BIOLOGICAL CHEMISTRY (BCM)

School of Medicine

BCM 092 — Internship in Biological Chemistry (1-12 units)

Course Description: Supervised work experience in biological chemistry and related fields.
Prerequisite(s): Consent of instructor.
Learning Activities: Internship 3-36 hour(s).
Grade Mode: Pass/No Pass only.

BCM 192 — Internship in Biological Chemistry (1-12 units)

Course Description: Supervised work experience in Biological Chemistry and related fields.
Prerequisite(s): Upper division standing; approval of project prior to internship by preceptor.
Learning Activities: Internship 3-36 hour(s).
Grade Mode: Pass/No Pass only.

BCM 198 — Group Study (1-5 units)

Course Description: For undergraduate students desiring to explore particular topics in depth. Lecture and conferences may be involved.
Prerequisite(s): Consent of instructor.
Learning Activities: Variable.
Grade Mode: Pass/No Pass only.

BCM 199 — Special Study for Advanced Undergraduates (1-5 units)

Course Description: Special study for advanced undergraduates.
Prerequisite(s): Consent of instructor.
Learning Activities: Variable.
Grade Mode: Pass/No Pass only.

BCM 209 — Prostaglandins/Leukotrienes & Related Lipids (2 units)

Course Description: Oxidative desaturation/elongation of polyunsaturated fatty acids. Biosynthesis of prostaglandins/leukotrienes from polyunsaturated fatty acids. Chemistry, biochemistry, and metabolism. Nutritional regulation. Physiological/pathophysiological implications; pharmacological and clinical relevance.
Prerequisite(s): (BCP 101A and BCP 101B) or (PHC 101A and PHC 101B) or (PGG 100A and PGG 100B).
Learning Activities: Lecture 2 hour(s).
Grade Mode: Letter.

BCM 217 — Molecular Genetics of Fungi (3 units)

Course Description: Advanced treatment of molecular biology and genetics of filamentous fungi and yeasts, including gene structure, organization and regulation; secretion; control of reproduction; molecular evolution; transformation; and gene manipulation.
Prerequisite(s): PLP 130; PLP 215X; BCP 101B; BOT 119; GGG 100; GGG 102A; graduate standing in a biological science; MIC 215 recommended.
Learning Activities: Lecture 3 hour(s).
Cross Listing: PLP 217.
Grade Mode: Letter.

BCM 222 — Mechanisms of Translational Control (2 units)

Course Description: Molecular mechanisms of protein synthesis and translational control in eukaryotic cells, with emphasis on mammalian cells and their viruses. An advanced graduate-level treatment of topics of current interest, with readings and discussion of primary papers from the literature.
Prerequisite(s): BCP 201C or consent of instructor.
Learning Activities: Lecture 1 hour(s), Discussion 1 hour(s).
Grade Mode: Letter.

BCM 230 — Practical NMR Spectroscopy & Imaging (1 unit)

Course Description: Basic theory, experimental methods, and instrumentation of NMR. Enables understanding of NMR spectroscopy and imaging experiments.
Prerequisite(s): CHE 107A; CHE 107B; (PHY 009A, PHY 009B, PHY 009C; or PHY 005A, PHY 005B, PHY 005C) or consent of instructor.
Learning Activities: Lecture 1 hour(s).
Grade Mode: Satisfactory/Unsatisfactory only.

BCM 231 — Biological Nuclear Magnetic Resonance (3 units)

Course Description: Principles and applications of magnetic resonance in biomedicine. Fundamental concepts and the biophysical basis for magnetic resonance applications in areas of tissue characterization/imaging, metabolic regulation, and cellular bioenergetics.
Prerequisite(s): MCB 221A; or equivalent or consent of instructor.
Learning Activities: Lecture 3 hour(s).
Cross Listing: BPH 231.
Grade Mode: Letter.

BCM 250 — Functional Genomics: From Bench to Bedside (3 units)

Course Description: Functional genomics (how genetic variation and epigenomics affect gene expression), with an emphasis on clinical relevance and applications. Topics include genetic variation and human disease, cancer therapeutics, and biomarker discovery.
Prerequisite(s): GGG 201C; MCB 214; or equivalent.
Learning Activities: Lecture/Discussion 3 hour(s).
Credit Limitation(s): No credit to students who have previously completed PHA 250.
Cross Listing: GGG 250.
Grade Mode: Letter.

BCM 291 — Seminar in Genetic Approaches to Pathogenesis of Human Disease (1 unit)

Course Description: Current genetic approaches to understanding the pathogenesis of disease and mammalian development presented and critically discussed by faculty, fellows and students. Topics include Mendelian and non-Mendelian diseases, imprinting, homologous recombination, statistical methods, genetic epidemiology and cell cycle dependent expression.
Prerequisite(s): Student in Genetics Graduate Group or consent of instructor.
Learning Activities: Seminar 1 hour(s).
Cross Listing: BCM 491.
Grade Mode: Satisfactory/Unsatisfactory only.

BCM 298 — Group Study (1-5 units)

Course Description: For graduate students desiring to explore particular topics in depth. Lectures and conferences may be involved.
Prerequisite(s): Consent of instructor.
Learning Activities: Variable.
Grade Mode: Letter.

BCM 299 — Research (1-12 units)

Course Description: Research.
Prerequisite(s): Consent of instructor.
Learning Activities: Variable.
Grade Mode: Satisfactory/Unsatisfactory only.

BCM 491 — Seminar in Genetic Approaches to Pathogenesis of Human Disease (1 unit)

Course Description: Current genetic approaches to understanding the pathogenesis of disease and mammalian development presented and critically discussed by faculty, fellows and students. Topics include Mendelian and non-Mendelian diseases, imprinting, homologous recombination, statistical methods, genetic epidemiology and cell cycle dependent expression.
Prerequisite(s): Student in Genetics Graduate Group or consent of instructor.
Learning Activities: Seminar 1 hour(s).
Cross Listing: BCM 291.
Grade Mode: Honors/Pass/Fail.

BCM 493 — Medical Genomics (6 units)

Course Description: Four-week module will focus on the clinical methods and applications of medical genomics. Topics will include an introduction to the human genome and human genomics, genetic and epigenetic variation and the ethics of medical genomics.
Prerequisite(s): Consent of instructor.
Learning Activities: Clinical Activity 4 hour(s), Lecture 4 hour(s), Laboratory 12 hour(s).
Grade Mode: Honors/Pass/Fail.

BCM 497T — Tutoring in Biological Chemistry (1-5 units)

Course Description: Assist instructor by tutoring medical students in preparation for one of the departmental courses that is a component of the required curriculum of the School of Medicine.
Prerequisite(s): Advanced standing or consent of instructor.
Learning Activities: Tutorial 3-15 hour(s).
Grade Mode: Honors/Pass/Fail.

BCM 498 — Group Study (1-5 units)

Course Description: Group study.
Prerequisite(s): Medical students with consent of instructor.
Learning Activities: Variable.
Grade Mode: Honors/Pass/Fail.

BCM 499 — Research (1-12 units)

Course Description: Research with Department of Biological Chemistry.
Prerequisite(s): Medical students with consent of instructor.
Learning Activities: Variable.
Repeat Credit: May be repeated.
Grade Mode: Honors/Pass/Fail.