

**BIOM\*6160 CELLULAR BIOLOGY Winter 2017 0.5 Credits**

Objective: This is an interdisciplinary course in which cellular and subcellular components will be studied, with an emphasis on the interdisciplinary nature of cell biology. Aspects of intracellular and intercellular function especially relevant to health and disease of vertebrates will be presented through lectures, seminars and group discussions. Students participating in this course will be expected to provide in depth analysis of a selected group of topics, both assigned and chosen.

Instructors: Dr. Brenda Coomber, Biomedical Sciences (Course Coordinator)  
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Classes: This course will meet on Mondays and Wednesdays 1:00-3:00 in OVC room 3648

Method of presentation: Material will be presented through a series of lectures, discussions, assignments, and student presentations.

Student assessment:

Scientific Article Presentations & Critique (three; 15 % each)	45%
Term Paper (including outline and annotated bibliography)	45%
General Participation (including journal clubs and peer evaluation)	10%

## BIOM\*6160 Draft Class Schedule

<u>Date</u>	<u>Topic</u>
Jan. 16	Introduction
Jan. 18	Cell proliferation & DNA damage
Jan. 23	Cell proliferation & DNA damage: Journal Club (BC)
Jan. 25	Cell Signaling
Jan. 30	Cell Signaling: Journal Club (RM)
<b>Feb. 1</b>	<b>no class</b>
Feb. 6	Student Presentations #1: Proliferation, DNA Damage & Cell Signaling
Feb. 8	Cytoskeleton
<b>Feb. 13</b>	<b>no class</b>
Feb. 15	Cytoskeleton: Journal Club (BC)
Feb. 27	Membrane Trafficking
March 1	Membrane Trafficking: Journal Club (RM)
<b>March 6</b>	<b>no class</b>
March 8	Student Presentations #2: Cytoskeleton & Membrane Trafficking
March 13	Cell death; <b>one-page outline and annotated bibliography for term paper due</b>
March 15	Cell death: Journal club (BC)
March 20	Extracellular matrix & cell adhesion
<b>March 22</b>	<b>no class</b>
March 27	Extracellular matrix & cell adhesion: Journal Club (BC)
<b>March 29</b>	<b>no class</b>
<b>April 3</b>	<b>no class</b>
April 5	Student Presentations #3: Cell Death, Matrix & Adhesion
<b>April 13</b>	<b>Term papers due!!! (pdf format) 5:00 pm</b>

### **Important Information**

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

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 coordinator in writing, with your name, id#, and e-mail contact. Due to the course design, we will likely be able to accommodate a missed presentation date, but for Academic Consideration regarding the final term paper, please see the graduate calendar for information on regulations and procedures: [https://www.uoguelph.ca/registrar/calendars/graduate/2015-2016/genreg/sec\\_d0e2412.shtml](https://www.uoguelph.ca/registrar/calendars/graduate/2015-2016/genreg/sec_d0e2412.shtml)

Drop Date: The last date to drop this course, without academic penalty, is **Friday March 11.**

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. The Academic Misconduct Policy is detailed in the Graduate Calendar:  
[https://www.uoguelph.ca/registrar/calendars/graduate/2015-2016/genreg/sec\\_d0e2716.shtml](https://www.uoguelph.ca/registrar/calendars/graduate/2015-2016/genreg/sec_d0e2716.shtml)

Recording of Materials: Presentations which are made in relation to course work—including lectures—cannot be recorded in any electronic media without the permission of the presenter, whether the instructor, a classmate or guest lecturer.

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. The Academic Accommodation Policy is detailed in the Graduate Calendar:  
[https://www.uoguelph.ca/registrar/calendars/graduate/2015-2016/genreg/sec\\_d0e2573.shtml](https://www.uoguelph.ca/registrar/calendars/graduate/2015-2016/genreg/sec_d0e2573.shtml)

Turnitin Originality Checker Software: This course will be using *Turnitin*, integrated with the D2L Dropbox tool, to detect possible plagiarism, unauthorized collaboration or copying as part of the ongoing efforts to maintain academic integrity at the University of Guelph. All submitted assignments will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of the Turnitin.com service is subject to the Usage Policy posted on the Turnitin.com site.

A major benefit of using *Turnitin* is that students will be able to educate and empower themselves in preventing academic misconduct. In this course, you may screen your term paper through *Turnitin* as many times as you wish before the due date, by submitting your document to the 'draft' folder for this assignment. You will be able to see and print reports that show you exactly where you have properly and improperly referenced the outside sources in your assignment. It is important to note that detecting plagiarism is a judgment call and it is critical that students be able to interpret the originality reports appropriately; if you have questions please contact the course instructors. The use of this tool as you prepare your term paper is optional but highly recommended. Please note that whether or not you use *Turnitin* to ensure your final document meets content originality requirements, this plagiarism detection tool WILL be used during the grading of your work.

Dropbox: This course uses the Dropbox function of D2L for assignment submission. A folder for each assignment (the three presentations and the term paper) has been created in the Dropbox for the course; *note that these folders have deadlines after which your assignment is considered LATE and marks may be deducted.* The term paper also has a 'draft' folder- this draft folder employs the plagiarism checking software *Turnitin* (see above) as a learning tool to help you ensure that your

writing meets the originality requirements of ethical scientific behaviour. The draft folder for the term paper 'closes' for any new submissions 1 hr before the assignment due date.

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

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

For this course, it is not appropriate to use commercial essay writing/editing services. Software to detect plagiarism will be employed. Students are encouraged to have a peer proof-read their final written assignments for editorial input prior to submission; however, student assignments are to be individual, not group, efforts. For the purposes of this course, a peer is another graduate student or senior undergraduate student.

## Details of Assignments

A) Scientific Article Presentations (three different sessions; 15% each): The objective of these assignments is to familiarize the student with the skills needed to communicate scientifically, improve analytical and critical thinking, and provide opportunities for students to explore in more depth elements of the topics of particular relevance or interest to them. These assignments also contain an element of peer evaluation, so students will also provide feedback on other presentations. Students will choose a recent (2015 -2017) **primary research article** on the assigned topic, and present the material as if at a scientific conference or meeting (i.e. that actual data in the work should be a major focus of the presentation). In the 10-minute presentation time, students must explain both what was done and why it is important. This will require some background reading beyond the text of the article. The amount of additional reading will depend on the student's previous knowledge in the subject, and on the topic chosen.

Students will also prepare a short written scientific critique of each chosen article using a template provided. Students must have their articles approved by the course coordinator and provide an electronic copy of the approved article prior to their session. There are three such sessions during the course; students are expected to attend all sessions, and assist with the evaluation of their peer's presentations. Students must present three different papers, one in each session. Powerpoint presentations and Critiques must be uploaded to the appropriate Dropbox folder at least 1 hour before the relevant presentation session begins.

B) Term Paper (45%): The major assignment for the course will be to write a critical review paper. This assignment will allow the students to demonstrate their mastery of a focused area of cell biology, as well as their skill at written scientific communication. Students will choose from a provided list of possible topics. *The chosen topic may not be on their current area of thesis research, or on a subject for which a previous graduate or 4th year undergraduate course assignment has been done; the coordinator will approve all topic choices.* Students will submit a one-page outline of their review, which should state the major themes to be explored, and give a skeleton outline of the planned review paper itself. Students will also submit a brief annotated bibliography describing 10 key primary references for the topic in question, and a two to three sentence description of the major advances each article provided to the field- do not include review papers or monographs in this list! This list of references should follow acceptable

citations formats (e.g. PubMed) and they must be **complete** (all authors, full title, etc.). This material (one page outline and annotated bibliography of 10 key primary references) must be submitted to the Dropbox assignment folder as a *pdf* on or before March 13 by 5:00 pm (note there is no 'draft' submission folder for this abstract and bibliography). The instructors will then provide students with specific feedback to be taken into account for the final written product. This final review article should be approximately 15 double spaced pages long, not including title page, figures and tables or references. Font size should be 12 pt with 1-inch margins; Times New Roman is the recommended font. The report as a *pdf* must be submitted to the Dropbox final assignment folder on or before the due date (April 13 by 5:00 pm).

Evaluation Criteria for Term Paper:

**Organization:** subheadings, appropriate sections, pages numbered, figures and tables consecutively numbered, suitably detailed figure and table legends

**Conciseness and clarity:** focus should be on assigned topic, showing critical evaluation, not just a review of broad subject, or a list of scientific findings

**Thoroughness:** scope of topic to be covered must be clearly identified; critical assessment of scientific literature required; include both a sense of historical development of knowledge, and an up to date discussion of current state of the art in the field; include discussion of conflicting data or controversies, and where appropriate speculation and discussion of future directions/unanswered questions. The majority of source material for this must consist of primary research articles, rather than reviews or monographs. *Note: you are expected to address the content of multiple research articles for this assignment; you are not limited to those 10 you reported on in your annotated bibliography*

**Language:** must have correct sentence structure and grammar; correct word usage; correct spelling

**Figures and Tables:** must be neat, clear and legible, either directly imported or re-drawn; source must be acknowledged; must be relevant to and addressed within the report text

**References:** must be in an acceptable style of citation (see above), and they must be complete (all authors, full title, etc.)

*A grading rubric is available in the course administration folder; students are encouraged to consult this as they prepare their report.*

C) General Participation (10%): There will be many opportunities for students to participate in the course during discussions of the various presentations, to demonstrate their understanding of the issues by asking questions, and to participate in peer review and group discussions of research articles (journal clubs). Students are also expected to attend all sessions. *Students are responsible for notifying the course coordinator (by e-mail or telephone message) as far in advance as possible of any absences.*