

**BIOM\*6702-Advanced Cancer Biology Course Outline**  
**Fall 2016 0.5 Credits**

**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 critical reviews of published manuscripts. 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**

Roger Moorehead  
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**Classes**

Tuesday and Thursday 12:30-2:30pm in OVC rm3648 (most classes will likely last ~90 minutes)

**Prerequisite Courses**

BIOM4150 or similar course in cancer biology or approval by the course coordinator

**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 publically 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

**Evaluation**

Presentations.....60%  
Class Participation.....10%  
Final Written Report.....30%

**Presentations:** It is anticipated that each student will give 4 presentations (13-15min each; 5min for discussion/questions) in this course. Two presentations will be literature reviews of cancer related topics and one of the presentations will involve a critical review of a cancer-related manuscript. The final presentation will be related to a newspaper/magazine article on a cancer-related topic. Students are responsible for identifying a manuscript suitable for critical review and a cancer-related newspaper/magazine article. These manuscripts must be approved by the course coordinator and a pdf version or hard copy of the manuscript must be submitted to the course coordinator prior to the presentation. All presentations must also be submitted to the course coordinator prior to the presentation. The manuscript for critical review must be submitted to the course coordinator for approval by **Oct 13**. The critical manuscript review 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. **THE MANUSCRIPTS SELECTED OR PRESENTATION 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 PRESENTATION IN THIS COURSE.**

For the newspaper/magazine article, students are expected to identify their own newspaper/magazine article related to cancer. The article must be submitted to the course coordinator by **Oct 27** for approval.

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

**Final Written Report:** The final written report will be based on the newspaper/magazine article and will provide background information, a critical evaluation of the article's accuracy based on published manuscripts, the student's impression of the accuracy of the publication, 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). Marks will be deducted from any report that does not follow these restrictions.

**Schedule (subject to change based on the number of students)**

<b>Date</b>	<b>Topic</b>
Sept 15	Course Introduction - <i>Moorehead</i>
Sept 20	<b>No Class</b>
Sept 22	Causes of Cancer - <i>Student Presentations</i>
Sept 27	Causes of Cancer - <i>Student Presentations</i>
Sept 29	Causes of Cancer - <i>Student Presentations</i>
Oct 4	<b>No Class</b>
Oct 6	Review on Causes of Cancer - <i>Moorehead</i>
Oct 11	<b>No Class – Fall Study Break</b>
Oct 13	Cancer Detection/Screening - <i>Student Presentations</i> * <b>manuscript submitted for approval</b>
Oct 18	Cancer Detection/Screening and Cancer Therapies - <i>Student Presentations</i>
Oct 20	Cancer Therapies – <i>Student Presentations</i>
Oct 25	Review on Cancer Screening and Therapies - <i>Moorehead</i>
Oct 27	How to critically review a manuscript - <i>Moorehead</i> * <b>cancer related magazine/newspaper article submitted for approval</b>
Nov 1	Critical Manuscript Review - <i>Student Presentations</i>
Nov 3	Critical Manuscript Review – <i>Student Presentations</i>
Nov 8	Critical Manuscript Review – <i>Student Presentations</i>
Nov 10	Cancer-Related Article – <i>Student Presentations</i>
Nov 15	Cancer-Related Article – <i>Student Presentations</i>
Nov 17	Cancer-Related Article – <i>Student Presentations</i>
Nov 22	<b>No Class</b>
Nov 24	<b>No Class</b>
Nov 29	<b>No Class</b>
Dec 1	<b>FINAL REPORT DUE BY 5pm (ELECTRONIC COPY – PDF or Word)</b>

### *Topics for Causes of Cancer*

- Alcohol consumption
- Tobacco
- Environmental pollution
- Ionizing radiation
- Occupational exposure
- Reproductive factors and hormones
- Chronic infection
- Diet and nutrition
- Genetic susceptibility
- Ultraviolet radiation
- Tumor viruses
- Immunosuppression

### *Topics for Cancer Detection/Screening*

- Breast Cancer Detection/Screening
- Cervical Cancer Detection/Screening
- Colorectal Cancer Detection/Screening
- Prostate Cancer Detection/Screening
- Ovarian Cancer Detection/Screening
- Lung Cancer Screening Detection/Screening

### *Topics for Traditional and Experimental Therapies*

- Endocrine therapy
- Chemotherapy
- Radiation therapy
- Vaccines/immune stimulation
- Gene therapy/molecular targeted therapies
- Anti-angiogenic therapies

## 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 Graduate Calendar:

[http://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/sec\\_d0e1609.shtml](http://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/sec_d0e1609.shtml)

## Student Resources

Students are encouraged to take advantage of appropriate research and writing workshops and drop-in help available through the University of Guelph Learning Commons:

[www.learningcommons.uoguelph.ca](http://www.learningcommons.uoguelph.ca)

However, for this course, it is **not** appropriate to use commercial essay writing/editing services. Software to detect plagiarism may 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.