



BIOM*6800 Gene Expression in Health and Disease

Winter 2022

Section(s): 01

Department of Biomedical Sciences

Credit Weight: 0.50

Version 1.00 - December 14, 2021

1 Course Details

1.1 Calendar Description

This course presents the molecular concepts of gene expression and the functional consequences of abnormal expression in pathological conditions. The conceptual, methodological and applied aspects of gene expression will be illustrated through student and faculty seminars, written reports, group discussions, and debates.

Restrictions: Restricted to Biomedical Sciences students.

1.2 Course Description

Students will critically review published papers through presentations and in-class discussions. Topics will highlight methodologies that are employed to understand gene function in health and disease, and will include those used to (a) assess levels of gene expression, (b) investigate mechanisms of gene regulation and (c) manipulate gene expression to understand function.

1.3 Timetable

Timetable is subject to change. Please see WebAdvisor for the latest information.

1.4 Final Exam

2 Instructional Support

2.1 Instructional Support Team

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Course Co-ordinator: Giannina Descalzi Ph.D.
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3 Learning Resources

3.1 Additional Resources

Molecular Biology of the Cell, 6th edition, (Ed. Alberts, Bruce) New York: Garland Science, 2015 (Textbook)
 McLaughlin Library, QH581.2 .M64 2015

4 Learning Outcomes

5 Teaching and Learning Activities

5.1 Lecture

Tue, Jan 11

Topics:

Introduction Lecture

January 11, 9-10:20 a.m.,

All efforts will be made to be in person, however given the COVID situation, we may go to a synchronous class via Zoom. Updates and links will be posted on CourseLink.

Wed, Jan 13

Topics:

Dr. Giannina Descalzi

All efforts will be made to be in person, however given the COVID situation, we may go to a synchronous class

via Zoom. Updates and links will be posted on CourseLink.

Tue, Jan 18

Topics: TBD

Thu, Jan 20 - Thu, Mar 31

Topics: Tuesday and Thursdays, 9AM -10:20AM.

Student Presentations and Class Discussion: topics TBD on a sign up basis on CourseLink. Please check on CourseLink for guest faculty and paper selection. Two student presentations (one hour) per class, based upon current research papers in selected areas. Original papers will be used for student presentations and discussion. Active participation in discussions will be an absolute requirement. For each presentation, two students discussants in addition to the presenter will be assigned to review the paper and asked to come to class with prepared questions.

All efforts will be made to be in person, however given the COVID situation, we may go to a synchronous class via Zoom. Updates and links will be posted on CourseLink.

Tue, Apr 5

Topics: **Debate: Ethical issues concerning gene expression**

All efforts will be made to be in person, however given the COVID situation, we may go to a synchronous class via Zoom. Updates and links will be posted on CourseLink.

Thu, Apr 7

Topics: **Debate: Ethical issues concerning gene expression**

All efforts will be made to be in person, however given the COVID situation, we may go to a synchronous class via Zoom. Updates and links will be posted on CourseLink.

6 Assessments

6.1 Assessment Details

Written Report (20%)

Due: Tue, Mar 22, 8:00 PM

The written report will be a 2-page mini-review and critique on an assigned paper. Students will be expected to incorporate knowledge gained during the class. It is **due by 8PM on March 22nd, 2022**; submitted through DropBox on CourseLink

N.B. report paper must be approved by the course coordinator.

Oral Presentation (40%)

Students will present 2 critical evaluations of original papers selected by guest faculty that are experts in that field. Student presentation dates, guest faculty, and papers available for presenting will be indicated on CourseLink, and can be booked on a first-come-first-served basis.

Each presentation will be worth 20% of the final grade.

Each class will include two presentations based on one paper:

First presentation will present the paper in a ~ 40-minute presentation, to include the background, methods, and results. This presentation will introduce the class to the topic, state of knowledge, and methods. It may include a brief mention of the author's conclusions

Second presentation will present the strengths and weaknesses of the paper in a ~ 20-minute presentation, to include a critical evaluation of the paper's strengths and weaknesses; including are the authors' conclusions supported by their data?

Each student will take a turn presenting the paper, and the strengths and weaknesses, for a total of 2 presentations for the semester.

Debate (20%)

Debate on a controversial issue related to gene expression (done as a group effort). The debate is presented in the last two lecture periods.

Student Participation (20%)

In order for this class to be a success, student participation is a must.

Students will be assessed based on their contributions to group discussions and preparation of questions for student presentations.

For every class, two students will be pre-selected to come to class prepared with 2 questions for the student presenters.

7 Course Statements

7.1 Course Evaluation

Students will be asked to complete a questionnaire on instructors' teaching competence during the last two weeks of classes. This is part of information required by the University to evaluate faculty performance for purposes of Tenure, Promotion and Selective Increases. Administered by a third party rather than the instructors, these evaluations will be delivered to the respective instructors ONLY after the final grades have been submitted to the Registrar's Office. Note: only the numerical ratings from the form will be made available to the Chair for administrative purposes – the Chair will NOT see any comments that are written on the evaluation forms unless signed by the student.

8 University Statements

8.1 Email Communication

As per university regulations, all students are required to check their e-mail account regularly: e-mail is the official route of communication between the University and its students.

8.2 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 (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. The grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Academic Consideration and Appeals

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

Graduate Calendar - Grounds for Academic Consideration

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

Associate Diploma Calendar - Academic Consideration, Appeals and Petitions

<https://www.uoguelph.ca/registrar/calendars/diploma/current/index.shtml>

8.3 Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The

deadline to drop two-semester courses will be the last day of classes in the second semester. This applies to all students (undergraduate, graduate and diploma) except for Doctor of Veterinary Medicine and Associate Diploma in Veterinary Technology (conventional and alternative delivery) students. The regulations and procedures for course registration are available in their respective Academic Calendars.

Undergraduate Calendar - Dropping Courses

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

Graduate Calendar - Registration Changes

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/genreg-reg-regchg.shtml>

Associate Diploma Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/diploma/current/c08/c08-drop.shtml>

8.4 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.

8.5 Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required; however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to make a booking at least 14 days in advance, and no later than November 1 (fall), March 1 (winter) or July 1 (summer). Similarly, new or changed accommodations for online quizzes, tests and exams must be approved at least a week ahead of time.

For Guelph students, information can be found on the SAS website

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

For Ridgetown students, information can be found on the Ridgetown SAS website

<https://www.ridgetownc.com/services/accessibilityservices.cfm>

8.6 Academic Integrity

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 encourages academic integrity. 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.

Undergraduate Calendar - Academic Misconduct

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

Graduate Calendar - Academic Misconduct

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

8.7 Recording of Materials

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

8.8 Resources

The Academic Calendars are the source of information about the University of Guelph's procedures, policies, and regulations that apply to undergraduate, graduate, and diploma programs.

Academic Calendars

<https://www.uoguelph.ca/academics/calendars>

8.9 Disclaimer

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings, changes in classroom protocols, and academic schedules. Any such changes will be announced via CourseLink and/or class email.

This includes on-campus scheduling during the semester, mid-terms and final examination schedules. All University-wide decisions will be posted on the COVID-19 website (<https://news.uoguelph.ca/2019-novel-coronavirus-information/>) and circulated by email.

8.10 Illness

Medical notes will not normally be required for singular instances of academic consideration, although students may be required to provide supporting documentation for multiple missed assessments or when involving a large part of a course (e.g.. final exam or major assignment).

8.11 Covid-19 Safety Protocols

For information on current safety protocols, follow these links:

- <https://news.uoguelph.ca/return-to-campusess/how-u-of-g-is-preparing-for-your-safe-return/>
- <https://news.uoguelph.ca/return-to-campusess/spaces/#ClassroomSpaces>

Please note, these guidelines may be updated as required in response to evolving University, Public Health or government directives.
