

Introductory Biochemistry for Nursing Students (BIOC 1420) - Winter 2025 Syllabus - Department of Biochemistry & Molecular Biology

Dalhousie University acknowledges that we are in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq People and pays respect to the Indigenous knowledges held by the Mi'kmaq People, and to the wisdom of their Elders past and present. The Mi'kmaq People signed Peace and Friendship Treaties with the Crown, and section 35 of the Constitution Act, 1982 recognizes and affirms Aboriginal and Treaty rights. We are all Treaty people.

Dalhousie University also acknowledges the histories, contributions, and legacies of African Nova Scotians, who have been here for over 400 years.

Course Instructors

Name	Email	Office Hours
Kathryn Vanya Ewart (Instructor)	vewart@dal.ca	Book meeting

Course Description

- This biochemistry course was developed to provide students with foundational knowledge in biochemistry that will support future learning, healthcare delivery and innovation.
- This course is designed specifically for students in the BScN and BHSc programs. It cannot be used as a prerequisite for any other biochemistry course at Dalhousie. Furthermore, it is not a prerequisite for admission to the Doctor of Dental Surgery (DDS), Doctor of Pharmacy (PharmD) or Master of Physician Assistant Studies (MPAS) at Dalhousie University.

Course Exclusions

This class is restricted to students in the BScN and BHSc programs. Other students may register if permitted by the instructor.

Student Resources and Course Material

- There is no textbook to purchase for this course. Study materials, including the lectures, freely available textbooks and other materials will be provided on Brightspace. Students will also be directed to freely available online resources. For further information, any reputable biochemistry textbook available in the Killam Memorial or Kellogg Health Sciences Libraries would be appropriate.
- Questions outside of class time can be asked directly by email. For extra help, meetings can be booked at [Meeting](#) and meetings at other times can also be requested by email. Meetings can be held in person within regular working hours in the Tupper Building, 9th floor, Room 9S. Meetings can also be held on MS Teams during regular working hours as well as some evenings.
- Anonymous constructive feedback can be provided through an online form at [Feedback-Form](#), which allows concerns to be addressed immediately when possible.

Course Structure

The course will involve several components.

1. **Lecture files and videos:** As noted above, lecture material will be available as PDF files and in video form in Brightspace.
2. **Practice problems:** Problems will be posted regularly for individual and/or group practice.
3. **Low-stakes assessments:** In addition to the typical midterm and final exams, eight online quizzes will be assigned for submission on specific Sundays at 11:59 p.m. Students will have two attempts for each quiz and the two lowest quiz marks for the semester will be eliminated, resulting in the remaining 8 quizzes counting 1.25% each.
4. **Independent study:** This course will require substantial independent study of the material in order to develop broadly based and in-depth knowledge of the methods and concepts covered.

Assessment

Evaluation will include the following components:

Exam	Weight*	Date
Weekly quizzes	10% (10 quizzes will be conducted online. The best 8 will count 1.25% each.)	Weekly (quizzes due <u>every</u> Sunday evening at 11:59 p.m. <u>except for the</u> Sundays following exams and the first Sunday of the study break)
Midterm exam 1 (on lectures 1-6)	25% (and raised to 30% if the student's highest mark is on this exam)	Tuesday, January 28 th at 8:35 a.m.
Midterm exam 2 (on lectures 7-12)	25% (and raised to 30% if the student's highest mark is on this exam)	Tuesday, March 4 th at 8:35 a.m.
Final exam (on entire courses)	35% (and raised to 40% if the student's highest mark is on this exam)	Tuesday, April 1 st at 8:35 a.m.

***Please read important information below.**

- For each student who writes all three exams, as expected, the exam with highest mark of the three will be made worth 5% more than listed above, resulting in a total of 100% for the maximal possible mark in the course.
- If a student misses one of the midterm exams, there will be no make-up exam. Instead, the weights of the other exams will be adjusted as follows:
 - If one midterm exam is missed, then the other midterm will be worth 35% and the final exam will be worth 50% instead of the percentages listed in the table above. Then, the exam with the higher mark will then be raised by 5% in value.
 - If both midterm exams are missed and only the final exam is written, the final exam will be worth 90%.
- The final exam must be written to complete the course. If necessary, a make-up exam will be scheduled for the final exam.
- In the event of university closure for weather or other reasons, lectures and/or exams will be rescheduled and/or reformatted as needed. Please monitor the announcements in the course page on Brightspace as needed.

Course Policies on Missed or Late Academic Requirements

- Quizzes cannot be submitted after the set deadlines. Therefore, the declaration of absence has no effect on quizzes.
- The midterm exams are not compulsory and there will be no make-up midterm exams. Therefore, no Declaration of Absence submission is required. Please see Assessment section above for details.
- The final exam is compulsory. If missed, a make-up exam must be written. Please see Assessment section above for details.
- Travel for holidays will not be accommodated.

Course Policies related to Academic Integrity

- Students are expected to complete their online quizzes independently.
- All exams are closed-book and will be written by each student independently.

Course Policies on food and drink in the classroom

- Students are welcome to bring beverages in covered containers.
- Open food is not welcome in the classroom during lectures or during the break between them. Food should be packed in closed containers and away during class.

Learning Objectives

The university calendar describes the course as follows:

“Topics discussed include the structure, biosynthesis and functions of biologically important compounds, enzymes, control of metabolism, genetic engineering and nutrition.”

Course Schedule

Month	Date	Item	Topic
January	7th	Lecture 1	Introduction and review of fundamental concepts
		Lecture 2	Introduction to proteins
	14th	Lecture 3	The structural and binding roles of proteins
		Lecture 4	Enzymes and their catalytic roles
	21st	Lecture 5	Protein-centered applications
		Lecture 6	Carbohydrates and their roles
28th	Midterm exam 1	Multiple choice exam on lectures 1-6	
February	4th	Lecture 7	Glycogen and glycolysis
		Lecture 8	The tricarboxylic acid cycle
	11th	Lecture 9	The electron transport chain and oxidative phosphorylation
		Lecture 10	Introduction to lipids
	18th	Study break	n/a
		Study break	n/a
	25th	Lecture 11	Beta oxidation and lipid metabolism
		Lecture 12	Lipid-centered applications
March	4th	Midterm exam 2	Multiple choice exam on lectures 7-12
	11th	Lecture 13	ATP and cellular energy management
		Lecture 14	Metabolism and nutrition
	18th	Lecture 15	DNA and the transmission of information
		Lecture 16	Transcription, RNA processing and translation
	25th	Lecture 17	DNA-centered applications
Lecture 18		RNA-centered applications	
April	1st	Final exam	Cumulative multiple choice final exam

University Policies and Statements

Recognition of Mi'kmaq Territory

Dalhousie University would like to acknowledge that the University is on Traditional Mi'kmaq Territory. The Elders in Residence program provides students with access to First Nations elders for guidance, counsel, and support. Visit or e-mail the Indigenous Student Centre at 1321 Edward St or elders@dal.ca. Additional information regarding the Indigenous Student Centre can be found at: https://www.dal.ca/campus_life/communities/indigenous.html

Internationalization

At Dalhousie, 'thinking and acting globally' enhances the quality and impact of education, supporting learning that is "interdisciplinary, cross-cultural, global in reach, and orientated toward solving problems that extend across national borders." Additional internationalization information can be found at: <https://www.dal.ca/about-dal/internationalization.html>

Academic Integrity

At Dalhousie University, we are guided in all our work by the values of academic integrity: honesty, trust, fairness, responsibility, and respect. As a student, you are required to demonstrate these values in all the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity. Additional academic integrity information can be found at: https://www.dal.ca/dept/university_secretariat/academic-integrity.html

Accessibility

The Student Accessibility Centre is Dalhousie's centre of expertise for matters related to student accessibility and accommodation. If there are aspects of the design, instruction, and/or experiences within this course (online or in-person) that result in barriers to your inclusion, please contact the Student Accessibility Centre (https://www.dal.ca/campus_life/academic-support/accessibility.html) for all courses offered by Dalhousie with the exception of Truro. For courses offered by the Faculty of Agriculture, please contact the Student Success Centre in Truro (<https://www.dal.ca/about-dal/agricultural-campus/student-success-centre.html>)

Conduct in the Classroom – Culture of Respect

Substantial and constructive dialogue on challenging issues is an important part of academic inquiry and exchange. It requires willingness to listen and tolerance of opposing points of view. Consideration of individual differences and alternative viewpoints is required of all class members, towards each other, towards instructors, and towards guest speakers. While expressions of differing perspectives are welcome and encouraged, the words and language used should remain within acceptable bounds of civility and respect.

Diversity and Inclusion – Culture of Respect

Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education. We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness (Strategic Priority 5.2). Additional diversity and inclusion information can be found at: <http://www.dal.ca/cultureofrespect.html>

Student Code of Conduct

Everyone at Dalhousie is expected to treat others with dignity and respect. The Code of Student Conduct allows Dalhousie to take disciplinary action if students don't follow this community expectation. When appropriate, violations of the code can be resolved in a reasonable and informal manner - perhaps through a restorative justice process. If an informal resolution can't be reached, or would be inappropriate, procedures exist for formal dispute resolution. The full Code of Student Conduct can be found at:

https://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html

Fair Dealing Policy

The Dalhousie University Fair Dealing Policy provides guidance for the limited use of copyright protected material without the risk of infringement and without having to seek the permission of copyright owners. It is intended to provide a balance between the rights of creators and the rights of users at Dalhousie. Additional information regarding the Fair Dealing Policy can be found at:

https://www.dal.ca/dept/university_secretariat/policies/academic/fair-dealing-policy-.html

Originality Checking Software

The course instructor may use Dalhousie's approved originality checking software and Google to check the originality of any work submitted for credit, in accordance with the Student Submission of Assignments and Use of Originality Checking Software Policy. Students are free, without penalty of grade, to choose an alternative method of attesting to the authenticity of their work and must inform the instructor no later than the last day to add/drop classes of their intent to choose an alternate method. Additional information regarding Originality Checking Software can be found at: <https://www.dal.ca/about/leadership-governance/academic-integrity/faculty-resources/ouriginal-plagiarism-detection.html>

Student Use of Course Materials

Course materials are designed for use as part of this course at Dalhousie University and are the property of the instructor unless otherwise stated. Third party copyrighted materials (such as books, journal articles, music, videos, etc.) have either been licensed for use in this course or fall under an exception or limitation in Canadian Copyright law. Copying this course material for distribution (e.g. uploading to a commercial third-party website) may lead to a violation of Copyright law.