

OHIO STATE BIOCHEMISTRY PROGRAM
autumn QUARTER APPROVED ELECTIVE COURSES

BIOCHEMISTRY DEPARTMENT

706 Advanced Biological Chemistry Lab U G 5

Advanced laboratory integrating recombinant DNA technology including cloning and mutagenesis with protein expression, purification, and characterization.

Au Qtr. 3 4-hr labs. Prereq: 511 and 521 or equiv or permission of instructor.

735 Plant Biochemistry I U G 3

The biochemistry of plant chloroplasts and mitochondria: photosynthesis, carbohydrate metabolism, sulfate and nitrate reduction, chlorophyll and heme synthesis, chloroplast development, respiration, and mitochondrial development.

Au Qtr. 3 cl. Prereq: 511 or 614. Not open to students with credit for PCMB 735. Cross-listed in PCMB.

Biomedical Informatics

730 Biomedical Informatics I U G P 3

Introduce students to the development of methods for carrying out detailed, realistic and predictive simulations of biological phenomena at many time and length scales.

Au Qtr. Prereq: Cptr/Inf 230. Not open to students with credit for IBGP 730. Cross-listed in Integrated Biomedical Science.

730 Intermediate Organic Chemistry U G 3

Intermediate-level course for advanced undergraduates and beginning graduate students in organic reactions and mechanisms.

Au Qtr. 3 cl. Prereq: 253. Recommended for entering grad students in organic chemistry. 730, 731, 831, 832, 833 comprise the first year graduate organic sequence.

731 Advanced Organic Chemistry I U G 3

Fundamental aspects of physical organic chemistry.

Au Qtr. 3 cl. Prereq: 253, 521 or 532, or permission of instructor. 730, 731, 831, 832, and 833 comprise the first-year graduate organic sequence.

752 Inorganic Biochemistry U G 3

Roles of metal ions as biological redox and catalytic cofactors; coordination chemistry; spectroscopy and electrochemistry.

Au Qtr. 3 cl. Prereq: undergraduate degree with a major in chemistry, or permission of instructor.

990 Seminar on Topics in Biochemistry G 3

Advanced topics in the biological aspects of chemistry.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: Permission of instructor. Repeatable to a maximum of 12 cr hrs.

FOOD SCIENCE AND TECHNOLOGY

830 Advanced Studies in Nutrition

Advanced concepts in nutrition.

Au, Wi, Sp Qtrs. 3 or 5 cl. Prereq: 761, 762; Anim Sci 530 or Humn Ntr 610; 10 grad cr hrs in physiology. Not open to students with credit for Anim Sci 830 or Humn Ntr 830. Cross-listed in Animal Sciences, and Human Nutrition.

MICROBIOLOGY

701 Cellular and Molecular Immunology U G 5

Cellular and molecular mechanisms of immune response, cell recognition and communication, molecular biology of cell recognition structures, cytokines, and effector mechanisms.

Au Qtr. 5 cl. Prereq: Biochem 613, Mol Gen 500 or 605. Not open to students with credit for MVIMG 701. Cross-listed in Medical Virology, Immunology, and Medical Genetics.

730^ Immunology of Parasitic Infections U G P 2

A discussion of the role of immunity in the production, course, pathogenicity, diagnosis, and control of parasitic infections of humans and/or domestic animals.

Au Qtr. 2 cl. Prereq: Basic courses in parasitology and immunology; permission of instructor. Not open to students with credit for Vet Prev 730. Repeatable to a maximum of 4 cr hrs. Content varies according to major interests of class. Protozoa-arthropods taught in odd yrs; helminths in even yrs. Cross-listed in Veterinary Preventive Medicine.

MOLECULAR AND CELLULAR BIOCHEMISTRY

None in Autumn

MOLECULAR GENETICS

700 Systems of Genetic Analysis U G 3

Analysis of several major systems used in modern experimental genetics.

Au Qtr. 3 1-hr cl. Prereq: 606 or equiv.

827 * Biochemical Mechanisms of Carcinogenesis G 3

Defines the multi-stage model of cancer, signal transduction pathways used by tumor cells, genetics of cancer susceptibility and gene mutations in tumors.

Au Qtr. 2 1.5-hr cl. Prereq: 1 yr of grad biochem or permission of instructor. Not open to students with credit for Med Micr 827 or Molbioch 827.

841 * Viral Pathogenesis and Oncogenesis G 5

Cellular, immunological and molecular mechanisms involved with virus pathogenesis in animals/humans.

Au Qtr. 5 cl. Not open to students with credit for Med Micr 841 or Vet Bios 841 or Vet Path 841. Cross-listed in Veterinary Biosciences.

NEUROSCIENCE

723 Cellular and Molecular Neurobiology G 5

Introduction to cellular components of nervous system, cell and molecular biology of nervous tissue, membrane properties and function in neural cells, brief overview of nervous system development.

Au Qtr. 2 2-hr lectures. Prereq: Permission of instructor. Not open to students with credit for Neurosci 723. Cross-listed in Neuroscience.

PCMB - PLANT CELLULAR AND MOLECULAR BIOLOGY

725 Circadian Biology U G 3

Introduction to and discussion of the phenomenology and molecular mechanisms of the circadian timing system of five model systems.

Au Qtr. Prereq: 622 or Mol Gen 500 or 605 or equivs or permission of instructor.

735 Plant Biochemistry I U G 3

The biochemistry of plant chloroplasts and mitochondria: photosynthesis, carbohydrate metabolism, sulfate and nitrate reduction, chlorophyll and heme synthesis, chloroplast development, respiration, and mitochondrial development.

Au Qtr. 3 cl. Prereq: Biochem 511 or 614. Not open to students with credit for 631 prior to Wi Qtr 1988, or to students with credit for 635 prior to Wi Qtr 1995, or to students with credit for Biochem 735. Cross-listed in Biochemistry.

PHARMACY

710 Pharmaceutical Biotechnology I P 3

Products of biotechnology used as drugs, with an emphasis on immunoactive biomacromolecules employed in prevention, diagnosis and therapy of infectious, allergic, immunodeficiency and other diseases.

Au Qtr. 3 cl. Prereq: Second-year standing in Pharm D program.

747 Pharmacology I G P 3

The first in a six-course sequence providing a comprehensive study of the therapeutic effects, pharmacodynamics, mechanistic actions, and toxicological effects of important drug classes.

Au Qtr. 3 cl. Prereq: Second-year standing in Pharm D program.

881 Advanced Topics in Pharmacology G 3

A study of current advanced theories of pharmacodynamics.

Su, Au, Wi, Sp Qtrs. 3 cl. Prereq: 871 and permission of instructor. Repeatable to a maximum of 9 cr hrs.