BIOL 330
Cell Biology

Fall Term (2013-14)

CALENDAR DESCRIPTION

An introduction to the cellular basis of biological variation. The course explores the control of cell function exerted by the nucleus, the pathways for building and fuelling cells, and the control of integrative cellular events.

PREREQUISITE a grade of C- in BIOL 205/3.0.

SCHEDULE

Lectures: Monday 8:30-9:30, Tuesday 10:30-11:30, Thursday 9:30-10:30. Humphrey Aud.

Instructor	**Dr. S. Regan**
Instructor Contact	sharon.regan@queensu.ca Phone: 613-533-3153
Office Hours	Mondays 1:30 - 2:30, Tuesdays 1:30 – 2:30, Thursdays 10:30 – 11:30
TA:	Michal Pyc
TA Contact Information	8mp5@queensu.ca
Office Hours	By appointment, please email

Learning Objectives

This course covers the cellular processes that determine when and where a protein will be produced in the cell, as well as cellular energetic, cell division, cell death and morphogenesis. There is also a strong component on the techniques used in a molecular biology lab to understand these cellular processes.

1. Understand the molecular mechanisms at work that replicate DNA, transcribe RNA and translate protein.
2. Understand how the cell regulates the above-mentioned processes so that the quantity and quality of the proteins in various compartments of the cell.
3. How modern molecular biology techniques allow us to analyze cellular processes

Learning Hours

Teaching method		*Average hours per week*	*Number of weeks*	*Total hours*
In-class hours	Lecture	3	12	36
	Seminar			
	Laboratory			
	Tutorial			
	Practicum			
	Group learning			

	Individual instruction			
Other	Online activity	3	12	36
	Off-campus activity			
	Private study	4	12	48
Total hours on task				120

Course Outline

DNA structure
DNA replication, repair and recombination.
How cells read the genome: from DNA to protein.
Techniques used to understand the function of DNA, RNA and proteins.
Intracellular compartmental and protein sorting
Energy Conversion: Mitochondria and Chloroplasts.
Mechanisms of Cell Communication.
Cytoskeleton.
Cell Junctions and the Extracellular Matrix.
The Cell Cycle.
Cell differentiation.
Cell death.

Textbooks/Readings

Textbook: Molecular Biology of the Cell by Alberts et al 5th Edition. Please see moodle page for specific pages.

Grading Scheme

Component	**Weight (%)**	**Date**
Online quizzes	2%	September 9-11
	2%	September 23-25
	2%	October 7-9
	2%	November 4-6
	2%	November 11-13
Assignment	3%	September 19
	3%	October 3
	3%	October 24
	3%	October 31
Peer review of essay	3%	November 18-22
Essay	5%	November 28
Midterm	20%	October 17
Final exam	50%	

Grading Method

All components of this course will receive numerical percentage marks. The final grade you receive for the course will be derived by converting your numerical course average to a letter grade according to Queen's Official Grade Conversion Scale.

When letter grades are employed, the following scale will be employed for purposes of calculating your course average:

Arts & Science Letter Grade Input Scheme

Assignment mark	Numerical value for calculation of final mark
A+	93
A	87
A-	82
B+	78
B	75
B-	72
C+	68
C	65
C-	62
D+	58
D	55
D-	52
F48 (F+)	48
F24 (F)	24
F0 (0)	0

Your course average will then be converted to a final letter grade according to Queen's Official Grade Conversion Scale:

Queen's Official Grade Conversion Scale

Grade	Numerical Course Average (Range)
A+	90-100
A	85-89
A-	80-84
B+	77-79
B	73-76
B-	70-72
C+	67-69
C	63-66
C-	60-62
D+	57-59
D	53-56
D-	50-52
F	49 and below

Academic Integrity and Queen's Code of Conduct

Students are responsible for familiarizing themselves with the regulations concerning academic integrity and for ensuring that their assignments and conduct conform to the principles of academic integrity. Information is available in the Arts and Science Calendar (see Academic Regulation 1 - http://www.queensu.ca/artsci/academic-calendars/regulations/academic-regulations, on the Arts and Science website (see http://www.queensu.ca/artsci/academics/undergraduate/academic-integrity), and at Biology's website (http://www.queensu.ca/biology/undergrad/integrity.html) and from the instructor of this course. Departures from academic integrity include plagiarism, use of unauthorized materials, facilitation, forgery and falsification, and are antithetical to the development of an academic community at Queen's. Given the seriousness of these matters, actions which contravene the regulations on academic integrity carry sanctions that can range from a warning or the loss of grades on an assignment to the failure of a course to a requirement to withdraw from the university.

Accommodation Policy, Exam Conflicts, and Other Conflicts

Students who feel they need accommodations for disabilities or extenuating circumstances, or have a conflict between exams or other commitments should consult the Biology Department's website for details about how to proceed (http://www.queensu.ca/biology/undergrad/integrity.html). In general, the earlier a course coordinator is apprised of an extenuating circumstance, the more likely an accommodation can be made. Students are encouraged to be proactive in anticipating difficulties, when it is possible to do so.

Students may apply to write a make-up or deferred exam if they have an exam conflict as defined in the Academic Regulations of the Faculty (See Arts and Science Calendar Regulation 8 - http://www.queensu.ca/artsci/academic-calendars/regulations/academic-regulations). In this case, the student should report to the Exams Office first to verify that there is a genuine exam conflict. Biology professors will not consider your situation to be a conflict unless it meets the criteria set out by the Faculty of Arts and Sciences.

Students may request a make-up or deferred exam if they have an exam conflict with off-campus travel associated with a field course (e.g BIOL-307/3.0 or 407/3.0) that is held during the fall or winter terms.

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Accommodation of Disabilities

Queen's University is committed to achieving full accessibility for persons with disabilities. Part of this commitment includes arranging academic accommodations for students with disabilities to ensure they have an equitable opportunity to participate in all of their academic activities. If you are a student with a disability and think you may need accommodations, you are strongly encouraged to contact the Disability Services Office (DSO) and register as early as possible. For more information, including important deadlines, please visit the DSO website at: http://www.queensu.ca/hcds/ds/