BIOL 364 CELL PHYSIOLOGY Winter, 2020-2021

Please note that the following syllabus is subject to change.

General Rules

You are not permitted to post/share course or exam material to any unauthorized person or website. Anyone who is caught doing so will be charged with academic misconduct.

Appropriate online etiquette is expected. Everyone must remain muted unless asking a question or contributing to class discussion. It is preferable to have screens on, and especially when speaking you are expected to do this. Exceptions are permitted. All in-class lectures will be recorded and posted for asynchronous learning. Anyone who does not want to have their voice and/or image recorded must let me know ahead of time (via e-mail or private Zoom chat).

General Information

Professor: Dr. Alisa Piekny

E-mail: alisa.piekny@concordia.ca

Office hours: By appointment

Course Description

This course covers general and specialized processes at the cellular level in eukaryotes and prokaryotes; protein folding and degradation, autophagy, signaling by nerves, cell motility, muscle contraction, stem cells, programmed cell death, viral and bacterial pathogenesis and fundamental immunology. 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.

Schedule

Lectures: Held virtually by Zoom on Mondays and Wednesdays, 10:15-11:30 AM. The links will be posted on Moodle.

Lecture material will be posted on Moodle in advance of each scheduled lecture period. The material will be covered in lecture, which also will be used for discussions of the material and problem solving. In-class lectures including discussions will be posted online after the lecture.

Online quizzes will be held on Moodle weekly (see below).

The **Midterm Exam** will be held on Moodle on Monday, February 22nd instead of lecture.

The **Final Exam** will be held on Moodle and scheduled by the Exams Office, TBD.

Course Material

Reading lists and questions for the various topics will be posted on Moodle to improve your understanding of the material. These are meant to supplement the material presented in the powerpoint slides. You are expected to understand what is presented in lecture.

The assigned readings are from research articles, review articles, and textbooks. Multiple readings are provided to give different coverage of more complex topics. The sources of these readings are:

1. The BIOL 364 Course Pack, which is available to order through the 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. As indicated above, a list of readings and links will be posted to the Moodle site for each lecture. Some links may be accessible only when using a Concordia vpn or the library e-journals webpage.

Grading

Final grades will be determined from the highest cumulative score determined from the following weightings:

1. **Quizzes 10%, Midterm exam 40%, Final exam 50%**

OR

2. **Midterm exam 40%, Final exam 60%**

Quizzes: They will be offered throughout the course on Moodle starting January 18th. They are intended to allow students to evaluate their progress, show example exam questions, and provide an incentive to learn the course material as it is covered and not at "the last minute". For each quiz, a score of 50% or higher will give full credit. One quiz can be missed or failed at no penalty. Each week the quizzes will open at 5 pm on Monday and close on Friday at 5 pm. There will be no quiz Feb. 22nd – Feb. 26th because of the midterm, and Mar. 1st – Mar. 5th because of reading week. The last quiz will be held from April 5th – April 9th.

Midterm Exam: This exam to be held on Monday, February 22nd will cover the material presented in lectures until Wednesday, Feb. 17th, which are based on the assigned readings. Questions will be both multiple-choice and short answer-style. The exam will be held online through Moodle.

Final Exam: This exam will be scheduled by the Exam's Office during the regular exam period. It will cover all course material, although the material after the midterm will be more heavily weighted (~75%). As with the midterm, questions will be both multiple-choice and short answer-style. The exam will be held online through Moodle.

Please note that there are no make-up midterm exams or quizzes. As outlined above, there is a weighting option that does not include quizzes. If you miss the midterm exam, then a medical/official note is required and the weighting of the other components will be adjusted. If you miss the final exam, then you will need to apply for a deferral through the Exam's Office as per the usual procedure.

7. Rights and Responsibilities – Plagiarism: The most common offense under the Academic Code of Conduct is plagiarism, which the Code defines as "the presentation 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!

(Source: The Academic Integrity Website:
http://provost.concordia.ca/academicintegrity/plagiarism/)