



BIOM*6310 Advanced Cancer Biology

Fall 2022

Section(s): C01

Department of Biomedical Sciences

Credit Weight: 0.50

Version 1.00 - August 22, 2022

1 Course Details

1.1 Calendar Description

This course explores advanced topics in cancer biology including cancer etiology, detection and screening and therapeutic strategies. Students will also critically evaluate the scientific literature as well as cancer related articles disseminated to the general public.

Restrictions: Instructor consent required.

1.2 Course Description

Course Description

This graduate level course is designed to provide students with an in-depth understanding of various aspects of cancer biology including causes of cancer, cancer screening, cancer therapy and molecular mechanisms. The course is a seminar-based course with seminars in basic aspects of cancer biology and a written critical review of a published manuscript. In addition, students will identify a news article or magazine article on cancer biology and critically evaluate the scientific accuracy of the article.

Course Coordinator

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Course Objectives

General Objectives: The course will be designed to build off the basic principles of cancer biology provided by BIOM4150 and provide a more in-depth understanding of cancer biology. The course will also be designed such that students will critically evaluate manuscripts and publicly available articles related to cancer.

Specific Objectives:

- understand the factors implicated in causing cancer
- appreciate cancer screening procedures and the impact that screening has had on cancer survival
- learn about traditional and emerging cancer therapies
- critically evaluate current cancer literature in a variety of fields
- appreciate the accuracy of cancer-related information disseminated to the general public

1.3 Timetable

Please see the CourseLink site for the Timetable. Classes are typically Tuesdays and Thursdays from 12:30-2:00pm

1.4 Final Exam

There is no final exam. Please see the Assessments sections for how students will be evaluated in the course.

2 Instructional Support

3 Learning Resources

4 Learning Outcomes

5 Teaching and Learning Activities

6 Assessments

6.1 Marking Schemes & Distributions

Evaluation

Presentations.....45% (each presentation will be worth 15% and 3 presentations will be given)

Manuscript Critical Evaluation.....15%

Class Participation.....10%

Final Written Report.....30%

Presentations: It is anticipated that each student will give 3 presentations (12min each; 5min for discussion/questions) in this course.

- a. Cancer Risk Factors: Students will be assigned a cancer risk factor and should summarize the current state of the literature regarding this risk factor. As this is an advanced cancer biology course, students should include information on how this risk factor is known/thought to promote cell transformation (ie mechanisms

of action). These presentations should **NOT** discuss therapies or detection methods. For some risk factors, students may need to focus their presentation on a particular cancer type as some risk factors affect multiple cell types and organ systems. Students are encouraged to include some primary research in their presentation.

- a. Cancer Detection or Therapeutic Strategy: Students will be assigned a method for detecting cancer or a therapeutic strategy for the treatment of cancer and should summarize the current state of the literature regarding their assigned detection method or therapeutic strategy. Students should also comment on the strengths and weaknesses of a detection method or therapeutic strategy and discuss any emerging areas of research for their topic. Students are encouraged to include some primary research in their presentation where appropriate.

- a. Cancer Related News Article: Students will identify a recent cancer-related newspaper or magazine article and have their article approved by the course coordinator. Students will then generate a presentation about this news article that includes some background information as well as a critical evaluation of the accuracy of the article based on published literature (ie are comments made in the article accurate or exaggerated).

All presentations must also be submitted to the course coordinator prior to the presentation (either pdf or PowerPoint). Part of the exercise is to ensure your presentation falls within the allotted time (12 minutes) and presentations that are too short or too long will be penalized.

Manuscript Critical Evaluation: The manuscript for critical evaluation will be identified by the student and must be submitted to the course coordinator for approval. The manuscript must be related to cancer and recently published (within last 2 years). This manuscript can be related to your research project however, the manuscript cannot be from your lab group. The manuscript critical evaluation should provide a brief background, a summary of the results presented in the paper, a critical evaluation of the experimental approaches, results and discussion (strengths and weaknesses) and alternative/additional experiments that would improve the manuscript. There will be a class discussing how to critically evaluate a

manuscript to provide you with some ideas on how to approach this assignment. This report should be no longer than 4 single-spaced pages, with 1-inch margins and a minimum of 12-point font. References are not included in this 4-page limit and should include all authors, full title of the manuscript and journal information.

Final Written Report: The final written report will be based on the cancer-related newspaper/magazine article that you presented to the class. Feedback will be provided for the presentation and should be incorporated into the final report. This final report should provide some background information, a critical evaluation of the article's accuracy based on published manuscripts, an estimation of how long it will be before the research has a clinical impact, and a revised publication written by the student. A reference list is also required and figures and tables are permitted but not required. The final written report will be a maximum of 10 double-spaced pages (not including references, Figures and Tables) using 12-point font and 1-inch margins. The student's revised publication should be a maximum of 2 pages (these 2 pages are included in the 10-page limit). For this revised publication, you are writing the article as the author and the article should be written at a level that can be understood by a general audience (ie someone with a high school education). Thus, you should try to avoid technical terms that the general public would not be familiar with. Marks will be deducted from any report that does not follow these restrictions.

Class Participation: As this is a graduate level course it is anticipated that students will actively participate in discussions regarding the material presented in this course. Students are expected to attend all sessions and should inform the course coordinator of any absences as far in advance as possible.

THE MANUSCRIPTS SELECTED OR TOPICS PRESENTED MUST NOT HAVE BEEN USED PREVIOUSLY IN ANOTHER COURSE. IF THE PRESENTATION TOPICS OR MANUSCRIPTS WERE USED IN A PREVIOUS, THE STUDENT WILL RECEIVE A MARK OF 0% FOR THAT PARTICULAR COURSE COMPONENT.

7 University Statements

7.1 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.

7.2 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>

7.3 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>

7.4 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.

7.5 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>

7.6 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>

7.7 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.

7.8 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>

7.9 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.

7.10 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).

7.11 Covid-19 Safety Protocols

For information on current safety protocols, follow these links:

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

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