

BIOL 364/4 Section 01 – Cell Physiology, Winter 2022

In the event of extraordinary circumstances and pursuant to the Academic Regulations the University may modify the delivery, content, structure, forum, location and/or evaluation scheme. In the event of such extraordinary circumstances, students will be informed of the changes in the Announcements section of your Concordia portal.

Instructor: Dr. Amandeep K. Randhawa Glory

amandeep.glory@concordia.ca (Please put “BIOL364” in the title and your name and student ID in the main text.)

Office: SP-375.35 or SP-375.23 (Biology)

Office hours: by appointment

Lecture Time: Monday and Wednesday 10:15-11:30 a.m.

Lecture Location: SP S110

Teaching Assistant: Imge ozugergin

imge.ozugergin@gmail.com

Office hours: virtual, by appointment

Farhan Rehman (exam grading only)

Course Description:

This course covers general and specialized processes at the cellular level in eukaryotes and prokaryotes; protein folding and degradation, membrane transport processes, signaling by nerves, molecular motors, muscle contraction, cell motility, sensory perception, programmed cell death, cancer, viral bacterial pathogenesis and fundamental immunology. The course will study some classic experiments and selected examples of modern approaches to address cell physiology processes. Lectures only.

Topics: Advanced Protein Topics (Protein Folding, Chaperones, Protein Degradation, Phase Separation), Autophagy and Exosomes, Membrane Transport Processes (Transport of Water, Ion Transport, Membrane Potentials), Cellular Neurophysiology (Neuronal Signaling), Coupling of Chemical and Mechanical Energy (Molecular Motors, Muscle Contraction, Migration), Developmental Processes and Cancer (Stem Cell Division, Programmed Cell Death), RNAi and CRISPR, Pathogenesis and Immune Response

Objectives:

Students should acquire a comprehensive understanding of the topics listed above including fundamental concepts and their experimental foundations.

Course materials:

Reading lists and questions for the various topics will be posted on the course website to improve your understanding of the material. Power point slides from the lectures will be posted after the lecture. Lecture notes on Moodle may not contain all the information covered in the class. If you miss lectures, it is your responsibility to gather information from the course pack and/or from fellow students. The assigned readings are from research articles, review articles, and textbooks. The sources of these readings are:

1. The BIOL 364 Course Pack, which is available at the Loyola Campus Bookstore and has all or most readings (in black and white).

2. Vanier Library Reserves has many, but not all, readings as pdf files or hardcopy books.
3. Links, pdfs and a list of readings can be found on the Moodle site for the course for each lecture. Most are only available through a Concordia computer or the library e-journals webpage.

Options:

1. Purchase the Course Pack and obtain the color images from lecture slides or the articles (via the internet or library; see reading list).
2. Download most readings from the electronic reserves at the library website and check out the Neurophysiology books and Molecular Cell Biology at the Vanier Library (usually 3 hour reserve).

Marking scheme

Assessment type	Date	%
Online quizzes	Every week	20
Midterm exam (lectures 1-12; in person)	09-Mar	25
Final exam (cumulative, in person)	According to the examination office	55

Grading scale:

A⁺ = ≥90, A = 85-89, A⁻ = 80-84, B⁺ = 77-79, B = 74-76, B⁻ = 70-73
 C⁺ = 67-69, C = 64-66, C⁻ = 60-63, D⁺ = 57-59, D = 54-56, D⁻ = 50-53, F = <50

Moodle course management:

This course is intensively managed through the Moodle course web site. Please check Moodle regularly. Please make sure that the e-mail addresses in Moodle and My Concordia portal are up to date. Lecture notes and other relevant course materials will be posted to the Moodle course web site. Please contact IITS help@concordia.ca if you have technical issues accessing the Moodle course portal.

Classes:

The classes for the course will be in-person unless notified by the University or professor. An announcement will be made on Moodle in the event of a change.

Online quizzes:

Online quizzes are administered through the Moodle course web site. Multiple quizzes will be offered throughout the course (one per week on Moodle). These quizzes offer an easy 20% of the final grade. These quizzes are intended to provide deadlines for learning key material, to evaluate the progress, show example exam questions and provide a friendly incentive to learn the course material as it is covered. It is the student's responsibility to take the on-line quizzes on a computer with a stable internet connection and sufficient memory (for example: with all other programs closed). One quiz can be missed or failed at no penalty to allow for a computer glitch or any circumstance that prevents completion of the quiz before the deadline. **There will be no make-up quizzes under any circumstances.** Any issues related to online quizzes will be handled by TA. If the issue is not resolved, then instructor will make the final decision. Check the quiz schedule for opening and closing dates and time.

Quiz schedule:

Quiz #	Opens at 13:00 on	Closes at 13:00 on	Based on lectures
Quiz 1	14-Jan	20-Jan	1, 2
Quiz 2	21-Jan	27-Jan	3,4
Quiz 3	28-Jan	03-Feb	5,6
Quiz 4	04-Feb	10-Feb	7,8
Quiz 5	11-Feb	17-Feb	9,10
Quiz 6	18-Feb	24-Feb	11, 12
Quiz 7	25-Feb	10-Mar	13, 14
Quiz 8	17-Mar	23-Mar	15, 16
Quiz 9	24-Mar	30-Mar	17, 18
Quiz 10	31-Mar	04-Mar	19, 20
Quiz 11	05-Apr	06-Apr (23:00)	21, 22

Exams:

Exams will cover material presented in lectures, assigned readings and any other additional information covered by the instructor during the lectures. Questions will be multiple-choice, true/false and short answers. Bring pencils and erasers, since the multiple-choice questions will be answered on scantron sheets. The use of electronic devices of any kind is not allowed. **There will be no make-up exam for midterm.** If you miss a midterm exam for medical or other legitimate reason (consult undergraduate calendar), you must provide formal document in person to the instructor within one week from the midterm exam, otherwise you will receive a grade of "0". The document/s will be verified and if approved then the final exam will be weighted as 80% of the final grade.

The final exam will be cumulative. It will cover all course material, although the material after the midterm will be more heavily weighted (~75%). A deferred exam will be scheduled by Examination office. Due to the additional time for preparation of a deferred exam, the exam can be more challenging than the final exam at the end of the term.

Both midterm and final exams will be in-person and closed book. In the event of extraordinary circumstances beyond the university's control, if in-person exams are not possible, only then exams will be shifted to online exams on Cole and proctored. Students will not have an option to choose between in-person and online exams.

Behaviors

All individuals participating in courses are expected to be professional and constructive throughout the course, including in their communications. Concordia students are subject to the [Code of Rights and Responsibilities](#) which applies both when students are physically and virtually engaged in any University activity, including classes, seminars, meetings, etc. Students engaged in University activities must respect this Code when engaging with any members of the Concordia community, including faculty, staff, and students, whether such interactions are verbal or in writing, face to face or online/virtual. Failing to comply with the Code may result in charges and sanctions, as outlined in the Code.

Intellectual Property

Content belonging to instructors shared in online courses, including, but not limited to, online lectures, course notes, quizzes, exams and video recordings of classes remain the intellectual property of the faculty member. It may not be distributed, published or broadcast, in whole or in part, without the express permission of the faculty member. Students are also forbidden to use their own means of recording any elements of an online class or lecture without express permission of the instructor. Any unauthorized sharing of course content may constitute a breach of **the Academic Code of Conduct** and/or the **Code of Rights and Responsibilities**. As specified in the **Policy on Intellectual Property**, the University does not claim any ownership of or interest in any student IP. All university members retain copyright over their work.

Extraordinary circumstances

In the event of extraordinary circumstances and pursuant to the **Academic Regulations** the University may modify the delivery, content, structure, forum, location and/or evaluation scheme. In the event of such extraordinary circumstances, students will be informed of the changes

Important Notes:

This is a large class, but you are not a small part of it! To make our time together as valuable as possible, we both have to work hard at it. The following basic principles may give us some guidelines (Code of Rights and Responsibilities, Concordia University):

- Every student has the right to learn as well as the responsibility not to deprive others of their right to learn.
- Every student is accountable for his or her own actions.
- Please respect the focus of students and professor and join the zoom 5-10 min before the class.
- Disruption (e.g. talking, making loud or distracting noises) will not be tolerated in this class.
- Chat area should only be used for discussing the class materials. Students using disruptive, abusive or similar language (zoom bombing) will be removed from the area and will be reported to the Office of Rights and Responsibilities. Such students will be held liable for their actions.

Academic Integrity:

The following statements are taken from The Academic Integrity Website (<http://www.concordia.ca/students/academic-integrity.html>).

“Plagiarism:

The most common offense under the Academic Code of Conduct is plagiarism, which the Code defines as "the presentation of the work of another person as one's own or without proper acknowledgement."

This could be material copied word for word from books, journals, internet sites, professor's course notes, etc. It could be material that is paraphrased but closely resembles the original source. It could be the work of a fellow student, for example, an answer on a quiz, data for a lab report, a paper or assignment completed by another student. It might be a paper purchased through one of the many available sources. Plagiarism does not refer to words alone - it can also refer to copying images, graphs, tables, and ideas. "Presentation" is not limited to written work. It also includes oral presentations, computer assignments and artistic works. Finally, if you translate the work of another person into French or English and do not cite the source, this is also plagiarism.

In Simple Words:

DO NOT COPY, PARAPHRASE OR TRANSLATE ANYTHING FROM ANYWHERE WITHOUT SAYING FROM WHERE YOU OBTAINED IT!"

If you are not sure how to paraphrase without plagiarizing, please refer to this example given by the Academic Integrity information site: <http://www.concordia.ca/students/academic-integrity.html> .

Code of Rights and Responsibilities

<http://www.concordia.ca/content/dam/common/docs/policies/official-policies/BD-3.pdf>

It is not acceptable to do the following:

- Copy from ANYWHERE without saying from where it came.
- Omit quotation marks for direct quotations.
- Let another student copy your work and then submit it as his/her own.
- Hand in the same assignment in more than one class without permission.
- Have unauthorized material in an exam, such as cheat sheets, or crib notes.
YOU DON'T HAVE TO BE CAUGHT USING THEM - JUST HAVING THEM WILL GET YOU INTO TROUBLE!
- Copy from someone else's exam.
- Communicate with another student during an exam by talking or using some form of signals.
- Add or remove pages from an examination booklet or take the booklet out of an exam room.
- Get hold of or steal an exam or assignment answers or questions.
- Write a test or exam for someone else or have someone write it for you.
- Hand in false documents such as medical notes, transcript or record.
- Falsify data or research results.

List of Services:

Concordia Counselling and Development offers career services, psychological services, student learning services, etc.: <http://cdev.concordia.ca/> SGW GM-300 phone 514-848-2424 ext 3545, Loyola AD-103 phone 514-848-2424 ext 3555.

The Concordia Library Citation and Style Guides:

<http://library.concordia.ca/help/howto/citations.html> SGW 514-848-2424 ext 7706, Loyola 514-848-2424 ext 7770.

Advocacy and Support Services: <http://supportservices.concordia.ca/>

Student Transition Centre: <http://stc.concordia.ca/> FB-1250 Guy St., phone 514-848-2424 ext 2614.

New Student Program: <http://newstudent.concordia.ca/> SGW H-481 phone 514-848-2424 ext 7369, Loyola AD-101 phone 514-848-2424 ext 5901.

Access Centre for Students with Disabilities: <http://supportservices.concordia.ca/disabilities>
[SGW GM-300.00](http://www.concordia.ca/sgw/gm-300-00) phone 514-848-2424 ext 3525, Loyola AD-130 514-848-2424 ext 4562

Student Success Centre: <http://studentsuccess.concordia.ca/> H-440 phone 514-848-2424 ext 3921, Loyola AD-103

Academic Integrity: <http://provost.concordia.ca/academicintegrity/> AD-211-02 Phone: 514-848-2424 ext 2599

Financial Aid and Awards: <http://web2.concordia.ca/financialaid/> SGW GM-230.00 or Loyola Campus AD-121.02, phone 514-848-2424 ext 3507

Health Services: <http://www-health.concordia.ca/> SGW GM-200, phone 514-848-2424 ext 3565 or Loyola

AD-131 phone 514-848-2424 ext 3575

Campus Security 514-848-3717. On-campus from a university phone Ext 3717

Concordia's Sexual Assault Resource Centre (SARC) Coordinator - Jennifer (JD) Drummond
jennifer.drummond@concordia.ca, sarc@concordia.ca <https://www.concordia.ca/students/sexual-assault.html> Phone: 514-848-2424 ext 3353

Ombuds Office. The Ombuds Office's role is to assist in the informal resolution of concerns and complaints related to the application of university policies, rules and procedures.

<http://www.concordia.ca/offices/ombuds.html> Phone: 514-848-2424 ext 8658

Email: ombuds@concordia.ca

Tentative lecture schedule (subject to change):

Lecture #	Date/Day		Topic
1	10-Jan	Mon	Introduction
2	12-Jan	Wed	Protein folding
3	17-Jan	Mon	Protein folding
4	19-Jan	Wed	Protein degradation
5	24-Jan	Mon	Autophagy
6	26-Jan	Wed	Protein purification
7	31-Jan	Mon	Plasma membrane, membrane transport
8	02-Feb	Wed	Membrane transport
9	07-Feb	Mon	Membrane potential
10	09-Feb	Wed	Membrane potential
11	14-Feb	Mon	Action potential, Cellular neurobiology
12	16-Feb	Wed	Cellular neurobiology
13	21-Feb	Mon	Sensory system
14	23-Feb	Wed	Sensory system
	28-Feb	Mon	Mid-term break, no class
	02-Mar	Wed	Mid-term break, no class
15	07-Mar	Mon	Sensory system
	09-Mar	Wed	Midterm Exam
16	14-Mar	Mon	Cytoskeleton, Motor proteins
17	16-Mar	Wed	Motor proteins and muscles
18	21-Mar	Mon	Cytokinesis, Cell migration
19	23-Mar	Wed	Muscle contraction
20	28-Mar	Mon	Programmed cell death
21	30-Mar	Wed	Immunology
22	04-Apr	Mon	Immunology
23	06-Apr	Wed	Pathogens
24	11-Apr	Mon	Pathogens, Cancer
25	13-Apr	Wed	CRISPR and RNAi