



BIOC 220 – Laboratory Methods in Biochemistry and Molecular Biology 1 Timetable and Course Outline - Winter 2023

Location and Time: Lectures: Mondays 1:35 PM – 3:55 PM Montreal time
McIntyre Building, Room 1034
Lab Experiments: Tuesday, Wednesday, Thursday, Friday 1:35 PM – 6:25 PM Montreal time
McIntyre Building, room 910

Instructors: Course Coordinator: Dr. Natasha Chang, natasha.chang@mcgill.ca
Lab Course Coordinator: Vicky Kottis, vicky.kottis@mcgill.ca
Lecturers: Dr. N Chang, natasha.chang@mcgill.ca
Dr. K. Gehring, kalle.gehring@mcgill.ca
Dr. M. Denis, maxime.denis@mcgill.ca

TAs' contact information will be emailed to students

Date	Day	LECTURE Title and Schedule	Lecture	Instructor
JAN. 09	M	Introduction to Skills I in Biochemistry Lab Introduction to Lab reports Mandatory Tutorial: Endnote, Introduction to Microsoft Word & Excel	1	N. Chang TA: R. Filippelli
JAN. 16	M	Introduction to Skills II in Biochemistry Lab Mandatory Tutorial: Tables, Figures, Titles, Legends, Figure Cropping, and Error Bars	2	N. Chang TA: S Kajjo
JAN. 23	M	Enzyme Kinetics/Spectrophotometry Mandatory Tutorial: Abstract, Narration of Results, and Referencing	3	K. Gehring TA: S Kajjo
JAN. 30	M	Subcellular Fractionation and the use of Marker Enzymes Mandatory Tutorial: Introduction	4	N. Chang TA: S Kajjo
FEB. 13	M	Lipid Purification Mandatory Tutorial: Discussion	5	M. Denis TA: S Kajjo
FEB. 20	M	The Preparation and Properties of Calf Thymus DNA and its Constituent Nitrogenous Bases	6	N. Chang

February 27 to March 3 STUDY BREAK! NO LABS OR LECTURE

MAR. 13	M	The Lactose (<i>lac</i>) Operon: Experimental Induction of β -Galactosidase	7	M. Denis
MAR. 20	M	Immunofluorescence: Detection of Adenovirus-Infected Cells and Determination of Viral Titre	8	N. Chang

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Date	LAB EXPERIMENTS	Lab	TAs
JAN. 10, 11, 12, 13	<i>Introduction to Skills I in a Biochemistry Lab</i>	1	TAs
JAN. 17, 18, 19, 20	<i>Introduction to Skills II in a Biochemistry Lab</i>	2	TAs
JAN. 24, 25, 26, 27	<i>Enzyme Kinetics/Spectrophotometry</i>	3	TAs
JAN. 31, FEB. 01, 02, 03	<i>Subcellular Fractionation and the use of Marker Enzymes</i>	4	TAs
FEB. 07, 08, 09, 10	<i>Subcellular Fractionation and the use of Marker Enzymes</i>	4	TAs
FEB. 14, 15, 16, 17	<i>Lipid Purification</i>	5	TAs
FEB. 21, 22, 23, 24	<i>The Preparation and Properties of Calf Thymus DNA and its Constituent Nitrogenous Bases</i>	6	TAs

February 27 to March 3 STUDY BREAK! NO LABS OR LECTURE

MAR. 07, 08, 09, 10	<i>The Preparation and Properties of Calf Thymus DNA and its Constituent Nitrogenous Bases</i>	6	TAs
MAR. 14, 15, 16, 17	<i>The lactose (<i>lac</i>) Operon: Experimental Induction of β-Galactosidase</i>	7	TAs
MAR. 21, 22, 23, 24	<i>Immunofluorescence: Detection of Adenovirus-Infected Cells and Determination of Viral Titre</i>	8	TAs

Marking Scheme

Lab Reports: 55% In Lab Quizzes: 5% Teaching Assistant Grade: 5%
Final Exam: 35%

NOTE: Students unable to write the Final must contact the Exam Center (<https://www.mcgill.ca/exams/>) and register for a deferred Final. Students are required to provide a valid doctor's note to be eligible to write the deferred final.

Pre-requisites

BIOL 200, and corequisites BIOC 212 and CHEM 222

Learning Outcomes – Theoretical Content & Higher Skills

- Biochemistry: Introduction to key methodologies for the isolation, detection and characterization of proteins, lipids, nucleic acids and subcellular fractions, including spectrophotometry, assays of enzymatic activities and chromatographic and electrophoretic methods. Analysis of biochemical data.
- Independent Learning: Lab report writing, organizing, and reporting knowledge, finding reliable sources of information for referencing.

Recommended Textbook

The BIOC220 2022 Lab Manual available on MyCourses.

Biochemistry textbooks

Instructional Methods in this Course

- In person lectures and tutorials and Zoom-recorded interactive lectures and tutorials through MyCourses/Zoom
- In person labs and pre-recorded lab videos on MyCourses.
- The instructional approach is based on student **attendance** and **active participation**.

© Instructor generated course materials (e.g. Lab manuals, handouts, notes, summaries, exam questions, etc.) are protected by law and **may NOT be copied or distributed in any form or in any medium without explicit permission of the instructor**. Note that infringements of copyright can be subject to follow up by the University under the Code of Student Conduct and Disciplinary Procedures (Article 18, https://www.mcgill.ca/secretariat/files/secretariat/code_of_student_conduct_and_disciplinary_procedures.pdf)

Online-Learning Etiquette

- Mute your microphone upon joining sessions. Changing your name is forbidden.
- Students' participation makes the course interesting for everyone. Students may use the chat to ask questions or raise their hand while having their camera on during Zoom sessions.
- Polite and respectful language must be used at all times. Disrespectful comments and/or disruptive behavior will not be tolerated (Article 5, https://www.mcgill.ca/secretariat/files/secretariat/code_of_student_conduct_and_disciplinary_procedures.pdf).

Evaluation Method: 8 Lab reports, 8 Pre-Lab Quizzes, Teaching Assistant Grade and Final Exam

- **All assessments must be written INDIVIDUALLY.** Lab reports, quizzes and the Final exam are not meant to be collaborative work. Answers will be vetted for cheating and/or plagiarism using a text-matching software. Any suspicious case will be submitted to the Faculty of Science Disciplinary Officer.
- **55% Lab reports (please refer to the Lab Manual for Lab Report writing, grading and weight of each lab report)**
Lab reports are due one week after scheduled finish of the experiment. Reports must be submitted online through MyCourses by 12:00 p.m. of registered lab day. A hard copy of the report must be submitted upon arrival to the lab.
- **5% In Lab Quizzes: 8 Pre-Lab Quizzes (Please note there is NO makeup or rewrites for missed quizzes.)**
Pre-Lab quizzes can be answered in 5 minutes or less and a hard copy is given to students at the beginning of each in person lab and are then collected by the Teaching assistants and graded. Pre-Lab quizzes will be answered and discussed by Teaching Assistants during the lab and are not given back to the students.
- **5% TA grade.**
This is the TAs' evaluation grade of the students' hands on performance in the lab. This grade is final and non-negotiable.
- **35% Final Exam**
The Final exam is designed to be answered in 3 hours or less. This is an in-person exam.

Language

Les étudiants peuvent soumettre en anglais ou en français tout travail écrit destiné à l'évaluation.

In accord with McGill University's Charter of Students' Rights, students have the right to submit in English or in French any written work that is to be graded (except in courses where knowledge of a language is one of the objectives of the course).

In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change.

Deferred Final and Supplemental

The Deferred Final (worth like the Final) and Supplemental (worth like the Final) are managed by Exam Center and are usually written during the March break. Students unable to attend the final exam must contact the Exam Center and follow the procedure stated here <https://www.mcgill.ca/exams/>. In some cases, a valid medical note may be required.

Grading:

*The department of Biochemistry will **NOT** revise/upgrade marks except on sound academic grounds*. Once computed, the marks in this course will **NOT** be altered/increased. The Final Course Grade will be "rounded of" as follows: if the final aggregate mark is computed to be 79.5%, the mark will be reported as 80% (an A-); a final aggregate mark of 79.4% will be reported as 79% (a B+). These marks are **FINAL and NON-NEGOTIABLE**.*

*** Reviewing Lab Reports**

In addition to the above-mentioned policy to NOT revise/upgrade marks, ***the Coordinator may impose a 1% penalty on any marking challenge that is not based on sound academic grounds.***

Examples: Should the re-read 1) Be in favor of the student, the student gets the disputed marks back.

2) NOT be in favor of the student, a 1% penalty can be imposed on the final grade.

Useful resources

• Student Rights and Responsibilities

<https://www.mcgill.ca/students/srr/academicrights>

McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures (see <http://www.mcgill.ca/students/srr/honest/> for more information).

• McGill Academic Calendar (add/drop, withdrawal and other deadlines)

<https://www.mcgill.ca/study/2021-2022/important-dates>

• Time management

<https://www.mcgill.ca/tutoring/channels/event/time-management-your-best-ally-323895>

<https://www.mcgill.ca/osd/student-resources/learningresources/time-management>

• Stress management

<https://www.mcgill.ca/osd/student-resources/learningresources/stress-management>

• Office for Students with Disabilities (OSD)

<https://www.mcgill.ca/osd/>

• Health and Wellness Resources at McGill

Student well-being is a priority for the University. All of our health and wellness resources have been integrated into a single Student Wellness Hub, your one-stop shop for everything related to your physical and mental health. If you need to access services or get more information, visit the Virtual Hub at www.mcgill.ca/wellness-hub or drop by the Brown Student Services Building (downtown) or Centennial Centre (Macdonald Campus). Within your faculty, you can also connect with your Local Wellness Advisor (to make an appointment, visit <https://mcgill.ca/lwa>).