IBS - INTERDISCIPLINARY
BIOMEDICAL SCIENCES

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 a Doctor of Philosophy degree;
enrollment limited to students in the School of Medicine.

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.
Prerequisite: IBS 7015 with a minimum grade of C or MGG 7010 with a
minimum grade of C
Restriction(s): Enrollment is limited to Graduate level students;
enrollment limited to students in a Doctor of Philosophy degree;
enrollment limited to students in the School of Medicine.
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 a Doctor of Philosophy degree;
enrollment limited to students in the School of Medicine.

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 a Doctor of Philosophy degree;
enrollment limited to students in the School of Medicine.

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 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 Data Science Cr. 3
Introduction to basic concepts of linear algebra and their application
to data analysis. MATLAB and PYTHON programs are introduced and
employed as tools for practical implementation of computational
methods. Offered Fall.
Restriction(s): Enrollment is limited to Graduate level students.
Equivalent: BMB 7140

IBS 7320 Protein Structure and Function Cr. 3
Structure, function, and design of proteins: architecture, function,
regulation, assembly and evolution of proteins and protein complexes;
three-dimensional representation and techniques of kinetic analysis; newer techniques of protein
design and engineering. Offered Winter.
Restriction(s): Enrollment is limited to Graduate level students.
Equivalent: BMB 7320

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.