GENOMICS AND BIOINFORMATICS (GENO)

Explanation of Course Numbers

- Courses in the 1000s are primarily introductory undergraduate courses
- Those in the 2000s to 4000s are upper-level undergraduate courses that can also be taken for graduate credit with permission and additional work assigned
- Those in the 6000s and 8000s are for master's, doctoral, and professional-level students
- The 6000s are open to advanced undergraduate students with approval of the instructor and the dean or advising office

GENO 6223. Bioinformatics. 2 Credits.
The application of bioinformatics concepts and methods through the use of molecular biology databases and tools, covering molecular evolution, and protein sequence, structural, functional analysis. Recommended background: Prior completion of an undergraduate course in biochemistry. Same As: BIOC 6223.

GENO 6236. Medical Genomics. 2 Credits.
The structure and function of genes and genomes; genomic theories, methods, and data analysis including bioinformatics and database mining. Same As: BIOC 6236.

GENO 6237. Proteomics and Biomarkers. 2 Credits.
Experimental proteomics, protein/proteome analysis, bioinformatics of proteomics, systems biology, and structural genomics. Prerequisite: GENO 6236. Recommended background: Prior completion of a course in bioinformatics or one related to computer science. Same As: BIOC 6237.

GENO 8231. Introduction to Genomics, Proteomics, and Bioinformatics. 3 Credits.
Implementation of genomics, proteomics and bioinformatics approaches to biological systems. Students must have completed a course in biochemistry and molecular biology prior to enrollment. Prerequisites: BMSC 8210 and BMSC 8212.

GENO 8232. Computational Biology and Bioinformatics: Principles and Practices. 3 Credits.
Introduction to computational biology as an interdisciplinary science in the 21st century, incl. the algorithmic and statistical principles of bioinformatics, as well as practical trainings in processing, modeling and analyzing multi-omics datasets. Restricted to Graduate students in biomedical sciences or related fields. Prerequisites: BIOC 6223, GENO 6223 or BIOC 6240.

GENO 8234. Genomics and Precision Medicine Seminar. 1 Credit.
Current and emerging topics with presentations and discussions facilitated by leading experts from GW and outside institutions; student-led journal club and oral presentation opportunities. May be repeated for credit. Prerequisites: BMSC 8210, BMSC 8212 and BMSC 8230.

GENO 8998. Advanced Readings and Research. 1-12 Credits.
May be repeated for credit. Restricted to doctoral candidates preparing for the qualifying examination.

GENO 8999. Dissertation Research. 3-12 Credits.
Restricted to doctoral candidates. May be repeated for credit.