

CB - CANCER BIOLOGY

CB 7130 Clinical Aspects of Cancer Biology Cr. 1

Cancer Biology Ph.D. students accompany clinicians during rounds in hospital and outpatient clinics, as well as attend clinical conferences and related sessions. Offered for S and U grades only. Offered Spring/Summer.

Restriction(s): Enrollment is limited to students with a major in Cancer Biology; enrollment limited to students in the PhD in Medicine program; enrollment is limited to Graduate level students; enrollment limited to students in a Doctor of Philosophy degree; enrollment limited to students in the School of Medicine.

CB 7210 Fundamentals of Cancer Biology Cr. 3

The lectures are organized into three thematic blocks including cancer development and pathology, mechanisms of cancer development and progression, and principles of cancer prevention and therapy. Offered Winter.

Prerequisite: IBS 7015, with a minimum grade of C

Restriction(s): Enrollment is limited to Graduate level students.

CB 7220 Molecular Biology of Cancer Development Cr. 3

Topics covered include: genetics and molecular basis of normal cell transformation into malignant cancer cells; and molecular mechanisms that are fundamental to the regulation of cell growth, development, and differentiation. The students are expected to present and participate in discussions of one or more key recent papers that are relevant to the lectures. Students with a strong background in biology/molecular biology are encouraged to apply. Offered Biannually.

Prerequisite: IBS 7015, with a minimum grade of C ; CB 7210, with a minimum grade of C

Restriction(s): Enrollment is limited to Graduate level students.

Equivalent: PHC 7220

CB 7240 Principles of Cancer Therapy Cr. 2

Continuation of the principles of cancer therapy taught in C B7210. Concepts relating to tumor biology and the biochemistry and pharmacology of both classic and targeted agents are covered. Offered Biannually (Winter).

Prerequisite: IBS 7115, with a minimum grade of C ; CB 7210, with a minimum grade of C

Restriction(s): Enrollment is limited to Graduate level students.

Equivalent: PHC 7240

CB 7300 Special Topics in Cancer Biology Cr. 1-3

Designed to provide students exposure to emerging themes and technologies in the cancer field as well as to cancer related topics that are not covered in detail in other courses. Offered Every Term.

Prerequisites: ([CB 7210 with a minimum grade of C])

Restriction(s): Enrollment is limited to Graduate level students.

CB 7410 Cancer Immunology and Immunotherapy Cr. 3

Cancer immunotherapy based on the molecular mechanisms of T cell development, tolerance and activation. Topics include T cell receptor and co-stimulatory signal-mediated regulation of T cell activation, transcriptional regulation of T cell differentiation, and T cell effector function and regulatory mechanisms. Each week will consist of a one-hour lecture and a two-hour discussion. Offered Biannually (Winter).

Prerequisites: ([IBS 7010 with a minimum grade of C and IBS 7020 with a minimum grade of C] OR [IBS 7015 with a minimum grade of C])

Restriction(s): Enrollment is limited to Graduate level students.

Equivalent: IM 7410

CB 7430 Cancer Epidemiology Cr. 2

Introduction to the principal concepts and methods used in cancer epidemiology. Important evaluations of cancer burden in the United States and worldwide, as well as the major causes of human cancer. Students will be required to review and provide critical appraisal of selected literature in innovative areas of cancer epidemiologic research. Offered Biannually.

Restriction(s): Enrollment limited to students in the Master in Public Health or PhD in Medicine programs; enrollment is limited to Graduate level students; enrollment limited to students in a Doctor of Philosophy or Master in Public Health degrees.

CB 7460 Mechanisms of Neoplasia: Alterations to Cellular Signaling Cr. 3

Course covers cellular regulatory signal-transduction networks that are often activated inappropriately in malignant cells. Focus on the major principles of cancer cell biology including survival, apoptosis, adhesion, and cell cycle deregulation. Offered Biannually (Fall).

Prerequisite: CB 7210, with a minimum grade of C ; IBS 7115, with a minimum grade of C

Restriction(s): Enrollment is limited to students with a major in Cancer Biology; enrollment limited to students in the PhD in Medicine program; enrollment is limited to Graduate level students; enrollment limited to students in a Doctor of Philosophy degree; enrollment limited to students in the School of Medicine.

CB 7600 Applied Cancer Biostatistics Cr. 2

Concepts and applications of statistical methods and data analysis as related to cancer research. Students will have hands-on experience in statistical thinking, analyzing, and interpreting through the interactive teaching modules. The course provides an opportunity for students to understand statistical analyses in the medical literature, as well as provide guidance for planning and analyzing their own research. Offered Biannually (Fall).

Restriction(s): Enrollment is limited to students with a major in Cancer Biology; enrollment limited to students in the PhD in Medicine program; enrollment is limited to Graduate level students; enrollment limited to students in the School of Medicine.

CB 7700 Recent Developments in Cancer Biology Cr. 1

This course is Journal club format designed to develop proficiency in critically evaluating original scientific literature, to broaden knowledge of current cancer research, and to provide insight into different research strategies. Each student is expected to participate in class discussions. Offered Fall, Winter.

Restriction(s): Enrollment is limited to students with a major in Cancer Biology; enrollment limited to students in the PhD in Medicine program; enrollment is limited to Graduate level students; enrollment limited to students in a Doctor of Philosophy degree; enrollment limited to students in the School of Medicine.

Repeatable for 6 Credits

CB 7710 Individual Studies in Cancer Biology Cr. 1-2

Cancer Biology graduate students pursue experimental research under the guidance of selected faculty. This is the research rotation through which students select their Ph.D. dissertation mentor. Offered Every Term.

Restriction(s): Enrollment is limited to students with a major in Cancer Biology; enrollment limited to students in the PhD in Medicine program; enrollment is limited to Graduate level students; enrollment limited to students in a Doctor of Philosophy degree; enrollment limited to students in the School of Medicine.

Repeatable for 3 Credits

CB 7890 Seminar in Cancer Biology Cr. 1

This course provides second year and above students with the opportunity to present their dissertation work to their peers. This class not only provides students with the opportunity to develop their oral presenting skills, but also gives the students a chance to critically evaluate their peers. Offered Fall, Winter.

Restriction(s): Enrollment is limited to students with a major in Cancer Biology; enrollment limited to students in the PhD in Medicine program; enrollment is limited to Graduate level students; enrollment limited to students in a Doctor of Philosophy degree; enrollment limited to students in the School of Medicine.

Repeatable for 6 Credits

CB 7990 Research Technologies in Cancer Biology Cr. 1

Course designed to expose students to core research technologies at Karmanos Cancer Institute and Wayne State University to enable their inclusion in the dissertation project. The animal, genomics, pharmacology, proteomics, biostatistics, and microscopy, imaging and cytometry research cores will be presented, including their purpose and functions and instrumentation (hands-on) whenever appropriate. Offered Biannually (Winter).

Restriction(s): Enrollment is limited to students with a major in Cancer Biology; enrollment limited to students in the PhD in Medicine program; enrollment is limited to Graduate level students; enrollment limited to students in a Doctor of Philosophy degree; enrollment limited to students in the School of Medicine.

Repeatable for 12 Credits

CB 7996 Research Cr. 1-15

Directed study and pre-dissertation research with faculty in the program. Offered Every Term.

Restriction(s): Enrollment is limited to students with a major in Cancer Biology; enrollment limited to students in the PhD in Medicine program; enrollment is limited to Graduate level students; enrollment limited to students in a Doctor of Philosophy degree; enrollment limited to students in the School of Medicine.

CB 7999 Master's Essay Cr. 1-4

Research in the research literature, and writing of an essay on a topic area in contemporary cancer biology. Offered Every Term.

Restriction(s): Enrollment limited to students with a class of Candidate Masters; enrollment is limited to students with a major in Cancer Biology; enrollment limited to students in the PhD in Medicine program; enrollment is limited to Graduate level students; enrollment limited to students in a Doctor of Philosophy degree; enrollment limited to students in the School of Medicine.

Repeatable for 4 Credits

CB 8999 Master's Thesis Research and Direction Cr. 1-8

Offered Every Term.

Restriction(s): Enrollment limited to students with a class of Candidate Masters; enrollment is limited to students with a major in Cancer Biology; enrollment limited to students in the PhD in Medicine program; enrollment is limited to Graduate level students; enrollment limited to students in a Doctor of Philosophy degree; enrollment limited to students in the School of Medicine.

Repeatable for 8 Credits

CB 9991 Doctoral Candidate Status I: Dissertation Research and Direction Cr. 7.5

Offered Every Term.

Restriction(s): Enrollment is limited to Graduate level students.

CB 9992 Doctoral Candidate Status II: Dissertation Research and Direction Cr. 7.5

Offered Every Term.

Prerequisite: CB 9991, with a minimum grade of S

Restriction(s): Enrollment is limited to Graduate level students.

CB 9993 Doctoral Candidate Status III: Dissertation Research and Direction Cr. 7.5

Offered Every Term.

Prerequisite: CB 9992, with a minimum grade of S

Restriction(s): Enrollment is limited to Graduate level students.

CB 9994 Doctoral Candidate Status IV: Dissertation Research and Direction Cr. 7.5

Offered Every Term.

Prerequisite: CB 9993, with a minimum grade of S

Restriction(s): Enrollment is limited to Graduate level students.

CB 9995 Candidate Maintenance Status: Doctoral Dissertation Research and Direction Cr. 0

Offered Every Term.

Restriction(s): Enrollment is limited to Graduate level students.

Repeatable for 0 Credits

CB 9999 Doct Diss Res&Dir Cr. 1-16

Offered Every Term.

Restriction(s): Enrollment limited to students with a class of Doctoral Candidate; enrollment is limited to Graduate level students.