

Environmental Carcinogenesis

Kinesiology 431

Section: D100

Term: 2005 Summer

Instructor: Dr. M.P. Rosin

Office: K9638

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Discussion Topics: COURSE OVERVIEW:

The purpose of this class is to introduce the student to core concepts in the field of carcinogenesis. Emphasis will be on the complex interactions of lifestyle factors, carcinogen exposure, genetic susceptibility and dietary habits as determinants of cancer risk. Classwork covers topics ranging from the clinical basis of carcinogenesis to the molecular and cellular changes involved in cancer development. This course will provide the student with the background information and terminology that is central to an understanding of cancer as a chronic disease process that is potentially preventable. It also will provide students with a broad framework upon which they can interpret new knowledge on cancer development and assess its credibility.

COURSE FORMAT:

The course will involve 2 hours of lecture and 1 hour of tutorial per week. When guest lecturers are present the lecture slot may be increased to 3 hours to allow students to interact with the lecturer.

TENTATIVE TOPICS:

Epidemiological concepts

Clinical and histological classification and staging of cancer

Traditional and emerging cancer treatment regimes

Cancer as a multi-stage phenomena: Initiation, promotion and progression events

Chemical classification of carcinogens/ mechanism of activation

Oncogenes: possible genotoxic targets for alterations involved in production of a pre-malignant cell

Suppressor genes

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DNA repair mechanisms in humans

Tumour promoters, protein kinases, growth factors, and gene expression

Chromosomal changes and tumour development

Genetic predisposition to cancer

Dietary factors associated with cancer risk

Monitoring the environment for genotoxic agents: short-term assays

The relevance of animal studies as markers for human risk: risk analysis

New markers for quantifying carcinogen exposure and cancer risk in humans

Genomics and cancer studies

Grading: Assignment - 25%

Mid-term - 30%

Final - 45%

Required Texts:

Recommended Texts: King, R.J.B. Cancer Biology. 2nd Edition. Pearson Education Limited, England (2000).

In addition, students will be provided with a collection of handouts at a cost of \$15.00.

Materials/Supplies:

Prerequisite/Corequisite: PREREQUISITES:

MMB221 and at least 90 semester hrs. Since topics discussed will focus on a multidisciplinary approach to cancer a background understanding in cell biology and genetics as well as anatomy and toxicology are recommended.

Notes: Failure to attend an examination

Students who miss examinations due to exceptional circumstances (such as serious illness or compassionate reasons) are required to obtain a physician's certificate, whereby the physician states that you were unable to write your midterm or final on the set date due to a medical condition beyond your control, or other supporting documents in order to obtain consideration in the course. Such documents must be filed with the School Director (via the Kinesiology office) or Registrar within four calendar days of the date on which the examination was to have been written. Exceptional circumstances must be approved by the Undergraduate Program Committee in order for a student to receive consideration.

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Students must check the exam schedule when making course selections. Students are reminded that final examinations may be scheduled at any time during the examination period and that students should avoid making travel or employment arrangements for this period.

Academic honesty and student conduct

Academic honesty is a condition of continued membership in the University community.

Academic dishonesty, including plagiarism or any other form of cheating is subject to serious academic penalty, i.e. failure on an assignment, failure in a course, suspension or expulsion from the University.

The University codes of student conduct and academic honesty are contained in policies T10.01 and T10.02 which are available in the Course Timetable and on the Web via <http://www.reg.sfu.ca>.

July 2000

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