MBS-Multidisciplinary Biomedical Science

MBS 601. Molecular and Cell Biology. 4 Hours.
This course will provide a broad but rigorous overview of molecular biology. Cell structure between prokaryotes and eukaryotes will be compared and contrasted. DNA structure/organization will be discussed with respect to replication and repair mechanisms. Mendelian, non-Mendelian and chromosomal bases of genetics will also be discussed. Transcription and translation will be discussed in detail, along with their respective regulatory mechanisms. Throughout this course there will be a focus on intracellular organelles that contribute to the generation and regulation of DNA, RNA and protein. Finally, when possible, relevance to human disease will be presented and discussed.

MBS 602. Biochemistry and Cell Biology. 4 Hours.
This course will cover the structure, function and metabolism of biological macromolecules including proteins, carbohydrates, lipids and nucleotides. A rigorous overview of pathways will be discussed that are important for the effective metabolism of macromolecules (e.g. glycolysis, citric acid cycle) and generation of energy for cells. The last part of this course will discuss membrane structure and function, and will provide an overview of eukaryotic cell signaling.

MBS 603. General Human Physiology. 4 Hours.
This course begins with the study of basic cell function, then proceeds to a rigorous overview of specific human organ systems.

MBS 698. Non-Thesis Research. 1-6 Hour.
Students may perform independent study in a research laboratory setting. This work may contribute toward concentration credits subject to Program Director approval.

MBS 699. Thesis Research. 1-6 Hour.
Supervised independent research.
Prerequisites: GAC M