

# INTERDISCIPLINARY BIOMEDICAL SCIENCES (IBMS)

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## **IBMS 600. Laboratory Safety. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Describes health hazards commonly found in biomedical laboratories and their appropriate safety precautions, government regulations and emergency responses. Includes hazards of working with micro-organisms, experimental animals, and chemical, electrical and fire hazards. Graded as S/U/F.

## **IBMS 620. Laboratory/Clinical Rotations. 2 Hours.**

Semester course; 2 credits. Students conduct laboratory and/or clinical rotations to gain direct exposure to individual SOM projects. Graded S/U/F.

## **IBMS 624. Research Reproducibility and Transparency. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Enrollment is restricted to graduate students. This course is designed to provide students with background knowledge about issues related to and build resources for ensuring reproducibility and transparency in research. Taught in six two-hour blocks during the summer. Graded as satisfactory/unsatisfactory.

## **IBMS 635. Cellular Signalling. 3 Hours.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOC 503/504 with minimum grade of B, or permission of instructor. An interdisciplinary introduction to molecular mechanisms important in eukaryotic inter- and intracellular signaling. Topics covered: common signaling mechanisms (heterotrimeric G proteins and G-protein-coupled receptors, small G proteins, tyrosine kinases and MAP kinases, and ion channels), membranes, lipids and ions (calcium signaling, phosphoinositols and lipid signaling through GPCRs), immune and metabolic kinase cascades (AMP-activated kinase, NFκB and Jak/Stat pathways), and programmed cell death.

## **IBMS 651. M.D.-Ph.D. Journal Club. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. May be repeated for credit. Enrollment is restricted to students in the M.D.-Ph.D. program. This course is intended for first-year M.D.-Ph.D. students as a complement to the ongoing medical curriculum and is designed to expose them to research literature related to their ongoing course work. The objectives are to introduce students to original research papers from the current and classical literature and to provide practice and training in effectively identifying and discussing key hypotheses, methods, results and conclusions, as well as in evaluating the strengths and weaknesses of papers. Graded as Satisfactory/Unsatisfactory.

## **IBMS 652. M.D.-Ph.D. Science and Disease. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Enrollment is restricted to students in the M.D.-Ph.D. program. This course is intended for second-year M.D.-Ph.D. students as a complement to the ongoing medical curriculum. Clinical faculty or physician-scientists present a patient and then either the physician-scientist or a basic science faculty member discusses the basic science underpinnings of the disease in question. The sessions are coordinated with the MS2B curriculum. Active student participation in the discussion of the case and scientific basis is expected and required. Faculty members are encouraged to present informal sessions designed to encourage student participation and engaged learning. Graded as Satisfactory/Unsatisfactory.

## **IBMS 653. M.D.-Ph.D. Research Seminar. 0.5 Hours.**

Semester course; 1 lecture hour (alternate weeks). .5 credits. May be repeated for credit. Enrollment is restricted to students enrolled in School of Medicine M.D.-Ph.D. training while in the medical or graduate phases. Course exposes M.D.-Ph.D. students to state-of-the-art research in a range of fields. The objectives are to provide an opportunity for students to attend formal research presentations by faculty experts; participate in discussions of the underlying hypotheses, research methods, critical results and interpretation of data; give formal presentations based on their own research and receive feedback. Graded as Satisfactory/Unsatisfactory.

## **IBMS 690. Basic Health Sciences Research Seminar. 1 Hour.**

Semester course; 1 lecture hour. 1 credit. Faculty and/or visiting lecturers present current research in basic health sciences. Students attend 12 seminars per semester in any of the basic health science or clinical departments in the School of Medicine and submit a one-paragraph (approximately 100-word) summary description of the seminar. Graded S/U/F.

## **IBMS 691. Special Topics in Interdisciplinary Biomedical Sciences. 0.5-4 Hours.**

Semester course; variable hours. 0.5-4 credits. Lectures, seminars, tutorial sessions, Web-based courses and/or library research assignments in selected areas not available in other graduate-level courses or as a concentrated emphasis on a particular topic. Graded as S/U/F.

## **IBMS 692. Special Topics in Interdisciplinary Biomedical Sciences. 0.5-4 Hours.**

Semester course; 0.5-4 variable hours. 0.5-4 credits. Lectures, seminars, tutorial sessions, Web-based courses and/or library assignments in selected areas not available in other graduate-level courses or as a concentrated emphasis on a particular topic.

## **IBMS 697. M.D.-Ph.D. Directed Research. 1-3 Hours.**

Semester course; 1-3 research hours. 1-3 credits. May be repeated for a maximum of six credits. Enrollment is restricted to students in an M.D.-Ph.D. dual degree program. Initial research experience leading to Ph.D. degree for students in M.D.-Ph.D. dual-degree programs. Research experience can be undertaken in one or more laboratories. Graded as satisfactory/unsatisfactory.