

CANCER RESEARCH (CANC)

CANC 380 Evolutionary Biology of Cancer Units: 3.00

This online course is designed to introduce students to cancer as an evolutionary problem. The material is unique in that it emphasizes the impact of the immune system in fighting cancer while at the same time shaping tumour cell evolution. Students will need to synthesize the impact of factors present in the tumour microenvironment.

NOTE Also offered online.

Learning Hours: 120 (72 Online Activity, 48 Private Study)

Requirements: Minimum 3rd year (Level 3) standing and one of (MICR 270/3.0; MICR 360/3.0; MICR 386/3.0) and one of (BCHM 270/3.0; BCHM 218/3.0).

Offering Faculty: Faculty of Health Sciences

Course Learning Outcomes:

1. Acquire a basic understanding of the evolutionary nature of cancer to recognize and evaluate the contribution of tumour heterogeneity and plasticity to cancer progression.
2. Analyze the tumour microenvironment to define its role in tumour invasion and its link to metastasis.
3. Characterize the role of immunity and inflammation in cancer and to define their contributions to cancer control or progression.
4. Recognize the impact of cancer on society and major milestones in cancer research to appreciate the successes of therapies and to assess the need for further development.
5. To apply an understanding of therapeutic selectivity to identify and evaluate the potential benefits and adverse effects of different therapeutic interventions in cancer.

CANC 440 Cancer Biology and Therapeutics Units: 3.00

A consideration of current knowledge and theories about the biology and treatment of cancer. The course will be presented in a small group format, with active student participation required.

NOTE Priority to students in the LISC Specialization Plan, CANC Sub-Plan.

Requirements: Prerequisite (Level 4 or above and registration in a BCHM/LISC Major or Specialization, or BHSc program and a minimum GPA of 3.0 in [BCHM 218/3.0 or BCHM 370/3.0]).

Offering Faculty: Faculty of Health Sciences

Course Learning Outcomes:

1. Understand the current state of knowledge of the biology, pathology and clinical outcomes of multiple forms of cancer, and relate how these factors determine established and experimental diagnostic and therapeutic approaches.
2. Discuss major issues related to the biology, pathology, diagnostics and therapeutics of each disease, in a small group student presentation format.
3. Synthesize knowledge you have acquired through the course to propose and justify your own novel approach to cancer diagnosis or treatment.



CANC 499 Research Project in Cancer Biology and Genetics Units: 12.00

A research project involving the study of cancer biology or genetics. The project will be supervised by a faculty member associated with the Cancer Research Institute, and will provide opportunities for experimental design, data analysis and both written and oral presentation of results. Students must contact a potential faculty supervisor in the Spring preceding registration in fourth year. Enrolment is limited; acceptance by a supervisor required prior to registration. NOTE Acceptance by a supervisor required prior to registration.

NOTE Students whose research requires the care and/or handling of animals must also complete the Introductory Animal Care Course and if required the appropriate Animal Use workshops through the Office of the University Veterinarian.

Learning Hours: 480 (288 Laboratory, 24 Group Learning, 24 Individual Instruction, 144 Private Study)

Requirements: Prerequisite Level 4 and registration in the LISC Specialization Plan (CANC Sub-Plan) and a cumulative GPA of 2.50 or higher. Exclusion Maximum 12.0 units from: ANAT 499/12.0; ANAT 599/6.0; BCHM 421/6.0; BCHM 422/6.0; BCHM 594/3.0; BCHM 595/6.0; BCHM 596/12.0; CANC 499/12.0; DISC 591/3.0; DISC 592/3.0; DISC 593/3.0; DISC 594/3.0; DISC 598/6.0; DISC 599/6.0; EPID 499/12.0; EPID 595/6.0; HSCI 591/3.0; HSCI 592/3.0; HSCI 593/3.0; HSCI 594/3.0; HSCI 595/3.0; HSCI 598/6.0; HSCI 599/6.0; LISC 499/12.0*; LISC 594/3.0; LISC 595/6.0; LISC 596/12.0; LISC 598/9.0; MICR 499/12.0; NSCI 499/12.0; PATH 499/12.0; PATH 595/6.0; PHAR 499/12.0; PHGY 499/12.0; REPD 499/12.0.

Offering Faculty: Faculty of Health Sciences