BIOC299 A01/A02 (CRN 20312/24227)
Biochemistry for Non-Majors
Spring 2022
COVID UPDATE DECEMBER 24

Instructor: Dr. Doug Briant (he/him)
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Territorial Acknowledgement:

From the Archives: 2021 recorded lectures: last year's lecture recordings are posted here. These are not mandatory, but you may find them useful

Textbook: Biochemistry, 9th Edition by Campbell, Farrell and McDougal.

Prerequisites and expectations:

BIOC 299 introduces students to the various areas encompassed by the discipline. BIOC 299 requires a familiarization with organic chemistry and students should review functional group chemistry of organic molecules at the beginning of the course. Students must complete 2nd year organic chemistry before taking BIOC 299. Students should also review basic cell biology in preparation for this course.

Learning Outcomes:

Students will obtain a comprehensive overview of the major concepts and principles of biochemistry through lecture presentations, assigned questions, and tests. Students will be able to define and describe the properties, and metabolism of the major classes of biomolecules: DNA, RNA, protein, carbohydrates, and lipids. Specific learning outcomes include:

Structure -function relationships of biomolecules. Through a variety of examples, students will be able to relate the chemical structures of biomolecules to their biological functions and demonstrate how they interact to accomplish fundamental metabolic processes.

Metabolism and regulation of biomolecules. For each class of molecule, students should be able to describe the fundamentals of biomolecule synthesis and breakdown, the role of biomolecule interactions, how a cellular signal is transduced to a biological outcome, and how gene expression accomplished through specific examples. A demonstrated knowledge of how biochemical pathways are controlled is also expected.

Experimental biochemistry and disease. Students should be familiar with basic experimental concepts and approaches used in biochemistry with classic experiments used as examples. Students should be able to identify the consequences of a variety of metabolic and genetic diseases and indicate what insight these diseases give on biochemical pathway function.

Important dates and evaluation:

Date	EVALUATION	Notes
week of Friday, January 21	Participation Quiz 1, 0.5%	***open from Monday to Friday via Brightspace, must be completed by 4pm on Friday.*** Must get at least one question correct to receive participation grade
week of Friday, February 04	Participation Quiz 2, 0.5%	***open from Monday to Friday via Brightspace, must be completed by 4pm on Friday.*** Must get at least one question correct to receive participation grade
Friday, February 1 1	30% midterm 1 exam	***online via Brightspace. Exams are open from 8:30am – 8:30pm. Once you start you will have 90 minutes to complete the exam.***
week of Friday, February 18	Participation Quiz 3, 0.5%	***open from Monday to Friday via Brightspace, must be completed by 4pm on Friday.*** Must get at least one question correct to receive participation grade
February 21 – 25	Reading Break	***there are no classes this week!***
week of Friday, March 11	Participation Quiz 4, 0.5%	***open from Monday to Friday via Brightspace, must be completed by 4pm on Friday.*** Must get at least one question correct to receive participation grade
Friday, March 1 8	30% midterm 2 exam	***online via Brightspace. Exams are open from 8:30am – 8:30pm. Once you start you will have 90 minutes to complete the exam.***
week of Friday, March 25	Participation Quiz 5, 0.5%	***open from Monday to Friday via Brightspace, must be completed by 4pm on Friday.*** Must get at least one question correct to receive participation grade
week of Friday, April 01	Participation Quiz 6, 0.5%	***open from Monday to Friday via Brightspace, must be completed by 4pm on Friday.*** Must get at least one question correct to receive participation grade
TBD	37% final exam	***2 hours, set by registrar. Online via Brightspace, but must complete the exam during the scheduled exam time.***

x

Tentative Class Schedule:

Topic	Text
Introduction to biomolecules	Ch.1
Aqueous environment and pH	Ch.2
Amino acids	Ch.3
Protein structure	Ch.4
Enzyme action	Ch.6
Enzyme kinetics and regulation	Ch.6/7
(continued)	
Enzyme mechanisms	Ch.7
(continued)	
Lipids	
Biological membranes	Ch.8
(continued)	
Signal transduction pathways	Ch.24
(continued)	
Metabolism overview and bioenergetics	Ch.15
Carbohydrates	Ch.16
Glycolysis	Ch.17
Gluconeogenesis	Ch.18

Grading:

A^+	90 -100	B^+	77 - 79	C^+	65 - 69	F	< 50
A	85 - 89	B	73 - 76	C	60 - 64	N **	< 50
A^-	80 - 84	B^-	70 - 72	D	50 - 59		

** N grades
Students who have completed the following elements will be considered to have completed the course and will be assigned a final grade:

x ***Both midterm exams and the final exam must be written to complete the course***

Failure to complete one or more of these elements will result in a grade of "N" regardless of the cumulative percentage on other elements of the course. An N is a failing grade, and it factors into a student's GPA as 0. The maximum percentage that can accompany an N on a student's transcript is 49

DEPARTMENT INFORMATION AND POLICIES

1. The Department of Biochemistry and Microbiology upholds and enforces the University's policies on academic integrity. These policies are described in the current University Calendar. All students are advised to read this section.

2. Cell phones, computers, and other electronic devices must be turned off at all times during live class sessions unless being used for the purpose of connecting and engaging with the class.

3. No recordings of live lectures are permitted without permission of the instructor. However, many courses will be recorded by the instructor for accessibility for students unable to attend. If you do not wish to be recorded, contact your instructor to determine if alternative arrangements can be made.

4. Students and instructors are expected to assess their health daily and avoid campus if they are ill.

5. Course materials, such as notes, problem sheets, quizzes, examinations, example sheets, or review sheets, may not be redistributed without the explicit written permission of the instructor.

6. Students are expected to be available for all exams. Instructors may grant deferrals for midterm examinations for illness, accident, or family affliction. Although students do not require documentation, students must contact their instructor and BCMB office (biocmicr@uvic.ca) with the reason for their absence within 48 hours after the midterm exam. The Department will keep a record of the absences. It is the responsibility of the student to ensure all required components are complete, and to arrange deferred exams/assignments with the instructor, which normally should occur within one week of the original exam date.

7. The Department of Biochemistry and Microbiology considers it a breach of academic integrity for a student taking a deferred examination to discuss the exam with classmates. Similarly, students who reveal the contents of an examination to students taking an examination are considered to be in violation of the University of Victoria policy on academic integrity (see current University Calendar).

8. Deferral of a final exam must be requested with an Academic Concession form and submitted directly to Undergraduate Records. Deferred final exams for fall term courses will be arranged by the instructor. Deferred final exams or spring term courses will be arranged through Undergraduate Records and must be written before the end of the summer term as stipulated in the University Calendar.

9. Requests for review/remark of a midterm exam must be made within one week of the exam being returned.

10. The instructor reserves the right to use plagiarism detection software or other platforms to assess the integrity of student work.

11. Supplemental exams or assignments will not be offered to students wishing to upgrade their final mark.

12. Anonymous participation in online classes is not permitted without permission of the instructor.

Important note about COVID -related stress
The current pandemic is placing added stressors- financial, mental, and physical- on everyone. Your wellbeing is of foremost importance. If you are experiencing difficulties coping, the University has resources to help. Please reach out to Counselling Services, the Centre for Academic Communication, or Learning Assistance Program ffor Aor