SC/BIOL 4010 3.0 - Biology of Cancer
Faculty of Science, Department of Biology
York University, Fall Term 2013

Time: Thursday 2:30 – 5:30 pm

Location: Life Sciences Building, Room 106

Lecturer: Dr. Keith Wheaton
Department of Biology
Farquharson Building, Room 243
416 736-2100 Ext. 20893
kwheaton@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:
I would appreciate that any questions related to course material be posted in the moodle forums, so that everyone has access to the answers. Please only contact me by e-mail: kwheaton@yorku.ca for other course related issues.

Office Hours:
Tues 2-4 PM and Fri 2-4 PM. Note if I am not in my office (Farq 243), please try and find me in the lab (Farq 224). If you wish to make an alternative 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. The course will expose students to modern cancer biology and the primary cancer research literature. Teaching slides will be posted before each lecture on moodle. I will use lecture capture to record each lecture.
Topics to be covered in the course include:

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Corresponding Hallmark of Cancer</th>
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<tr>
<td>1) The nature of cancer</td>
<td>Deregulating cellular energetics</td>
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<td>2) Tumour Viruses and Oncogenes</td>
<td>Sustaining proliferative signalling</td>
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<td>3) Cellular Oncogenes</td>
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<td>4) Growth factors, Receptors and Signalling</td>
<td>Insensitivity to anti-growth signals</td>
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<td>5) Tumour suppressor genes &amp; Cell cycle regulation</td>
<td>Evading apoptosis</td>
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<td>6) Apoptosis &amp; Cellular survival pathways</td>
<td>Limitless replicative potential</td>
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<td>7) Limitless replicative potential</td>
<td>Genomic instability and mutation</td>
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<td>8) Multistep Tumorigenesis and Genomic Integrity</td>
<td>Sustained angiogenesis</td>
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<td>9) Angiogenesis</td>
<td>Tissue invasion and metastasis</td>
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<td>10) Invasion and metastasis</td>
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Course Text/Readings:
The required textbook for this course contains useful and pertinent information that can assist students by deepening their understanding of the lectures. The textbook is available in the bookstore.


Readings including review articles and primary research articles will be posted on Moodle. These act as a supplementary source for understanding the hallmarks of cancer and some of the specific studies covered in the course.


Important Dates:

- Last date to ENROL without permission of the course instructor is Sept 22, 2013
- Last date to ENROL with permission of the course instructor is Oct 4, 2013
- Last date to DROP the course without receiving a grade is Nov 8, 2013

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 10th) 30%
- Written Assignment (October 25th) 10%
- Mid-term test 2 (November 14th) 30%
- Final exam (TBA) 30%

I tried to design the course with sequential course material which builds upon previous lectures. Thus, by the nature of the material each exam will require cumulative knowledge from previous sections of the course. For the exams, 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, etc.), 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 only be a **limited** time and opportunity to make up for a missed mid-term test. If all opportunities are missed and a acceptable justification for a missed test has been received, I will **reluctantly** add the percentage value of the missed mid-term test to the final exam (which will be worth 60% of the final grade). I highly recommend you make the effort to take both midterms. Please Note: ignorance of this course outline and its dates is not a legitimate excuse.

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:


Additional resources are available at:

[http://www.yorku.ca/academicintegrity/students/index.htm](http://www.yorku.ca/academicintegrity/students/index.htm)