

Cancer Biology

BIOL-4230-WA

Instructor: Dr. Ingeborg Zehbe, Research Chair, Biology Department

Graduate Assistant: Mehran Masoom, MSc Candidate

Contact: Please contact Mehran Masoom (mlmassoom@lakeheadu.ca) for questions and inquiries.

Time & Location: Mondays & Wednesdays: between 1:00 am and 2:30pm (AT 2005)

Textbook: *The Biology of Cancer – Second Edition*. Robert A. Weinberg. (2013)

Optional: *The Emperor of All Maladies: A Biography of Cancer*. Siddhartha Mukherjee. (2011)

Course Overview

The purpose of this course is to provide an introduction to the diverse field of cancer biology. This course possesses a clinical & research focus, but will also highlight additional concepts crucial for the students' understanding. Emphasis will be placed on engaging discussion and advancing topics in clinical cancer research.

Lecture Structure

During the semester, lectures will be structured as formal lectures, preparatory seminars, lab tours, guest lectures, and group discussions.

Mark Breakdown

Participation/Quizzes	10%
Mid-term exam	25%
Assignments (2)	30% (2 x 15%)
Final exam	35%

Participation

This is an interactive class where participation is highly encouraged. Participation will be graded based on in-class student involvement. This includes participating in class discussions, answering and asking questions, and quizzes that will be administered throughout lectures.

Assignments (A1 and A2)

Students will be given two assignments during the course. A1 – Cancer Biology Methods, which will include a preparatory seminar followed by a wet lab demonstration of technology. Students will then write a short summary on an assigned method to be due the following week. A2 – Journal Club, which will include a preparatory seminar followed by moderated small-group journal article discussions.

Mid-term Exam

To be written in class and will be based off the material covered in the first half of the course.

Final Exam

To be written during the examination period and will be based off the material covered in the second half

of the course.

Date & Time	Lecturer / Presenter	Topic
Jan 8/10	Dr. Ingeborg Zehbe & Mehran Masoom (MSc Candidate)	Course Introduction: Marking Scheme, Assignments, Overview of Cancer Biology
Jan 15/17	<u>Guest lecture 1</u> : Dr. Prashant Jani	Common Cancer Sites—Histology & Pathology
Jan 22/24	Dr. Ingeborg Zehbe & Melissa Togtema (PhD Candidate) & Mehran Masoom	Cancer Screening & Epidemiology & Personalized Medicine
Jan 29/31	Dr. Ingeborg Zehbe & Mehran Masoom	<u>Assignment 1</u> : Cancer Research Biology Methods: Pre-seminar & Wet Lab Demonstration
Feb 5/7	Dr. Ingeborg Zehbe & Robert Jackson (PhD Candidate) & Mehran Masoom	Oncogenes, Tumour Suppressors & Immortalization
Feb 12/14	Dr. Ingeborg Zehbe & Mehran Masoom	Tumour Immunology & Microenvironment
Feb 19/21	N/A	– Reading Week –
Feb 26/28	Mid-term Exam	Material from first half of the course
Mar 5/7	Dr. Ingeborg Zehbe & Mehran Masoom	Metastasis & Invasion
Mar 12/14	Dr. Ingeborg Zehbe & Mehran Masoom	Stem Cells & Cancer Pathways
Mar 19/21	Dr. Ingeborg Zehbe & Mehran Masoom & Robert Jackson	<u>Assignment 2</u> : Journal Club: Pre-seminar & Journal Article Discussion
Mar 26/28	Dr. Ingeborg Zehbe & Mehran Masoom	Infectious Agents & Immunotherapy
Apr 2/4	<u>Guest lecture 2</u> : Dr. Alla Reznik (Apr 2) & Dr. Pat Raply (Apr 4)	Early Breast Cancer Detection & Radiation Therapy
TBD	Final Exam	Material from second half of the course

Additional notes

Lakehead University has zero tolerance policy for academic dishonesty, including plagiarism. Class attendance is considered mandatory. Missed exams may only be written on an alternate date if a valid reason is provided. Late assignments will not be accepted. Use of non-class devices such as cell phones including iPhones is not allowed during class.