

# CB - CANCER BIOLOGY

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## **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.

## **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 students with a major in Cancer Biology.

## **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 and CB 7210 with a minimum grade of C

**Restriction(s):** Enrollment is limited to students with a major in Cancer Biology.

**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 7015 with a minimum grade of C and CB 7210 with a minimum grade of C

**Restriction(s):** Enrollment is limited to students with a major in Cancer Biology.

**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.

**Prerequisite:** CB 7210 with a minimum grade of C

**Restriction(s):** Enrollment is limited to students with a major in Cancer Biology.

**Repeatable for 3 Credits**

## **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).

**Prerequisite:** IBS 7015 with a minimum grade of C

**Restriction(s):** Enrollment is limited to students with a major in Cancer Biology.

**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 is limited to students with a major in Cancer Biology; enrollment limited to students in a Master in Public Health degree.

## **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 and IBS 7015 with a minimum grade of C

**Restriction(s):** Enrollment is limited to students with a major in Cancer Biology.

## **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.

## **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.

**Repeatable for 6 Credits**

## **CB 7710 Individual Studies in Cancer Biology Cr. 1-3**

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.

**Repeatable for 3 Credits**

## **CB 7800 Rigor and Reproducibility in Cancer Biology Cr. 1**

Provide students with the ability to understand and learn how to conduct rigorous and reproducible cancer research. This includes experimental design, data interpretation, publishing, animal and human research, and other topics relevant for the conduct of responsible research in Cancer Biology. Offered Winter.

**Restriction(s):** Enrollment is limited to students with a major in Cancer Biology.

## **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.

**Repeatable for 6 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.

**Repeatable for 15 Credits**

**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 is limited to students with a major in Cancer Biology.

**Repeatable for 4 Credits**

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

Offered Every Term.

**Restriction(s):** Enrollment is limited to students with a major in Cancer Biology.

**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 students with a major in Cancer Biology.

**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 students with a major in Cancer Biology.

**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; enrollment is limited to students with a major in Cancer Biology.

**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; enrollment is limited to students with a major in Cancer Biology.

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

Offered Every Term.

**Restriction(s):** Enrollment is limited to Graduate level students; enrollment is limited to students with a major in Cancer Biology.

**Course Material Fees:** \$358.78

**Repeatable for 0 Credits**