GBCH 4060  Topics in Pediatric Research (2)
GBCH 6010  Graduate Biochemistry (4)
GBCH 6020  Biochem & Molec Bio Seminar (1)
GBCH 6110  Basic Medical Biochemistry (3)
GBCH 7090  Seminar (1)
GBCH 7100  Seminar (1)
GBCH 7110  Selected Topics (1-4)
GBCH 7120  Special Problems (1-6)
GBCH 7130  Selected Topics (1-4)
GBCH 7140  Selected Topics (1-3)
GBCH 7150  Tutorial Topics (1-6)
GBCH 7160  Tutorial Topics (1-6)
GBCH 7170  Principles of Genetics (4)
GBCH 7180  Chromosome Instabil in Cancer (4)
GBCH 7190  Seminar Presentation (2)
GBCH 7220  Structure/Function Biomo (4)
GBCH 7230  Intro to Bioinformatics (3)
Prerequisite(s): GBCH 6010.

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GBCH 7250  Biomed Stats & Data Analysis (2)
GBCH 7330  Advanced Bioinformatics (3)
The goal of this course is to introduce foundational concepts, algorithms and applications of advanced bioinformatics, particularly machine learning and artificial intelligence (AI) in biomedical research. The major topics include machine learning, deep learning, and AI and their state-of-the-art applications in biomedicine. Students will acquire mathematical formulations and computer algorithms in regression modeling, data clustering and dimensionality reduction, data classifications (including deep learning), and reinforcement learning. Students will also gain detailed knowledge and hands-on experience in proteomics and develop programming skills in applying open-source software programs in analyzing and interpreting omics data. Prerequisite: A Biochemistry course.

GBCH 7500  Human Medical Cellular Biochem (5)
The objectives and content of the Human Medical Cellular Biochemistry course are designed to provide students with a comprehensive understanding of cellular structure and function, and the manner by which cellular processes are normally integrated and regulated. This course stresses both the normal cellular function, and why disease states occur if normal cellular processes are disrupted.

GBCH 7520  Metabol Biochem Human Disease (5)
GBCH 7540  Med Biochem Grand Rnds Externs (3)
GBCH 7550  Med Biochem Grand Rounds Exter (3)
GBCH 7560  Academic Writing & Critique (2)
GBCH 7570  Signal Transduction/Hormone Ac (2)
GBCH 7580  Methods in Biochemistry (2)
GBCH 7590  Cases Research Ethics (2)
GBCH 9980  Master's Research (0)
Course may be repeated up to unlimited credit hours.

Maximum Hours: 99
GBCH 9990 Dissertation Research (0)
Course may be repeated up to unlimited credit hours.

**Maximum Hours:** 99