

MEDICINAL-BIOLOGICAL CHEMISTRY (MBC)

MBC 5100 Ethical Conduct Research

[1 credit hour]

Consideration of the scientific, ethical and legal obligations of the graduate student researcher.

Term Offered: Spring, Summer

MBC 5310 Medicinal Chemistry I: Drug Action And Design

[2 credit hours]

An introductory course presenting the basic chemical principles governing the behavior of drugs and the design of new therapeutics.

Prerequisites: CHEM 2420 with a minimum grade of D-

Term Offered: Fall

MBC 5380 Medicinal And Poisonous Plants

[3 credit hours]

Lecture/field course examining medicinal and harmful properties of herbals and plants using pharmacognosy, clinical trials and local plant examples.

Term Offered: Summer

MBC 5550 Physiological Chemistry I: Structure And Function Of Biological Macromolecules

[3 credit hours]

An examination of the levels of structure of proteins, nucleic acids, other biomolecules and biomolecular assemblies.

Term Offered: Fall

MBC 5552 Physiological Chemistry II Cellular Metabolism and Homeostasis

[2 credit hours]

An examination of the chemistry and regulation of metabolic processes in cells, interacting cells and tissues.

Prerequisites: MBC 3550 with a minimum grade of D- or MBC 5550 with a minimum grade of D-

Term Offered: Spring

MBC 5620 Biochemical Techniques

[2 credit hours]

A detailed study of biochemical laboratory techniques necessary for the development of novel therapeutics, including bioassays and data analysis.

Term Offered: Fall

MBC 5860 Microbiology for Pharmaceutical Professionals

[2 credit hours]

This is a lecture and laboratory course with emphasis on microorganisms that cause disease. Special attention will be paid to structures and mechanisms present in microorganisms that can be exploited to inhibit the growth and survival of these organisms in a human host.

Prerequisites: MBC 3550 with a minimum grade of D- or MBC 5550 with a minimum grade of D-

Term Offered: Spring

MBC 5900 Medicinal Chemistry Seminar

[1 credit hour]

Presentation and discussion of advanced research topics in medicinal chemistry, with an emphasis on evaluating and criticizing emerging data as a way of testing hypotheses.

Term Offered: Spring, Summer, Fall

MBC 6100 Advanced Immunology

[2 credit hours]

Readings in and critical analysis of the recent literature in immunology and basic immunologic responses, especially as considered in immunotherapy.

Term Offered: Spring, Fall

MBC 6190 Advanced Medicinal Chemistry

[4 credit hours]

Discussion of the qualitative and quantitative aspects of the design of new therapeutic agents. Approaches to the design of drugs and new therapeutic modalities directed at enzymes, receptors, membrane transport proteins and nucleic acids are examined.

Term Offered: Fall

MBC 6200 Biomedical Chemistry

[4 credit hours]

Examination of the primary literature on approaches to the design of new therapeutic agents. Recent novel directions in the design of drugs will be examined and compared.

Prerequisites: MBC 6190 with a minimum grade of D-

Term Offered: Spring

MBC 6300 Biomedical Chemistry Laboratory I

[1 credit hour]

Experimental research problems in biomedical chemistry.

Prerequisites: (MBC 6190 with a minimum grade of D- and MBC 6550 with a minimum grade of D-)

Term Offered: Spring, Fall

MBC 6310 Biomedical Chemistry Laboratory II

[3 credit hours]

Additional experimental research problems in biomedical chemistry (see MBC 6300/8300).

Prerequisites: (MBC 6190 with a minimum grade of D- and MBC 6550 with a minimum grade of D-)

Term Offered: Spring, Summer, Fall

MBC 6400 Cannabis Science: Plants and Products

[3 credit hours]

CS Plants & Products considers in-depth the growth of Cannabis sativa and its subspecies as well as the production and physical properties of both chemical and consumer products derived from them. Examining the factors, procedures, and techniques that make for optimal medicinal and recreational outcomes, the course is designed for learners with diverse backgrounds, interests, and intents

Term Offered: Spring, Summer, Fall

MBC 6420 Protein Chemistry

[4 credit hours]

A detailed analysis of the structure and function of proteins: current methodology for the analysis of structure, the basis for molecular associations, and relationships between structure and biological function.

Prerequisites: MBC 6550 with a minimum grade of D-

MBC 6430 Nucleic Acid Chemistry

[4 credit hours]

The chemical basis for storage and transmission of genetic information.

Prerequisites: MBC 6550 with a minimum grade of D-**MBC 6440 Enzymology**

[4 credit hours]

The principles of chemical catalysis applied to molecular enzymology.

MBC 6450 Advanced Synthetic and Medicinal Chemistry

[2 credit hours]

Readings in and critical analysis of recent literature in synthetic and medicinal chemistry research.

Term Offered: Spring, Fall**MBC 6550 Biochemistry**

[4 credit hours]

A consideration of the structure and function of biological macromolecules as well as the basic and regulated metabolism of cells.

Term Offered: Fall**MBC 6960 M.s. Thesis Research In Medicinal Chemistry**

[1-15 credit hours]

Development and pursuit of research leading to an M.S. thesis in medicinal chemistry.

Term Offered: Spring, Summer, Fall**MBC 6980 Special Topics In Biomedical Chemistry**

[1-5 credit hours]

Selected study of topics in medicinal chemistry. New chemical and biochemical strategies in drug design are examined in detail.

Term Offered: Spring, Summer, Fall**MBC 7100 Ethical Conduct of Research**

[1 credit hour]

Consideration of the scientific, ethical and legal obligations of the graduate student researcher.

Term Offered: Spring, Summer**MBC 7620 Biochemical Techniques**

[2 credit hours]

A detailed study of biochemical laboratory techniques necessary for the development of novel therapeutics, including bioassays and data analysis.

Term Offered: Fall**MBC 7900 Medicinal Chemistry Seminar**

[1 credit hour]

Presentation and discussion of advanced research topics in medicinal chemistry, with an emphasis on evaluating and criticizing emerging data as a way of testing hypotheses.

Term Offered: Spring, Summer, Fall**MBC 8100 Advanced Immunology**

[2 credit hours]

Readings in and critical analysis of the recent literature in immunology and basic immunologic responses, especially as considered in immunotherapy.

Term Offered: Spring, Fall**MBC 8190 Advanced Medicinal Chemistry**

[4 credit hours]

Discussion of the qualitative and quantitative aspects of the design of new therapeutic agents. Approaches to the design of drugs and new therapeutic modalities directed at enzymes, receptors, membrane transport proteins and nucleic acids are examined.

Term Offered: Fall**MBC 8200 Biomedical Chemistry**

[4 credit hours]

Examination of the primary literature on approaches to the design of new therapeutic agents. Recent novel directions in the design of drugs will be examined and compared.

Prerequisites: MBC 8190 with a minimum grade of D-**Term Offered:** Spring**MBC 8300 Biomedical Chemistry Laboratory I**

[1 credit hour]

Experimental research problems in biomedical chemistry.

Prerequisites: (MBC 6190 with a minimum grade of D- and MBC 8550 with a minimum grade of D-)**Term Offered:** Spring, Fall**MBC 8310 Biomedical Chemistry Laboratory II**

[3 credit hours]

Additional experimental research problems in biomedical chemistry (see MBC 6300/8300).

Prerequisites: (MBC 6190 with a minimum grade of D- and MBC 8550 with a minimum grade of D-)**Term Offered:** Spring, Summer, Fall**MBC 8420 Protein Chemistry**

[4 credit hours]

A detailed analysis of the structure and function of proteins: current methodology for the analysis of structure, the basis for molecular associations, and relationships between structure and biological function.

MBC 8430 Nucleic Acid Chemistry

[4 credit hours]

The chemical basis for storage and transmission of genetic information.

MBC 8440 Enzymology

[4 credit hours]

The principles of chemical catalysis applied to molecular enzymology.

MBC 8450 Advanced Synthetic and Medicinal Chemistry

[2 credit hours]

Readings in and critical analysis of recent literature in synthetic and medicinal chemistry research.

Term Offered: Spring, Fall**MBC 8550 Biochemistry**

[4 credit hours]

A consideration of the structure and function of biological macromolecules as well as the basic and regulated metabolism of cells.

Term Offered: Fall**MBC 8960 Ph.D. Dissertation Research In Medicinal Chemistry**

[1-15 credit hours]

Development and pursuit of research leading to a Ph.D. dissertation in medicinal chemistry.

Term Offered: Spring, Summer, Fall

MBC 8980 Special Topics In Biomedical Chemistry

[1-5 credit hours]

Selected study of topics in medicinal chemistry. New chemical and biochemical strategies in drug design are examined in detail.

Term Offered: Spring, Summer, Fall