PATH5040/ MICI5040/ BIOC5503 – PATHOBIOLOGY OF CANCER
Sept. 7 to Dec. 3, 2012
Mondays & Fridays 2:00-4:00pm
Rm 728 Mackenzie Bldg., CDHA

Course Coordinators: Drs. Graham Dellaire and Laurette Geldenhuys

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Assessments: Term Paper (30%); Seminar Presentation (30%); Final Exam (40%)

Course Description: This course will outline the pathobiology of neoplasia. It will discuss both normal and abnormal mechanisms of cell growth and differentiation since cancer is ultimately a disease of these processes. The course will be updated in 2012 to include animal tumour models, drug discovery, pediatric cancers, cancer initiating stem cell theory, viral carcinogenesis, inflammation and cancer, and a broader discussion of the role of DNA repair pathways in cancer development and treatment. The basic biology of carcinogenesis and behaviour of tumours will be highlighted as well as the clinical aspects of cancer management, including the use of biological markers and gene expression profiling to diagnose, stage and personalize cancer treatment.

Objective: To provide graduate students and residents with an overview of the molecular events that give rise to cancer but with a strong emphasis on the clinical aspects of cancer diagnosis and treatment through expert lectures by both clinicians and cancer researchers.

Format: This is a 12 week course. For weeks 1-11, class will meet twice a week for 1.5 hours, where the first hour is a lecture followed by a 20 min student seminar presentation (with 10 min for questions) for a total of 3h contact time per week. The course concludes with a 2 hour final exam in week 12. (23 lectures total)

Basis of Evaluation: Previously this course relied on a single 33 question multiple choice final exam. Evaluation of the revised course will be more balanced between one written term paper (20 pages double spaced, excluding references)(30%), two 20 min journal-club style presentations on a research article (30%), and a 2 hour final exam of 20 multiple choice/matching questions, 6 short-answer written questions (selected from 8 possible) and 2 short essay questions (selected from 4 topics)(40%).

Readings are taken from the following text books:

DNA Repair and Mutagenesis 2nd Ed. Ed. Frieberg et al., 2006 ASM Press, Washington

The Biology of Cancer, Ed. Weinberg, 2007 Garland Science, Taylor & Francis Group, LLC, New York.

Dalhousie University, PATH5040/ MICI5040/ BIOC5503, Pathobiology of Cancer Course Outline/Schedule 2012				
DATE	TIME	TOPIC	LECTURER	LOCATION
Fri Sept 7	2-4PM	**Lecture 1**: Introduction to Pathobiology of Cancer (Course over-view) assignment of papers for – Advances in Cancer Biology – student presentations	Dellaire/Geldenhuys	**Room 728, Mackenzie Building, CDHA**
Mon Sept 10	2-4PM	**Lecture 2**: Cancer, DNA Damage and Repair, A: Mechanisms of DNA repair	Graham Dellaire	**Room 728, Mackenzie Building, CDHA**
Fri Sept 14	2-4PM	**Lecture 3**: Cancer, DNA Damage and Repair, B: The genetics of genomic instability	Graham Dellaire	**Room 728, Mackenzie Building, CDHA**
Mon Sept 17	2-4PM	**Lecture 4**: Molecular Mechanisms of Cancer, A: Cell Cycle Control and Checkpoints I	Jayme Salsman	**Room 728, Mackenzie Building, CDHA**
Fri Sept 21	2-4PM	**Lecture 5**: Molecular Mechanisms of Cancer, A: Cell Cycle Control and Checkpoints II	Jayme Salsman	**Room 728, Mackenzie Building, CDHA**
Mon Sept 24	2-4PM	**Lecture 6**: Molecular Mechanisms of Cancer, B: Oncogenes and Tumour Suppressors I	Kirill Rosen	**Room 728, Mackenzie Building, CDHA**
Fri Sept 28	2-4PM	**Lecture 7**: Molecular Mechanisms of Cancer, B: Oncogenes and Tumour Suppressors II	Kirill Rosen	**Room 728, Mackenzie Building, CDHA**
Mon Oct 1	2-4PM	**Lecture 8**: Molecular Mechanisms of Cancer, C: Angiogenesis and Autophagy	Craig McCormick	**Room 728, Mackenzie Building, CDHA**
Fri Oct 5	2-4PM	**Lecture 9**: Molecular Mechanisms of Cancer, D: Stem Cell Biology and Cancer I Hematopoietic Malignancies	Jason Berman	**Room 728, Mackenzie Building, CDHA**
Mon Oct 8	**THANKSGIVING DAY – NO CLASSES**			
Fri Oct 12	2-4PM	**Lecture 10:** Molecular Mechanisms of Cancer, D: Stem Cell Biology and Cancer II Solid Tumours	Paola Marcato	**Room 728, Mackenzie Building, CDHA**
Mon Oct 15	2-4PM	**Lecture 11**: Viral mechanisms of Oncogenesis	Craig McCormick	**Room 728, Mackenzie Building, CDHA**
Fri Oct 19	2-4PM	**Lecture 12**: Immunopathology of Cancer, A: Cancer Immunity	Brent Johnston	**Room 728, Mackenzie Building, CDHA**
Mon, Oct 22	2-4PM	**Lecture 13**: Immunopathology of Cancer B: Inflammation and Metastasis	David Waisman	**Room 728, Mackenzie Building, CDHA**
Fri Oct 26	2-4PM	**Lecture 14**: Cancer Genomics and Biomarker Use and Discovery	Graham Dellaire	**Room 728, Mackenzie Building, CDHA**
Mon Oct 29	2-4PM	**Lecture 15**: Neoplasia in the Pathology Laboratory A: Microscopy	Laurette Geldenhuys	***Room 728-A, Mackenzie Building, CDHA**
Fri Nov 2	2-4PM	**Lecture 16**: Neoplasia in the Pathology Laboratory B: Tumour Pathology	Laurette Geldenhuys	**Room 728, Mackenzie Building, CDHA**
Mon Nov 5	2-4PM	**Lecture 17**: Clinical Management of Neoplasia, A: Radiation Oncology	Mal Rajaraman	**Room 728, Mackenzie Building, CDHA**
Fri Nov 9	2-4PM	**Lecture 18**: Clinical Management of Neoplasia, B: Surgery	Carman Giacomantonio	**Room 728, Mackenzie Building, CDHA**
Mon Nov 12	**STUDY BREAK - NO CLASSES**			
Fri Nov 16	2-4PM	**Lecture 19**: Clinical Management of Neoplasia C: Chemotherapy	Mimi Davis	**Room 728, Mackenzie Building, CDHA**
Mon Nov 19	2-4PM	**Lecture 20**: Medicinal Chemistry and Anti-Cancer Drug Discovery	Stephen Bearne	**Room 728, Mackenzie Building, CDHA**
Fri Nov 23	2-4PM	**Lecture 21**: Mechanisms of Radiation and Chemotherapy Resistance	David Hoskin	**Room 728, Mackenzie Building, CDHA**
Mon Nov 26	2-4PM	**Lecture 22**: Neoplasia in the Pathology Laboratory C: Diagnosis/Grading/Staging	Laurette Geldenhuys	**Room 728, Mackenzie Building, CDHA**
Fri Nov 30	2-4PM	**Lecture 23**: Ethics in Neoplasia Pathology (and class evaluations)	Laurette Geldenhuys & Christy Simpson	**Room 728, Mackenzie Building, CDHA**
Mon Dec 3	2-4PM	**Final Exam** (and Term Paper due)		**Room 728, Mackenzie Building, CDHA**
Course Evaluation: Paper 30%, Presentations 30%, Final Exam 40%				