

SC/BIOL 4010 3.0 - Biology of Cancer
Faculty of Science and Engineering, Department of Biology
York University, Fall Term 2012

Time: Thursday 2:30 - 5:30 pm

Location: Life Sciences Building, Room 106

Lecturer: Dr. Samuel Benchimol
Department of Biology
Farquharson Building, Room 243A
416 736-2100 Ext. 20726
benchimo@yorku.ca

Prerequisites: SC/BIOL 3110 3.0 or SC/BCHM 3110 3.0
Molecular Biology I (Nucleic Acid Metabolism)

SC/BIOL 3130 3.0 or SC/BCHM 3130 3.0
Molecular Biology II (Regulation of Gene Expression)

Communication:

You may contact me by e-mail at: benchimo@yorku.ca

Please include "BIOL 4010" in the subject line and your full name and student number in your e-mail text. If you wish to have an appointment with me, please contact me by e-mail first.

Course Description:

This course will explore the molecular and cellular mechanisms that underlie the development and progression of cancer. We will examine the genetic basis of cancer and learn fundamental concepts that are common to all forms of human cancer. We will consider how an understanding of cancer informs treatment and prevention strategies. The course will expose students to modern cancer biology and the primary cancer research literature. Teaching slides will be posted **after** each lecture on WebCT. Slides are meant to enhance the lectures, not replace them.

Topics to be covered in the course include:

The nature of cancer
Retroviruses and DNA tumour viruses
Oncogenes
Growth factors, receptors and signalling pathways
Tumour suppressor genes
Cell cycle regulation
Apoptosis
Cellular survival pathways
Limitless replicative potential
Infection and Cancer
Cancer Treatment

Course Text/Readings:

Required readings including review articles and primary research articles will be assigned during the course. Required readings will be posted on WebCT.

1. Hanahan D. and Weinberg R.A. (2011) Hallmarks of Cancer: The Next Generation. *Cell* **144**, 646-674.

There is no required textbook for this course. The following two textbooks contain useful and pertinent information that can assist students by deepening their understanding of the lectures. Both textbooks have been placed on reserve in the Steacie Science Library. The Weinberg book is also available in the bookstore.

The Biology of Cancer, by Robert A. Weinberg (2007; Garland Science)
RC 268.4 W45 2007

Molecular Biology of the Cell, 5th edition (2008; Garland Science)
B. Alberts, A. Johnson, J. Lewis, M. Raff, K. Roberts, P. Walter
QH 581.2 M64 2008

Important Dates:

- Last date to ENROL without permission of the course instructor is Sept 19, 2012
- Last date to ENROL with permission of the course instructor is Oct 2, 2012
- Last date to DROP the course without receiving a grade is Nov 9, 2012

Accommodations:

Students who feel that there are extenuating circumstances that may interfere with their ability to successfully complete the course requirements are encouraged to discuss the matter with the Course Director **as soon as possible**.

Students with disabilities who require reasonable academic accommodation in teaching style or evaluation methods should consult with the Office for Persons with Disabilities (OPD) and ensure that requests for appropriate accommodations are arranged with the Course Director early in the term. Please refer to York University's policy on Academic Accommodation for Students with Disabilities at the following link:

<http://www.yorku.ca/secretariat/policies>

Evaluation:

The final grade for the course will be based on the following items weighted as indicated:

Mid-term test 1 (October 4)	25%
Mid-term test 2 (November 8)	25%
Final exam (cumulative)	50%

The Final Examination will take place during the scheduled examination period following the end of the term. The date and location will be determined by the Registrar's office. For the exam, students are required to know and understand the material presented in the lectures and in the required readings.

Missed Test or Exam:

Students with a documented reason for missing a course test (illness, compassionate grounds), which is confirmed by supporting documentation (e.g., doctor's letter) may request accommodation from the Course Instructor.

Appropriate documentation must be submitted to the Course Instructor as soon as possible. There will **NOT** be an opportunity to make up a missed mid-term test. After acceptable justification for a missed test has been received, the percentage value of the missed mid-term test will be added to the final exam (which will be worth 75% of the final grade).

If the final exam is missed, the student must petition the Registrar for deferred standing (permission to write a deferred exam).

Cheating and Plagiarism:

Cheating and plagiarism are major academic offences and carry serious penalties, ranging from a failing grade on the work in question to expulsion from the university. For more details about cheating, please refer to York University's policy on Academic Honesty at the following link:

<http://www.yorku.ca/secretariat/policies>