

# BIOL 431

## Cellular Basis of Adaptation

Winter Term (2016-17)

### CALENDAR DESCRIPTION

The cellular origins of diversity in physiological processes, with consideration of the role of evolutionary, developmental and molecular mechanisms.

PREREQUISITE BIOL 330/3.0 and (BIOL 301/3.0 or BIOL 334/3.0 or BIOL 339/3.0 or BIOL 341/3.0 or BIOL 338/3.0).

### SCHEDULE

Lectures: Monday 8:30-11:30pm. BIOSC 2111.

Seminar: Wed 10:30-11:30. Humphrey 223

<b>Instructor</b>	Dr. P. Young
<b>Instructor Contact</b>	<a href="mailto:Paul.Young@queensu.ca">Paul.Young@queensu.ca</a> phone: 613-533-6148
<b>Office Hours</b>	By appointment or drop by

### Learning Objectives

The goal of Biology 431 is to integrate everything you have learned in other courses in your undergrad to understand how organisms adapt to change. Specifically we will integrate your expertise in biochemistry, cell biology, physiology, evolution, ecology, and behaviour to understand how microbes, plants and animals adapt to stresses such as drought, high light, hypoxia, infection, and even death. The course is presented in a workshop style where we focus on communication of science in the form of group seminars, individual seminars, essays and class participation.

### Learning Hours

<i>Teaching method</i>		<i>Average hours per week</i>	<i>Number of weeks</i>	<i>Total hours</i>
In-class hours	Lecture	3	2	6
	Seminar	3	10	30
	Laboratory			
	Tutorial	1	8	8
	Practicum			
	Group learning	1	4	4
	Individual instruction			
Other	Online activity			
	Off-campus activity			
	Private study	5	12	60
<b>Total hours on task</b>				<b>108</b>

**Course Outline**

1. How to give a good seminar and how to ask good questions during a seminar
2. Group seminars on 4 major stresses that microbes, plants and animals may encounter
3. Individual seminars on the organism and stress of your choice
4. Essay on the organism and stress of your choice, pitched to a general audience

**Textbooks/Readings**

None

**Grading Scheme**

Component	Weight (%)	Date
Group seminars	20	September 18, 25, October 2, 9
Individual Seminar	30	unknown
Participation	5	
Essay	45	November 28

**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
FO (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/>*