

# MOL - Molecular Biology

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## Molecular Biology: MOL

### Lower-Division Courses

### Upper-Division Courses

### Graduate Courses

#### **MOL 380. Advanced Readings in Molecular Biology.**

Individual instruction in the literature of molecular biology. Individual instruction. May be repeated for credit. Prerequisite: Graduate standing and consent of instructor.

#### **MOL 080M. Dual MD/PhD Program with UT Medical Branch.**

Preclinical medical study at the University of Texas Medical Branch at Galveston. May not be taken concurrently with another course at the University of Texas at Austin. Prerequisite: Graduate standing and admission to the MD/PhD dual degree program in cell and molecular biology.

#### **MOL 190C, 290C, 390C. Seminar in Molecular Biology.**

Lectures and discussions on current topics in molecular biology. One, two, or three lecture hours a week for one semester. May be repeated for credit when the topics vary. Prerequisite: Graduate standing and consent of instructor.

**Topic 1: Seminar in Molecular Biology I.** Students read, present, and discuss current research papers based on speakers for the Institute for Cellular and Molecular Biology weekly seminar series. Students also will present short talks on their the research from one of their laboratory rotations.

**Topic 2: Seminar in Molecular Biology II.** Students write a mock grant proposal with their principle investigator and present a practice part one preliminary exam talk based on the proposal.

**Topic 3: Seminar in Molecular Biology III.** Students present a detailed seminar on their thesis research.

#### **MOL 192, 292, 392, 492, 592, 692, 792, 892, 992. Research Problems.**

One lecture hour a week for one semester, with additional laboratory hours. May be repeated for credit. Prerequisite: Graduate standing and consent of instructor and the graduate adviser.

#### **MOL 195. Molecular Biology Conference Course.**

Conference course. May be repeated for credit. Prerequisite: Graduate standing and consent of instructor.

#### **MOL 395F. Genetics.**

Same as Biology 395F and Chemistry 395F. Basic principles of Mendelian and molecular genetics, and an exploration of the genetic toolbox using examples of analytic methods and modern manipulations. Focus on the genetic analysis of model organisms. Use of genetic tools in dissecting complex biological pathways, developmental processes, and regulatory systems. Three lecture hours a week for one semester. Prerequisite: Graduate standing. An introductory course in genetics, such as Biology 325, is strongly recommended.

#### **MOL 395G. Structure and Function of Proteins and Membranes.**

Same as Biochemistry 395G and Biology 395G. Explore advanced biochemistry concepts and the scientific process. Examine a detailed consideration of the structure and function of proteins, carbohydrates, lipids and nucleic acids, as well as discussion of enzyme mechanisms and kinetics. Three lecture hours a week for one semester. Only one

of the following may be counted: Biochemistry 395F, 395G, Biology 395I, 395G, Molecular Biology 395I, 395G. Prerequisite: Graduate standing; a one-year undergraduate sequence in biochemistry is strongly recommended.

#### **MOL 395H. Cell Biology.**

Same as Biology 395H and Chemistry 395H. Detailed consideration of mechanisms of growth control, cell cycle regulation, mitosis, cell signaling, protein targeting, and the integration of these processes. Three lecture hours a week for one semester. Prerequisite: Graduate standing; and consent of instructor or Biology 395F and 395G, Chemistry 395F, Molecular Biology 395F and 395G.

#### **MOL 395I. Advanced Biochemistry.**

Same as Biochemistry 395F and Biology 395I. Explore advanced biochemistry concepts and the scientific process. Consider the structure and function of proteins, carbohydrates, lipids and nucleic acids, and discuss enzyme mechanisms and kinetics. Three lecture hours a week for one semester. Only one of the following may be counted: Biochemistry 395F, 395G, Biology 395I, 395G, Molecular Biology 395I, 395G. Prerequisite: Graduate standing; a one-year undergraduate sequence in biochemistry is strongly recommended.

#### **MOL 395J. Genes, Genomes, and Gene Expression.**

Same as Biochemistry 395J and Biology 395J. Detailed consideration of prokaryotic and eukaryotic mechanisms of DNA replication and transcription; posttranscriptional processing of transcription products; and mechanism and regulation of the translation of messenger RNAs. Three lecture hours a week for one semester. Only one of the following may be counted: Biochemistry 395J, Biology 395J, Molecular Biology 395J. Prerequisite: Graduate standing; and Biology 395F and 395G, or Chemistry 395F and 395G, or Molecular Biology 395F and 395G, or consent of instructor.

#### **MOL 698. Thesis.**

The equivalent of three lecture hours a week for two semesters. Offered on the credit/no credit basis only. Prerequisite: For 698A, graduate standing in molecular biology and consent of the graduate adviser; for 698B, Molecular Biology 698A.

#### **MOL 398T. Supervised Teaching in Molecular Biology.**

Teaching under close supervision of the instructor; weekly laboratory instruction of undergraduates, group meetings with the instructor, individual consultations, and reports throughout the teaching period. Three lecture hours a week for one semester. Prerequisite: Graduate standing in molecular biology.

#### **MOL 399W, 699W, 999W. Dissertation.**

May be repeated for credit. Offered on the credit/no credit basis only. Prerequisite: Admission to candidacy for the doctoral degree.

## Professional Courses