

# IBS - INTERDISCIPLINARY BIOMEDICAL SCIENCES

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## **IBS 7015 Interdisciplinary Cell and Molecular Biology Cr. 6**

The fundamental biochemistry, molecular biology, and function of eukaryotic cells. Includes study of the structure and purpose of the basic components of eukaryotic cells; how eukaryotic cells obtain and utilize energy, process information, and replicate or self-destruct; and examples of how specific cell types contribute to multicellular biological processes and systems in normal and disease states. Offered Fall.

**Restriction(s):** Enrollment is limited to Graduate level students; enrollment limited to students in the School of Medicine; enrollment limited to students in a Doctor of Philosophy degree.

## **IBS 7030 Functional Genomics and Systems Biology Cr. 2**

Exploration of several new technologies for determining gene function on a genome-wide scale and for integrating information into a systems-level view of biological processes. Offered Winter.

**Prerequisites:** IBS 7015 with a minimum grade of C and May be taken concurrently: IBS 7040 with a minimum grade of C or IBS 7050 with a minimum grade of C or IBS 7060 with a minimum grade of C or IBS 7090 with a minimum grade of C

**Restriction(s):** Enrollment is limited to Graduate level students; enrollment limited to students in the School of Medicine; enrollment limited to students in a Doctor of Philosophy degree.

**Equivalent:** MGG 7030

## **IBS 7050 Biomedical Neurobiology Cr. 2**

Sensory, motor, and integration of nervous systems, including anatomic and cellular organization, systemic and cellular-molecular functions, and diseases. Offered Winter.

**Prerequisites:** IBS 7015 with a minimum grade of C

**Restriction(s):** Enrollment is limited to Graduate level students; enrollment limited to students in the School of Medicine; enrollment limited to students in a Doctor of Philosophy degree.

## **IBS 7090 Biomedical Immunology Cr. 2**

Cellular-molecular and systemic functions, and diseases of the immune system. Offered Winter.

**Prerequisites:** IBS 7015 with a minimum grade of C

**Restriction(s):** Enrollment is limited to Graduate level students; enrollment limited to students in the School of Medicine; enrollment limited to students in a Doctor of Philosophy degree.

## **IBS 7100 Biomedical Neuropharmacology Cr. 2**

General principles, including cellular and molecular basis of drug action with special emphasis on neuronal systems. Offered Winter.

**Prerequisites:** IBS 7015 with a minimum grade of C

**Restriction(s):** Enrollment is limited to Graduate or Medical level students; enrollment limited to students in the School of Medicine.

## **IBS 7110 Introduction to the Business of Biotechnology Cr. 3**

Insights into interface between science and business, during the translation of basic biomedical discoveries into commercial and clinical practice. Offered Winter.

**Restriction(s):** Enrollment is limited to Graduate level students.

**Equivalent:** BMS 7100

## **IBS 7115 Special Topics in Biotechnology Commercialization Cr. 1**

Designed to provide practical experience in defining the relationships between academic discovery science and business development, with a focus on best practices for presenting basic research-commercial products to external, interested individuals. Offered Winter.

**Restriction(s):** Enrollment is limited to Graduate level students.

**Equivalent:** BMS 7115

## **IBS 7130 Systems Neuroscience: Structure and Function of the Nervous System Cr. 2**

Basic principles of neural science through examination of structure and function of the major physiological systems within the brain and spinal cord. Offered Winter.

**Prerequisites:** IBS 7015 with a minimum grade of C

**Restriction(s):** Enrollment is limited to Graduate or Medical level students; enrollment limited to students in the School of Medicine.

## **IBS 7140 Foundations of Computational Biology Cr. 3**

Introduction to basic concepts of linear algebra and their application to biomedical research data analysis. MATLAB programs are introduced and employed as the tool for practical implementation of computational methods. Offered Fall.

**Restriction(s):** Enrollment is limited to Graduate level students.

**Equivalent:** BMB 7140

## **IBS 7330 Advanced Molecular Biology Cr. 2**

Modern topics in biochemistry, including nucleic acid dynamics, genomic structure, DNA replication and repair, transcription, RNA processing, translation and protein synthesis. Offered Winter.

**Restriction(s):** Enrollment is limited to Graduate level students.