

# CB - COMPARATIVE BIOSCIENCES

CB Class Schedule (<https://courses.illinois.edu/schedule/DEFAULT/DEFAULT/CB/>)

## Courses

**CB 290 Independent Research credit: 1 to 10 Hours.** (<https://courses.illinois.edu/schedule/terms/CB/290/>)

Supervised scholarly laboratory work and/or reading in fields selected in consultation with an appropriate faculty member. May be repeated to a maximum of 10 hours in separate terms. Prerequisite: Permission of the instructor.

**CB 420 Stem Cell Journal Club credit: 1 Hour.** (<https://courses.illinois.edu/schedule/terms/CB/420/>)

This course will consist of a weekly journal club that will meet to discuss published journal articles related to stem cells. The focus will be primarily on clinical applications of stem cells, both adult and embryonic. Journal articles will be selected on a weekly basis to facilitate review of the most recent work in the field. Faculty, staff, post-doctoral fellows, and students from labs conducting stem cell research at the Veterinary School will attend and participate in the discussion. 1 undergraduate hour. 1 graduate hour. Approved for both letter and S/U grading. May be repeated in separate terms to a maximum of 2 undergraduate hours or 6 graduate hours.

**CB 449 Basic Toxicology credit: 3 Hours.** (<https://courses.illinois.edu/schedule/terms/CB/449/>)

Same as CPSC 433, ENVS 480 and FSHN 480. See FSHN 480.

**CB 467 Fund Phar Discovery & Dev credit: 2 Hours.** (<https://courses.illinois.edu/schedule/terms/CB/467/>)

Examines fundamental aspects, practices and strategies utilized in the discovery and evaluation of pharmaceutical agents developed for human and animal use. The discovery, preclinical and clinical assessment of drugs is reviewed from both a chemical and biological perspective, in addition to the regulatory guidelines governing those activities and the required post-market surveillance. Also examines major ethical approaches and the strengths and limitation of various development strategies. 2 undergraduate hours. 2 graduate hours. Approved for both letter and S/U grading. Prerequisite: At least one semester of physiology (MCB 103, MCB 240, or equivalent), and biochemistry (MCB 354 or MCB 450 or equivalent) or consent of instructor.

**CB 514 Neurotoxicology credit: 3 Hours.** (<https://courses.illinois.edu/schedule/terms/CB/514/>)

Examines toxic responses of the mammalian nervous system to xenobiotics (therapeutic agents, drugs of abuse, toxins, environmental and industrial chemicals) from the molecular and cellular levels to the behavioral level. Also covers neuroteratology, sensitive periods for neurotoxicity and the potential role of environmental factors/xenobiotics in the etiology of nervous system disorders. Same as ENVS 514 and PSYC 515. Prerequisite: Credit or concurrent registration in MCB 450 or equivalent.

**CB 516 Reprod & Dev Toxicology credit: 3 Hours.** (<https://courses.illinois.edu/schedule/terms/CB/516/>)

Introduction to reproductive and developmental toxicology that examines causes and manifestations both of structural malformations and of functional deficits in mammals. Topics covered include interactions between external factors and developmental gene expression, the behavioral consequences of chemical exposure, identification and regulation of reproductive and developmental toxicants. Examples emphasize reproductive and developmental toxicants that are present in the human environment. Same as ENVS 516. Prerequisite: Consent of instructor.

**CB 520 Models in Biomedical Research credit: 2 Hours.** (<https://courses.illinois.edu/schedule/terms/CB/520/>)

Students enrolled in this course will review scientific literature pertaining to experimental models used in biomedical research, and will present selected papers to the class. Faculty members who use these models in their research will attend student presentations and participate in the associated discussions. By the end of the course, student will be familiar with the uses, advantages and limits of key molecular, cellular and animal models used in a range of biomedical research fields. 2 graduate hours. 2 professional hours. May be repeated in separate terms if topics vary. Prerequisite: No prerequisites for graduate students enrolled in a Master of Science or PhD program in a biomedical field. Professional students must obtain the coordinator's authorization.

**CB 533 Repro Physiology Lab Methods credit: 1 to 3 Hours.** (<https://courses.illinois.edu/schedule/terms/CB/533/>)

Same as ANSC 533 and MCB 533. See ANSC 533.

**CB 550 Detect/Anal Gene Transcripts credit: 4 Hours.** (<https://courses.illinois.edu/schedule/terms/CB/550/>)

Gives participants the background information and hands-on experience in the methodologies necessary to utilize cloned genes for the detection and quantitation of specific mRNA transcripts in RNA extracted from tissue or cell culture samples. Methodologies covered will include: recombinant plasmid propagation, cDNA probe isolation and isotopic labeling, RNA isolation, Poly A+ mRNA selection, gel separation and transfer of RNA to a membrane (Northern blot), hybridization of specific gene probes to membrane bound RNA (Northern hybridization), detection and quantitation of hybridization signal. These basic methodologies are widely applicable to different experimental systems. They allow an investigator to monitor the effects of physiological manipulations, to animals or cultured cells, at the molecular level. Prerequisite: Consent of instructor.

**CB 551 Ecotoxicology North Hemisphere credit: 1 Hour.** (<https://courses.illinois.edu/schedule/terms/CB/551/>)

Sources, environmental fate, and adverse effects of manmade and naturally-occurring chemicals on terrestrial and aquatic wildlife and ecological systems will be addressed. Historical and contemporary issues in wildlife health, including direct toxic effects and indirect effects of environmental contaminants will be examined. Focuses mainly on northern hemisphere with multiple examples from North America and Europe. Includes perspectives from academia, industry and public sector. Prerequisite: At least one semester of biology (IB 150 or equivalent), and biochemistry (MCB 354 or equivalent).

**CB 552 Ethics in Toxicology credit: 1 Hour.** (<https://courses.illinois.edu/schedule/terms/CB/552/>)

Ethical issues in the practice of toxicological research collaboration, authorship and plagiarism, professional responsibility to subjects (both human and animal), whistle-blowing, codes of ethics, legal obligations. Case Studies.

**CB 554 Systems Toxicology credit: 3 Hours. (<https://courses.illinois.edu/schedule/terms/CB/554/>)**

Provides an overview of the effects of chemicals and their mechanisms of action in a variety of organ systems. Topics include toxicology of the nervous, developmental, reproductive, thyroid, renal, hepatic, immune, pulmonary, and gastrointestinal systems. Prerequisite: Completion of a course in basic toxicology or consent of instructor.

**CB 564 Comp Clinical Pharmacology credit: 3 Hours. (<https://courses.illinois.edu/schedule/terms/CB/564/>)**

Lecture-discussion of the clinical use in animals of human and veterinary drugs, including current literature review on pharmacodynamic species differences, novel indications, and contrast of therapeutic alternatives. Prerequisite: Graduate Veterinarian or consent of instructor.

**CB 590 Seminar credit: 1 Hour. (<https://courses.illinois.edu/schedule/terms/CB/590/>)**

Required of all graduate students whose major is comparative biosciences.

**CB 591 Biosciences Seminar Series credit: 0 to 1 Hours. (<https://courses.illinois.edu/schedule/terms/CB/591/>)**

Review and discussion of selected topics. Students are required to participate in weekly discussions and present one formal seminar per year, on a topic approved by the instructor. Approved for S/U grading. May be repeated to a maximum of 4 hours. Prerequisite: Enrollment in CB graduate program or consent of instructor.

**CB 592 Special Problems credit: 1 to 12 Hours. (<https://courses.illinois.edu/schedule/terms/CB/592/>)**

Basic and applied study including orientation and research on pertinent initial and continuing problems in the student's area of interest. Prerequisite: Consent of instructor.

**CB 594 Comparative Bioscience credit: 1 to 4 Hours. (<https://courses.illinois.edu/schedule/terms/CB/594/>)**

To be used to designate a trial or experimental course for five or more students. It is designed to be a graduate course. A course can be taught under this designation two times within a two-year period and cannot be renewed as a CB 594 course. May be repeated to a maximum of 8 hours if topics vary. Prerequisite: Consent of instructor.

**CB 596 Interdisciplinary Tox Sem credit: 1 Hour. (<https://courses.illinois.edu/schedule/terms/CB/596/>)**

Interdisciplinary seminar on topics within the area of toxicology; topics vary each term. Seminars are presented by faculty, visiting lecturers, and students based upon their study, research, and/or professional activities in the selected topic area. Same as ENVS 596 and PATH 596. May be repeated to a maximum of 8 hours if topics vary. Prerequisite: Consent of instructor.

**CB 599 Thesis Research credit: 0 to 16 Hours. (<https://courses.illinois.edu/schedule/terms/CB/599/>)**

Individual direction of research and thesis writing. Approved for S/U grading only. May be repeated in the same term or in separate terms.

**CB 646 Advanced Therapeutics credit: 1 Hour. (<https://courses.illinois.edu/schedule/terms/CB/646/>)**

Designed as an elective offering for veterinary professional students and graduate students interested in clinical pharmacology. As an extension of core veterinary pharmacology modules in the veterinary professional curriculum, case and/or problem-based discussions will be used to highlight rational therapeutic decision-making and its evidence basis. Drug classes presented in core instruction will be reviewed and new drug classes will introduced in the context of case management discussions. 1 graduate hour. 1 professional hour. Approved for S/U grading only. May be repeated in separate terms to a maximum of 3 hours. Prerequisite: VM 607 or consent of instructor.

**CB 692 Special Problems credit: 1 to 6 Hours. (<https://courses.illinois.edu/schedule/terms/CB/692/>)**

Individual research on a special problem chosen in consultation with the instructor and department head. 1 to 6 graduate hours. 1 to 6 professional hours. Approved for both letter and S/U grading. May be repeated to a maximum of 6 hours. Prerequisite: Enrollment in veterinary medicine curriculum with grade-point average of 3.0 or above, or consent of instructor.