

BIOC 312
BIOCHEMISTRY OF MACROMOLECULES
TIMETABLE - WINTER 2023

Lecturers:

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 Dr. Vicent Giguere, Room 710, McIntyre Medical Building, Tel: 398-5899, vincent.giguere@mcgill.ca
 Dr. Josée Dostie, Room 815A, McIntyre Medical Building, Tel: 398-4975, josee.dostie@mcgill.ca
 Dr. Stéphane Richard, Jewish General Hospital, 340-8222 ext. 4470, stephane.richard@mcgill.ca
 Dr. Nahum Sonenberg, Room 615, Goodman Cancer Center, 514-398-7274, nahum.sonenberg@mcgill.ca
 Dr. Jerry Pelletier, Room 810B, McIntyre Medical Sciences Building, 398-2323, jerry.pelletier@mcgill.ca
 Dr. Michel Tremblay, Room 617, Goodman Cancer Center, 514-398-7290, michel.tremblay@mcgill.ca

Teaching Assistants (TAs):

Michael Bellucci – michael.bellucci@mail.mcgill.ca
 Simon Roitman - simon.roitman@mail.mcgill.ca
 Caitlynn Mirabelli - caitlynn.mirabelli@mail.mcgill.ca

Time & location: Tuesdays (T) and Thursdays (TH)– 11:35am – 12:55pm; RPHYS 112 - Ernest Rutherford Physics Building, Room 112, 3600 Rue University

Prerequisites: BIOC 311, BIOL 200, and BIOC 212 or BIOL 201

Date	Day	Lecture Title	Lecture	Lecturer
Jan. 5	TH	Transcription in Prokaryotes: Part 1	1	V.G.
Jan. 10	T	Transcription in Prokaryotes: Part 2	2	V.G.
Jan. 12	TH	Transcription in Eukaryotes: Basic Concepts	3	V.G.
Jan. 17	T	Transcription: Techniques and Mechanisms	4	V.G.
Jan. 19	TH	Polymerase I: Control of rRNA Transcription	5	V.G.
Jan. 24	T	Polymerase III: Transcription of Small Stabe RNAs	6	V.G.
Jan. 26	TH	Polymerase II: Transcription of mRNAs and Long Non-Coding RNAs	7	V.G.
Jan. 31	T	Chromatin Structure and Gene Regulation	8	J.D.
Feb. 02	TH	DNA Methylation and Gene Regulation	9	J.D.
Feb. 07	T	Genomic Imprinting	10	J.D.
Feb. 09	TH	Transcription Elongation-Prokaryotes	11	S.R.
Feb. 14	T	No lecture, prepare for midterm MIDTERM EXAM 6:30PM-8:30PM; McIntyre RM 522 Lectures 1 to 10, inclusively		
Feb. 16	TH	Transcription Elongation-Prokaryotes	12	S.R.
Feb. 21	T	Post-Translational Regulation of Transcription Factors	13	S.R.
Feb. 23	TH	Splicing	14	N.S.
February 27th- March 3rd STUDY BREAK				
March 7	T	Translation Mechanisms	15	J.P.
March 09	TH	Control of Translation	16	J.P.
March 14	T	Control of Translation	17	J.P.
March 16	TH	Translation and Disease	18	J.P.
March 21	T	Protein Targeting	19	S.H.
March 23	TH	Protein Modifications – Glycosylation	20	S.H.
March 28	T	Protein Modifications – Phosphorylation	21	M.T.
March 30	TH	Protein Modifications – Phosphorylation	22	M.T.
April 04	T	Protein Degradation	23	S.H.
April 06	TH	Apoptosis – Regulation and Therapeutic Implications	24	S.H.
April 11	T	Apoptosis – Regulation and Therapeutic Implications	25	S.H.

Midterm Examination: Lectures 1 to 10 inclusively.

Final Examination: Lectures 11 to 25.

MARKING SYSTEM: Mid-term, 40%; Final Examination, 60%

***NOTE:** Students unable to write the Final must contact the Exam Center and register for a deferred Final.

MID-TERM EXAMINATION: Tuesday, February 14, 2023 in McIntyre RM 522

If you miss writing the midterm exam, you **MUST BRING** a doctor's note to the main office, room 905, McIntyre Medical Sciences Building within 1 WEEK of the exam date. Alternatively, a scanned copy of the doctor's note can be sent to zhannat.sakijanova@mcgill.ca. In this case, a make up midterm will be scheduled within this 2 week period. If a legitimate doctor's note is not provided, you will receive a zero on the midterm and the final exam will be worth **60%**.

Important notes

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 www.mcgill.ca/students/srr/honest/ for more information).

In accord with McGill University's Charter of **Students' Rights** <https://www.mcgill.ca/students/srr/academicrights>, 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.

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Suggested Readings

Lecturers take their material from reviews that are published in various scientific journals. These reviews will be posted on the MyCourses site. In addition, students can consult a number of textbooks.

Molecular Biology of the Cell, 6th edition, 2014. Bruce Alberts, Alexander Johnson, Julian Lewis, David Morgan, Martin Raff, Keith Roberts and Peter Walter. Publisher: W. W. Norton & Company; ISBN-13: 9781317563754

Molecular Cell Biology, 8th edition, 2016. Harvey Lodish; Arnold Berk; Chris A. Kaiser; Monty Krieger; Anthony Bretscher; Hidde Ploegh; Angelika Amon; Kelsey C. Martin; Publisher: W.H. Freeman & Company; ISBN-13:9781319117191

Fundamentals of Biochemistry, 5th edition, 2016. Donald Voet, Judith G Voet, Charlotte W Pratt; Publisher: Wiley. ISBN-13:9781118918456.

Questions Must Be Asked in Class

PDF files, PowerPoint presentations and video-recordings are available on the myCourses site. Students can also obtain notes from the Note Taking Club (NTC). In addition, three teaching assistants (TAs) will monitor discussions and answer questions on the myCourses site. We make every effort to make the system as flexible as possible. As a result, a smaller proportion of students attend the lectures nowadays. We respect that. In turn, students must understand that this system does not entitle individuals to request private meetings with lecturers at a later time, when they feel ready to study the material. Questions must be asked in class. Questions about old material are typically asked at the start of a lecture or immediately after the end of a lecture. If you do not come to class, you are expected to be 100% autonomous. In particular, professors will not return e-mails or phone calls asking them "What's on the exam?" This question is of general interest and should be asked in class.

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. Decimal points 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**.

Useful resources

McGill Academic Calendar (add/drop, withdrawal & other deadlines): <https://www.mcgill.ca/study/2020-2021/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>).