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# BIOL 501

## Current Topics in Molecular Biology

Fall 2024

### CALENDAR DESCRIPTION

Current research in molecular biology includes gene regulation, gene editing, cell proliferation/cancer biology and developmental changes.. Through analysis of scientific manuscripts the class will discuss the scientific method and focus on current techniques that are used in molecular genetics. Specific topics could include molecular applications to plant, insect and mammalian/human systems.

**PREREQUISITES** BIOL 205\*

**EXCLUSION** PATH 425\*

### SCHEDULE

**Lectures:**

**Tutorial sessions: To be arranged with the students**

<b>Instructor</b>	
<b>Instructor Contact</b>	
<b>Office Hours</b>	Appointments via email/zoom

### Learning Objectives

The goals of Biology 501 are to allow students to develop confidence and sufficient breadth of knowledge to read , understand and discuss topics and techniques in the area of molecular biology. This is achieved through students choosing, presenting (seminar format) and discussing current manuscripts in depth. The entire class is responsible for reading all chosen manuscripts and participating in discussion. A book will also be assigned at the beginning of term for a written critique and oral discussion/debate. Group learning will involve developing questions to topical molecular subjects chosen by the instructor. To develop creativity and writing skills an essay in the format of the Natural Sciences and Engineering Research Council of Canada (NSERC) will be due at the end of the term. Fellow students will act as peer reviewers of their classmates.

### Learning Hours

<i>Teaching method</i>		<i>Average hours per week</i>	<i>Number of weeks</i>	<i>Total hours</i>
In-class	Lecture	4	2	8
	Seminar	3	10	30
	Laboratory			
	Tutorial			
	Practicum			

Other	Group learning	1	10	10
	Individual instruction			
	Online activity			
	Off-campus activity			
	Private study	4.8	13	63
Total hours on task				111

### **Course Outline**

Lectures and tutorial topics[groups] are listed below:

Week	1) Course overview
	2) Paper Discussion: Do model organisms serve as valid tools to examine human diseases.
	3) Student seminars begin 3 -4 per week until end of term
	4) Topic discussion
	5) Book review due
	6) Week before final class NSERC grants due for peer review

### **Suggested Grading Scheme**

Component	Weight (%)	Date
Participation	15%	Throughout (Sept-Dec)
Seminar 1	10%	As scheduled
Book review essay	10%	As scheduled
Seminar 2	15%	As scheduled
Research LOI	5%	After reading week
Book review essay	10%	
Research proposal	30%	3 <sup>rd</sup> week of Nov
Referee Exercise	5%	First week of December

### **Grading Method**

- In this course, some components will be graded using numerical percentage marks. Other components will receive letter grades, which for purposes of calculating your course average will be translated into numerical equivalents using the Faculty of Arts and Science Letter Grade Input Scheme.

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

### **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>).

Students may request a make-up or deferred exam if they have an exam conflict.

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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/>*