

BIOCHEMISTRY/ANATOMY 212
MOLECULAR MECHANISM OF CELL FUNCTION
TIMETABLE - WINTER 2024

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Location: McIntyre Medical Building, Room 522. **Mondays (M), Wednesdays (W) & Fridays (F)** from **10:35 am-11:25 am**

Prerequisite: BIOL 200 **Restrictions:** Not open to students who have taken or are taking BIOL 201

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Date	Day	Lecture Title	Lecture	Lecturer and TA
Jan. 05	F	Introduction to the course content	1	MVU
08	M	Thermodynamics and Equilibrium	2	MVU (EK) yy
10	W	Protein Folding in the Cell I	3	MVU (EK)yy
12	F	Protein Folding in the Cell II	4	MVU (EK)yy
15	M	Protein Folding in the Cell III	5	MVU (EK)yy
17	W	Protein Folding in the Cell IV	6	MVU (EK)yy
19	F	Membrane Proteins I	7	MVU (EK)yy
22	M	Membrane Proteins II	8	MVU (EK)yy
24	W	Membrane Proteins III	9	MVU (EK)yy
26	F	Membrane Proteins IV Quiz 1 (5% lectures 2 to 9)	10	MVU (EK)yy
29	M	Intracellular sorting I	11	MVU (EK)js
31	W	Intracellular sorting II	12	MVU (EK)js
Feb. 02	F	Intracellular sorting III	13	MVU (EK)js
05	M	Intracellular sorting IV	14	MVU (EK)js
07	W	Cell communication: Ligands and Receptors	15	AP (YY)ek
09	F	Cell Cycle I	16	AP (YY)ek
12	M	Cell Cycle II	17	AP (YY)ek
14	W	Cell Cycle III	18	AP (YY)ek
16	F	Cell Cycle IV	19	AP (YY)ek
19	M	Preparation for midterm Quiz 2 (5% lectures 10 to 19)	20	TAs
21	W	Cancer I	21	MF (YY)js
23	F	Cancer II	22	MF (YY)js
26	M	Cancer III	23	MF (YY)js
28	W	Cancer IV	24	MF (YY)js
28	T	MIDTERM EXAM (Lectures 2-19) 6:30 - 8:30 PM		Leacock 132
March 01	F	Cell-Interactions and Extracellular Matrix I	25	DR (JS) yy
		WINTER READING BREAK MARCH 4- MARCH 8		
11	M	Cell-Interactions and Extracellular Matrix II	26	DR (JS)yy
13	W	Cell-Interactions and Extracellular Matrix III	27	DR (JS)yy
15	F	Cell-Interactions and Extracellular Matrix IV	28	DR (JS)yy
18	M	Cell-Interactions and Extracellular Matrix V	29	DR (JS)yy
20	W	Organelle Functions and Metabolism I Quiz 3 (5%, lectures 21 to 29)	30	LK (YY)js
22	F	Organelle Functions and Metabolism II	31	LK (YY)js
25	M	Organelle Functions and Metabolism III	32	LK (YY)js
27	W	Organelle Functions and Metabolism IV	33	LK (YY)js
April 03	W	Model Organisms & development I	35	KC (JS) ek
05	F	Model Organisms & development II	36	KC (JS)ek
08	M	Model Organisms & development III	37	KC (JS)ek
10	W	Preparation for final Quiz 4 (5%, lectures 30 to 37)	38	Q&A
12	F	<i>No class – prepare for FINAL (Date TBD, Apr 15-30)</i>	39	TAs
24	W	FINAL EXAM Lectures 21 to 37 (inclusive) 9:00-12:00		

Midterm Examination: Lectures 2 to 19 (inclusive)

Final Examination: Lectures 21 to 37 (inclusive)

MARKING SYSTEM: Mid-term, 40%; Final Examination, 40%, Quiz 5% each (total 20%)

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Suggested Reading

- **Molecular Biology of the Cell; Bruce Alberts, Rebecca Heald, Alexander Johnson, David Morgan, Martin Raff, Keith Roberts, Peter Walter. Pub. Date: 2022 Publisher: Norton and Company.; Edition Number: 7**
- Molecular Cell Biology; Harvey Lodish, Paul Matsudaira, Arnold Berk, S. Lawrence Zipursky, Matthew P. Scott; ISBN: 0716743663; Format: Hardcover, 973pp; Pub. Date: 2016 Publisher: W. H. Freeman Company; Edition Number: 9
- Smart Biology _ Lecture1: From Atoms to Cells
- Professors will recommend additional readings. They will be indicated in the lecture content.

Course Description

Throughout this introductory course to the molecular mechanisms of cell functions, you will learn fundamental aspects of protein biochemistry and cell biology. Emphasis is made on proteins because they perform a diverse range of cellular functions and provide structure to the cell. Learning about proteins will help to understand the internal organization of cells in compartments and their communication, the communication of cells with other cells and the extracellular environment, the mitochondrial production of metabolic energy, and the regulation of cell division. These concepts will be used to introduce multicellular organism development and how the misregulation of molecular events can lead to disease, using cancer as an example.

Instructional Methods in this Course

- In-person lectures are recorded* and available on MyCourses.
 - * © Instructor generated course materials (e.g., 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.
- In-person review sessions (by Teaching Assistants).
- The instructional approach is based on student **attendance** and **participation**.
- **Post your questions on the discussion board** to help solve your classmates' doubts, and engage them, TAs, and Professors in the discussion about course subjects. Your post also allows us to identify concepts that are not clear and improve the course in the upcoming year.

Evaluation (1 Midterm 40%; 1 Final 40%; 4 Quizzes 20%)

40% Midterm

The midterm exam is designed to be answered in 3h - or less – and is administered **in-person**.

If you miss writing the midterm exam, you **MUST BRING** a medical note to the main office, room 905, McIntyre Medical Sciences Building within 1 WEEK of the exam date. In this case, a make-up midterm will be scheduled within 2 weeks from the midterm date. If a legitimate (please make a note: the note should provide a **VALID** medical condition) doctor's note is not provided, students will receive zero.

40% Final

The Final exam is designed to be answered in 3h - or less – and is administered **in person**.

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

20% Quizzes

Each quiz can be taken in 7 min. We are allocating 15 min to cover universal assessment. Quizzes will be taken **in class** on the indicated dates. Students are responsible for bringing their laptops on the day of the quiz. Quizzes are multiple-choice or True/False questions.

- *OSD students must register with the OSD office for accommodations (<https://www.mcgill.ca/osd/>).*
- *Unless otherwise indicated by the instructor, **all assessments must be written INDIVIDUALLY**. The Midterm and Final exams 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.*
- *In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change.*
- *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).*

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

- **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/importantdates/key-dates#Winter_2024

- **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/>

Deferred Final and Supplemental

The Deferred Final (worth like the Final) and Supplemental (worth 100% of the grade) are managed by Exam Center and are usually written during March break for Fall courses and in August for Winter courses. 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.