DOCTOR OF PHILOSOPHY IN THE FIELD OF GENOMICS AND BIOINFORMATICS

The following requirements must be fulfilled:

The general requirements stated under Columbian College of Arts and Sciences, Graduate Programs (http://bulletin.gwu.edu/arts-sciences/#degreeregulationstext).

The requirements for the Doctor of Philosophy program (http://bulletin.gwu.edu/arts-sciences/#doctoraltext).

72 credits, including required core and elective courses. Successful completion of a grant-style qualifier examination is required for advancement to candidacy. In addition, students perform full-time research in faculty laboratories for the duration of their program. In GW laboratories, they are hired as paid research assistants/associates in the third year and beyond of the program.

Students are advised to complete up to 48 credits comprising required interdisciplinary core courses, required genomics core courses, electives, and advanced readings and research in the first two years of PhD study. Upon successful completion of a grant-style qualifier, students register for up to 24 credits of dissertation research through completion and successful oral defense of a written dissertation.

Code	Title	Credits
Required interdisciplinary core		
BMSC 8210	Genes to Cells	
BMSC 8212	Systems Physiology	
BMSC 8215	Lab Rotations	
BMSC 8216	Scientific Writing, Presentation Skills, and Seminar Planning	
BMSC 8217	Ethics and Grant Writing	
BMSC 8218	Career Options in the Biomedical Sciences	
BMSC 8230	Molecular Basis of Human Disease	
BMSC 8235	Applied Biostatistics for Basic Research	
Required genomics core		
GENO 8231		
Electives		
24 credits elective courses selected in consultation with graduate program advisor:		
ANAT 6130	Clinically Oriented Human Embryology	
ANAT 6150	Clinically Oriented Human Microscopic Anatomy	
ANAT 6160	Clinically Oriented Human Functional Neuroanatomy	
ANAT 6182	Fundamentals of Translational Science	
ANAT 6275	Advanced Studies in Translational Sciences	
BIOC 6240	Next Generation Sequencing	
BIOC 6242	Bioscience Big Data Statistics	
BIOC 6281	Topics	
BIOC 8225	Metabolism	
BIOC 8232	Molecular and Cellular Signaling	
BMSC 8219		
CANC 8221	The Basic Science of Oncology	
CANC 8222		
GENO 6223	Bioinformatics	
GENO 6236	Medical Genomics	
GENO 6237		
GENO 8234	Genomics and Precision Medicine Seminar	
GENO 8998	Advanced Readings and Research	
MICR 6292	Tropical Infectious Diseases	
MICR 8210	Infection and Immunity	
MICR 8230	Molecular and Cellular Immunology	
MICR 8270	Advanced Topics in Immunology	
NRSC 8284	Conceptual and Experimental Neuroscience	
PHAR 6116	Pharmacogenomics and Personalized Medicine	
PHAR 6205	Pharmacology	
PHAR 6206	Advanced Pharmacology	
PHAR 6322		
PHAR 8281		
PUBH 6276	Health Microbiology	

PUBH 6278	Public Health Virology
Dissertation research	
GENO 8999	Dissertation Research

Required courses may be waived at the discretion of the graduate program director based on written documentation of prior equivalent coursework. Any waiver increases the number of electives required, by the number of credits waived.