



**College of Biological Science
Molecular and Cellular Biology**

COURSE OUTLINE

MCB*6310: Advanced Topics in Molecular and Cellular Biology [0.5]

Fall 2016

Course description

Taking the theme of post-transcriptional gene regulation as its focus, this course provides an examination of the mechanisms that underlie organismal development and pathogenesis. The molecular and cellular biology of RNA localization, translational control, and RNA turnover will be emphasized.

Instructors:

Dr. Andrew Bendall (Coordinator)	SCI 3459	abendall@uoguelph.ca
Dr. Jim Uniacke	SCI 2244	juniacke@uoguelph.ca
Dr. John Vessey	SCI 3455	jvessey@uoguelph.ca

Course format: The course will consist of a series of **lectures** (presented by faculty) and research paper **presentations** (presented by students). Each faculty member will assign research papers that complement their lecture topic. Each student is required to read all of the assigned research papers. The class will be divided into groups of two and two papers will be discussed per week. Papers will be assigned on a rolling basis, 2 weeks before each presentation. Each student is expected to participate in each of the student presentations by **submitting (to the relevant instructor) 2 questions for every paper they are not presenting by noon of the day before class**. Consideration will be given to the quality of the questions and to each student's participation in class discussions when assigning a final participation mark. The format of the student presentations will be a description and critique of each of the papers followed by a class discussion; see guidelines for preparation of presentations on Courselink. Finally, each student will be assigned a paper (not one of the ones they presented) and prepare a **research proposal** for a follow-up study. Again, guidelines for these proposals are available on Courselink.

Course schedule

Lectures: Tuesday 1:00 pm – 4:00 pm

MCKN 230

Learning outcomes

By the end of this course, students should be able to:

1. Apply an advanced understanding of the major post-transcriptional regulatory mechanisms that impact gene expression and function
2. Evaluate different kinds of experimental evidence
3. Critically assess the methodology of modern molecular and cellular biology
4. Describe and justify suitable experimental controls
5. Define a research question and propose the next experimental steps

Course Resources

Primary research articles for in-class presentations

Citations will be provided ahead of time. It will be each student's responsibility to locate these articles using library or other online resources.

Tentative Schedule

Week	Date	Lecture Topic
	Sept. 9	Course introduction (Note this meeting will be immediately after the MCB6500/7500 meeting) Approx. 12:45 pm SSC 1511
1	Sept. 13	RNA localization – Vessey
2	Sept. 20	Student presentations
3	Sept. 27	Student presentations
4	Oct. 4	Student presentations
5	Oct. 11	RNA-mediated control of gene expression – Bendall
6	Oct. 18	Student presentations
7	Oct. 25	Student presentations
8	Nov. 1	Student presentations
9	Nov. 8	Regulation of translation – Uniacke
10	Nov. 15	Student presentations
11	Nov. 22	Student presentations
12	Nov. 29	Student presentations

Methods of Assessment

Assessment	% of final grade	Date	Course activity	Learning outcomes assessed
Class presentations	2x 25%	schedule to be provided	Presentations	1-4
Class participation	10%		Presentations	1-4
Written proposal	40%		First assigned paper	1-5

Important Dates

Sept. 9 (Fri)
Sept. 13 (Tues)
Oct. 18 (Tues)
Nov. 1 (Tues)
Nov. 29 (Tues)

Course introduction
First class
Proposal draft due in class
Proposals returned with comments
Proposals due (in last class)

Course and University Policies

When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor in writing, with your name, id#, and e-mail contact, and be prepared to provide supporting documentation. See the undergraduate calendar for information on regulations and procedures for Academic Consideration:

<http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>

The nature of the consideration will depend on the specific circumstances but a likely outcome would be to have the final exam reweighted to include the value of the missed assessment.

Accessibility

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact the Centre for Students with Disabilities (soon to be renamed Student Accessibility Services) as soon as possible.

For more information, contact CSD at 519-824-4120 ext. 56208 or email csd@uoguelph.ca or see the website: <http://www.csd.uoguelph.ca/csd/>

Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community – faculty, staff, and students – to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar:

<http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>

E-mail Communication

As per university regulations, all students are required to check their <mail.uoguelph.ca> e-mail account regularly: e-mail is the official route of communication between the University and its students. Course instructors are not obliged to answer course-related emails from students that do not originate from official university student email accounts.

Drop Date

The last date to drop one-semester courses this fall, without academic penalty, is November 4, 2016 (the 40th class day). For regulations and procedures for Dropping Courses, see the Undergraduate Calendar:

<http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml>

Copies of out-of-class assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

Recording of Materials

Presentations which are made in relation to course work—including lectures—cannot be recorded or copied without the permission of the presenter, whether the instructor, a classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

Grading

Missed lecture or laboratory material as a result of absence is your responsibility. Grades will be assigned according to the standards outlined in the University of Guelph Undergraduate Calendar.

Campus Resources

The Academic Calendar is the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs:

<http://www.uoguelph.ca/registrar/calendars/index.cfm?index>

If you are concerned about any aspect of your academic program:

make an appointment with a program counsellor in your degree program.

<http://www.bsc.uoguelph.ca/index.shtml> or <https://www.uoguelph.ca/uaic/programcounsellors>

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If you are struggling to succeed academically:

There are numerous academic resources offered by the Learning Commons including, Supported Learning Groups for a variety of courses, workshops related to time management, taking multiple choice exams, and general study skills. You can also set up individualized appointments with a learning specialist. <http://www.learningcommons.uoguelph.ca/>

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If you are struggling with personal or health issues:

Counselling services offers individualized appointments to help students work through personal struggles that may be impacting their academic performance.

<https://www.uoguelph.ca/counselling/>

Student Health Services is located on campus and is available to provide medical attention.

<https://www.uoguelph.ca/studenthealthservices/clinic>

For support related to stress and anxiety, besides Health Services and Counselling Services, Kathy Somers runs training workshops and one-on-one sessions related to stress management and high performance situations. <http://www.uoguelph.ca/~ksomers/>

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If you have a documented disability or think you may have a disability:

The Centre for Students with Disabilities (CSD) can provide services and support for students with a documented learning or physical disability. They can also provide information about how to be tested for a learning disability. For more information, including how to register with the centre please see: <https://www.uoguelph.ca/csd/>