

BIOMEDICAL STUDIES (BMS)

BMS 5100 Biomedical Seminar (1)

Pre-requisite(s): Enrollment in graduate program

Students are required to register for the weekly seminar (a forum for outside speakers, presentation of student research, and discussion of selected topics) and to present papers. No more than three semester hours may be counted on a master's degree and no more than six may be counted on the Ph.D. degree.

BMS 5199 Non-Thesis Degree Completion (1)

To fulfill requirements for non-thesis master's students who need to complete final degree requirements other than coursework during their last semester. This may include such things as a comprehensive examination, oral examination, or foreign language requirement. Students are required to be registered during the semester they graduate.

BMS 5301 Survey of Immunology (3)

Pre-requisite(s): BIO 4301

Advanced aspects of the following topics are covered: Innate immunity, antigen recognition and presentation, lymphocyte maturation, autoimmunity, host defense failure, hypersensitivity, and vaccine development.

BMS 5302 Current Concepts in Immunology (3)

Pre-requisite(s): BIO 4301

The manipulation of the immune system to advance therapy and prevention is a special focus of this course. Antigen recognition and presentation, dendritic cell development, vaccine development, and other topics are covered in detail. Each topic is presented from the literature by a researcher working on the topic.

BMS 5305 Virology (3)

Cross-listed as BIO 5302

See BIO 5302 for course information.

BMS 5307 Advanced Cell and Molecular Biology (3)

Cross-listed as BIO 5307

Advanced topics in current molecular and cell biology research, including molecular interactions, regulation of gene expression, organelle and cytoskeleton structure and function, intra- and inter-cellular signaling, intracellular trafficking, cell cycle regulation, and cell division.

BMS 5308 Biotechnology and Cell Biomedicine (3)

Pre-requisite(s): Graduate student enrollment in Biology, Chemistry, or Biomedical Studies program

(BIO 4306 preferred but not required.) Interdisciplinary course that covers basic mechanisms of molecular biology and genetics along with rigorous presentation of state-of-the-art research methodology. Utilization of DNA/RNA/protein regulation technology in biomedical and clinical applications.

BMS 5310 Molecular Biology of the Cell (3)

Pre-requisite(s): BIO 4307

Advanced topics in cell biology. Cell division, replication, and recombination of DNA and mutations and repair of DNA will be reviewed. Application of restriction enzymes, recombinant DNA technology, and sequencing of DNA to study molecular architecture of the cell will be overviewed.

BMS 5343 Studies in Intermediary Metabolism (3)

Pre-requisite(s): CHE 4341 or BIO 4341; or consent of instructor

Investigation of the interrelationships of energy utilizing and producing metabolic pathways. Consideration will be given to glycolysis, Krebs's cycle, oxidative pathways of fatty acids, pathways of lipid and sterol formation, and various aspects of gluconeogenesis and the pentosephosphate shunt, as well as specific functions of amino acid metabolism in oxidative stress and methylation.

BMS 5355 Genomic Analysis (3)

Cross-listed as BIO 5355

See BIO 5355 for course information.

BMS 5399 Experimental Design and Research Communications for Molecular Biologists (3)

Cross-listed as BIO 5399

See BIO 5399 for course information.

BMS 5401 Special Techniques in Immunology (4)

Pre-requisite(s): CHE 4341 and 4342; or consent of instructor

Immune responses of vertebrate animals, including immunochemistry and molecular genetics. Cellular responses will be analyzed by conventional skin tests, in vitro correlates of delayed-type hypersensitivity, histology, and laser-activated cell sorting.

BMS 5V95 Biomedical Research (1-8)

Pre-requisite(s): Consent of student's dissertation or advisory committee
Directed research for those students who have not yet passed the Ph.D. preliminary examination and who have not yet selected a Ph.D. dissertation topic or for master's students desiring in-depth practical training in a specific area of research. May be repeated for no more than 30 semester hours of credit.

BMS 5V99 Thesis (6)

Pre-requisite(s): Consent of student's thesis committee or a minimum of twelve hours of graduate work

A minimum of six semester hours is required.

BMS 6310 Research Rotations (3)

Individual students complete five-week rotations in three research laboratories in order to master a set of biomedical techniques and to choose a home lab and dissertation mentor. Students join ongoing research projects and learn current techniques from lab personnel that will advance their dissertation work. Participation in experimental planning and exploration of the relevant literature is expected.

BMS 6390 Special Problems in Biomedical Studies (3)

Pre-requisite(s): Consent of student's dissertation committee

Selected topics in biomedical studies. May be repeated with change in content. No more than six semester hours total credit allowed.

BMS 6V99 Dissertation (1-12)

Pre-requisite(s): Consent of the student's dissertation committee and admission to candidacy

A minimum of twelve semester hours is required.