



BIOM*6570 Biochemical Regulation of Physiological Processes

Winter 2021

Section(s): C01

Department of Biomedical Sciences Credit

Weight: 0.50

Version 3.00 Jan 10, 2021

1 Course Details

1.1 Calendar Description

This course focuses on the endocrine regulation of vertebrate physiological processes, by hormones and other biological regulators that act through cellular receptors and intracellular biochemical-control pathways. It is a graduate extension of the Biomedical Sciences B.Sc., course in Endocrine Physiology (BIOM*4030). The overall learning objective is for graduate students to learn about current areas of major research interest, involving the actions of the endocrine system.

Pre-Requisite(s): None. BIOM*3200 and Endocrine Physiology BIOM*4030, or equivalent courses, are advised but not required.

1.2 Timetable

Synchronous Zoom presentations and discussions
Tues, Thurs 11:30AM - 12:50PM

1.3 Final Exam

There is no final exam – student evaluation will be by in class presentation and discussion of current literature in Endocrinology, as well as by a major term literature review paper.

2 Instructional Support

2.1 Instructor(s)

Neil MacLusky

Email: nmaclusk@uoguelph.ca

Telephone: 1-519-824-4120 x54073

Office: OVC 1668

Office Hours: Zoom or Teams appointments, 2-5pm Tuesday afternoons

3 Learning Resources

3.1 Recommended Resource(s)

University of Guelph Writing Assistance Resources (Website) <http://www.lib.uoguelph.ca/get-assistance/writing/book-appointments>

Understanding Plagiarism and Academic Integrity (Website) <http://www.academicintegrity.uoguelph.ca/>

What is Plagiarism? (Website) <http://www.academicintegrity.uoguelph.ca/plagiarism>

Annotated Bibliographies (Website) <http://www.lib.uoguelph.ca/get-assistance/writing/specific-types-papers/writing-annotated-bibliography>

Booth V. *Communicating in science: writing a scientific paper and speaking at scientific meetings*. Cambridge England; New York: Cambridge University Press, 1993. (Other)

Day RA. *Scientific English: a guide for scientists and other professionals*. Phoenix, AZ: Oryx Press, 1992. (Other)

Day RA, netLibrary I. *How to write & publish a scientific paper*. Phoenix, Az: Oryx Press, 1998. (Other)

Gilpin AA, Patchet-Golubev P. *A guide to writing in the sciences*. Toronto: University of Toronto Press, 2000. (Other)

4 Learning Outcomes

Rationale for the course:

The aims of the course are twofold: first, to allow in depth exploration of current research topics in Endocrinology and Metabolism; and second, to provide the opportunity in a small class setting for students to develop their presentation and writing skills, which are extremely important in terms of students' future career development.

The subject matter for the course is flexible because, in a small graduate course, the interests and the backgrounds of the students vary from year to year. In the Introductory session for the course, we will discuss potential topics for presentation and discussion (a suggested list is presented at the end of this course outline). Students are encouraged to suggest topics that they find particularly interesting for inclusion in the course – the only proviso being that they must be within the field of Endocrinology and Metabolism.

4.1 Course Learning Outcomes

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

- (1) Present a clear, brief (20 minutes or less) critical review of a paper from the current Endocrinology and Metabolism literature, discuss the paper's findings with the instructor and other students in the class, as well as summarize the key elements of the paper in point form in a one-page (double sided) handout. This form of communication is commonly used in journal clubs and research discussion groups, as part of graduate

programs in universities and research institutes. Being able to present research work in a concise, informative manner is a fundamental skill that will be of advantage to students whatever they do in their future careers.

- (2) Develop a short review paper on a current topic in Endocrinology and Metabolism, to the standards currently expected for publication in the scientific literature. It is NOT expected that this paper will actually be published (although some students in BIOM*6570 have in the past been able to publish their reviews). The required learning outcome is that every student understands what is required to prepare a short review article on the current literature to the standards required for publication, then be able to complete such a paper on a topic of their choice for submission by the end of the semester. This assignment will be of benefit to students in the preparation of the literature review sections of their final reports/graduate degree theses, as well as in any future activity that requires scientific writing.
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5 Teaching and Learning Activities

This is a lecture- AND discussion-based course, with some independent and some group learning components. Students are expected to participate in discussions and to conduct themselves in a scholarly and respectful manner at all times.

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6 Assessments

Each week, students will be asked to present papers selected from the area under discussion for that week (which will be posted in advance to the Courselink BIOM*6570 website). As part of the preparation for these presentations, the presenting student should prepare a one-page (double sided) summary of the major points of the paper and his/her critique. That outline should be submitted by e-mail to the coordinator at least a day ahead of the presentation, so that it can be circulated to all other students in the class. All students should read the papers and come to class prepared: the students presenting the papers will be leading the discussion, but they should not be expected to cover everything by themselves. Graduate courses work best when they represent shared, group learning experiences. Active discussion of the topics presented will be in everyone's interests.

All students will also be expected to submit a review paper on a subject of their choice, at the end of the semester, the only limitation being that it must be within the field of Endocrinology and Metabolism. This paper should follow the structure and guidelines of short published reviews in a current Endocrinology journal (such as Trends in Endocrinology and Metabolism). Examples of such articles can be found on line. Students can also access the Trends in Endocrinology and Metabolism web site and follow their author instructions, in terms of page and reference limits. Additional information on how to construct this review paper is available on the Courselink BIOM*6570 site.

Students should put together draft outlines of their reviews early in the course and get feedback from the coordinator, at least one month before the deadline for final submission of the reviews. Every Tuesday afternoon in the semester has been set aside for student Office Hours, to allow students to come and get advice and ask questions. That is an ideal time to get feedback and discuss potential review topics. Topics that are too broad or too narrow make it difficult or impossible to write a good review paper, so getting advice early on in the process is the key to success.

6.1 Assessment Details

Each student will be scheduled to present papers by Zoom twice during the course, each presentation and summary being graded by the coordinator (maximum 20%). The final review paper (worth 60% of the course grade, 10% for the draft outline, 50% for the paper) must be handed in within one week of the end of the course, to allow grading in time for submission to the registrar's office before the end of the exam period.

7 Course Statements

7.2 Course Evaluation

Students will be asked to complete a questionnaire on the instructors teaching abilities. This information is required by the university to evaluate faculty performance for purposes of Tenure, Promotion and Annual Pay Increases. Administered by a third party rather than the instructor, these evaluations will be delivered to the instructors only after the final grades have been submitted to the Registrar's Office. The numerical ratings from the form will be made available to the Chair for administrative purposes. If a student wishes the Chair to see his/her written comments in addition to the scores, he/she must include with those comments his/her name (written legibly) and signature.

8 University Statements

8.1 Email Communication

As per university regulations, all students are required to check their e-mail account regularly: email 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 regulations and procedures for [Academic Consideration](#) are detailed in the Undergraduate Calendar.

8.3 Drop Date

Courses that are one semester long must be dropped by the end of semester. The regulations and procedures for [Dropping Courses](#) are available in the Undergraduate Calendar.

8.4 Copies of Out-of-class Assignments

Keep 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 book their exams at least 7 days in advance, and not later than the 40th Class Day.

More information: www.uoguelph.ca/sas

8.6 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.

8.7 Recording of Materials

Presentations 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.

This semester, because of the ongoing risks associated with the COVID-19 pandemic, all classes will be online. If the class is in agreement, recordings of both the lectures and the in-class presentations will be made and links to the presentations made available via CourseLink, for the benefit of students.

8.8 Resources

The [Academic Calendars](#) are the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs.

Subject topic list, Winter semester 2021

Trans-generational Transmission of Stress, inter-generational transmission of disease

Endocrine disruptors

Neuroimmunology/Neuroinflammation and neurological disease

Inflammation, oxidative stress and neurodegenerative disease.

Diabetes: new developments, etiology, new and improved treatments

Oral contraceptives (both male and female)

Hormone replacement therapy and cardiovascular disease.

Current developments in Cancer Immunotherapy

Thyroid function and dysfunction