOC 2200.