

LIFE SCIENCES - MOLECULAR BIOLOGY AND BIOCHEMISTRY (LS-MBB)

Courses

LS-MBB 5509 Graduate Developmental Biology Credits: 3

Principles of development and differentiation of structure during embryology in animals. Molecular, cellular and organismal level concepts and mechanism will be considered.

LS-MBB 5530 Advanced Principles of Molecular Biology Credits: 3

Molecular aspects of gene structure and function in prokaryotic and eukaryotic organisms and their viruses. Emphasis on genome structure and organization and regulation of gene expression.

LS-MBB 5538 Molecular Recognition in Molecular Biology Credits: 2

Graduate Research Seminar. Analysis of the impact of the most recent developments in molecular genetics and structural biology as related to fundamental molecular recognition events.

LS-MBB 5561 Advanced Principles of Biochemistry Credits: 3

A one semester course in general biochemistry. This course will emphasize the structure of biological molecules, thermodynamics of biological reactions, and selected aspects of energy metabolism and metabolic pathways.

Prerequisites: Must be a graduate student.

LS-MBB 5565 Structure And Function Of Proteins Credits: 4

This course will discuss membrane biophysics and structure-function relationships of proteins. The course will cover structure-function analysis, protein purification, membrane proteins, and hands-on laboratory experience with select analysis methods.

Prerequisites: LS-MBB 5561

LS-MBB 5569 Current Topics in Molecular Biology and Biochemistry Credits: 1-3

Current topics and recent developments in biochemistry and molecular biology with emphasis on rapidly developing research areas.

Co-requisites: LS-MBB 5530 or LS-MBB 5561 or LS-CBB 5520 or LS-CBB 5523 or BIOL 5514 or BIOL 5525.

LS-MBB 5591 Directed Individual Studies In Molecular Biology And Biochemistry Credits: 1-6

Intensive readings and/or research in an area selected by the graduate student in consultation with the instructor.

Co-requisites: LS-MBB 5530 or LS-MBB 5561 or LS-CBB 5520 or LS-CBB 5523 or BIOL 5514 or BIOL 5525.

LS-MBB 5596 Advanced Experimental Molecular Biology I Credits: 2

Structured laboratory work with individual tutorial sessions designed to familiarize first-year Ph.D. and advanced M.S. students with concepts and techniques of modern molecular biology research. 1-2 hr/wk tutorial and 15-20 hr/wk of laboratory work.

Co-requisites: LS-MBB 5530 or LS-MBB 5561 or LS-CBB 5520 or LS-CBB 5523 or BIOL 5514 or BIOL 5525.

LS-MBB 5597 Advanced Experimental Molecular Biology II Credits: 2

Structured laboratory work with individual tutorial sessions designed to familiarize first-year Ph.D. and advanced M.S. students with concepts and techniques of modern molecular biology research. 1-2 hr/wk tutorial and 15-20 hr/wk of laboratory work.

Co-requisites: LS-MBB 5530 or LS-MBB 5561 or LS-CBB 5520 or LS-CBB 5523 or BIOL 5514 or BIOL 5525.

LS-MBB 5599 Thesis Research in Molecular Biology and Biochemistry Credits: 1-12

Research and thesis preparation for M.S. degree candidates.

Co-requisites: LS-MBB 5530 or LS-MBB 5561 or LS-CBB 5520 or LS-CBB 5523 or BIOL 5514 or BIOL 5525.

LS-MBB 5611 Seminar in Molecular Biology and Biochemistry Credit: 1

Presentation and discussion of selected areas in biochemistry and molecular biology. This course may be repeated by doctoral students for a maximum of 3 credit hours.

Co-requisites: LS-MBB 5530 or LS-MBB 5561 or LS-CBB 5520 or LS-CBB 5523 or BIOL 5514 or BIOL 5525.

LS-MBB 5690 Analytical Methods in Molecular Biology and Biochemistry Credits: 1-5

Emphasizes the development of skills in experimental design, analytical methods and instrumentation as applied to problems of interest to modern molecular biology and biochemistry, including the analysis of results. Can be repeated up to a maximum of eight hours total.

Co-requisites: LS-MBB 5530 or LS-MBB 5561 or LS-CBB 5520 or LS-CBB 5523 or BIOL 5514 or BIOL 5525.

LS-MBB 5696 Dissertation Development Credits: 1-3

This course is individually directed research leading to the fulfillment of the Comprehensive Exam requirements for the Molecular Biology Biochemistry primary discipline. This includes submission of the final, revised version of the NIH-style research proposal to committee members and (ii) successful oral defense of the proposal before the student's research advisory committee.

Prerequisites: BIOLOGY 5501.

LS-MBB 5699 Dissertation Research in Molecular Biology and Biochemistry Credits: 1-12

Research and dissertation preparation for Ph.D. program students who have Molecular Biology and Biochemistry as a discipline.

Prerequisites: Consent of instructor.