PHD PROGRAMS OF STUDY

GW Biomedical PhD Programs

2.1.2024

Year | Semester	CANCER BIOLOGY	GENOMICS & BIOINFORMATICS	MICROBIOLOGY & IMMUNOLOGY	NEUROSCIENCE	PHARMACOLOGY & PHYSIOLOGY
YEAR 1 — FALL *12 credits*	Required Core Courses: • BMSC 8210 Genes to Cells (3) • BMSC 8230 Molecular Basis of Human Disease (3) • BMSC 8212 Systems Physiology (3) • BMSC 8215 Lab Rotation (2) • BMSC 8216 Scientific Writing (1)				
YEAR 1 — SPRING *9 credits*	Required Core Courses: BMSC 8215 Lab Rotation (2) • BMSC 8217 Ethics & Grant Writing (1) Foundation Courses [recommended to select 2] Students must take the Foundation Course that corresponds to their selected PhD program, and are encouraged to take a second foundation that will count as an elective.				
	CANC 8221 Basic Science of Oncology (3)	GENO 8231 Intro to Genomics, Proteomics & Bioinformatics (3)	MICR 8210 Infection & Immunity (3)	NRSC 8284 Foundations of Experimental Neuroscience I (3)	PHAR 6116 Pharmacogenetics & Personalized Medicine (3)
	Electives [select 1-2] ANAT 6160 Clinically Oriented Human Neuroanatomy (3) • BIOC 6240 Next Generation Sequencing (2) • BIOC 6241 Single Cell Genomics (2) • Additional options possible with Program Director approval				
YEAR 1 — SUMMER *3-6 credits*	Required Core Courses: BMSC 8215 Lab Rotation (2) • BMSC 8218 Careers in Biomedical Sciences (1)				
					PHAR 8211 Physiology (3)
	Select your PhD program and mentor				
YEAR 2 — FALL *9 credits*	Core Course: BMSC 8235 Applied Biostatistics for Basic Research (2) Readings & Research: CANC • GENO • MICR • NRSC • PHAR 8998 (1-3) Seminar: CANC 8214 (1) • GENO 8234 (1) • MICR 8214 (1) • NRSC 8283 (2) • PHAR 8214 (1)				
	CANC 8222 Molecular Oncology & Cancer Epigenetics* (3)	GENO 6223 Bioinformatics* (2)	MICR 8230 Molecular & Cellular Immunology* (3)	Electives [select 2-3]	PHAR 6205 Pharmacology* (5)
	Electives [select 1-2] ANAT 6130 Clinically Oriented Human Embryology (3) • ANAT 6150 Clinically Oriented Human Microscopic Anatomy (4) • ANAT 6182 Fundamentals of Regenerative Biology and Systems Physiology (4) • ANAT 6275 Advanced Studies in Translational Sciences (3) • BIOC 6242 Bioscience Big Data Statistics (2) • MICR 6236 Fundamentals of Genomics I (3) • PUBH 6851 Intro to R (1) • PUBH 6852 Intro to Python (1) • PUBH 6276 Public Health Microbiology (3) • Courses marked with [*] above and required by one program can serve as electives for students in other programs • Additional options possible with Program Director approval				
YEAR 2 — SPRING *9 credits*	Readings & Research: CANC • GENO • MICR • NRSC • PHAR 8998 (1-3) Seminar: CANC 8214 (1) • GENO 8234 (1) • MICR 8214 (1) • NRSC 8283 (2) • PHAR 8214 (1)				
	CANC 8223 Cancer Immunology* (3)	GENO 6237 Proteomics & Biomarkers* (2) • GENO 8232 Comp Bio & Bioinformatics* (3)	Electives [select 2-3]	Electives [select 2-3]	PHAR 8281 Mol Pharm & Neurobio of Exc Tissues* (3)
	Electives [select 1-2]				Electives [select 1-2]
	ANAT 6160 Clinically Oriented Neuroanatomy (3) • BIOC 6240 Next Generation Sequencing (2) • BIOC 6281 Special Topics (1-2) • BIOC 6241 Single Cell Genomics (2) • BMSC 8219 Writing the Grant-Style Qualifier (2) • MICR 6237 Fundamentals of Genomics II (2) • MICR 6292 Tropical Infectious Disease (2) • MICR 8271 HIV Persistence, Comorbidities, and Treatment (2) • PHAR 6206 Adv Pharmacology (5) • PUBH 6851 Intro to R (1) • PUBH 6852 Intro to Python (1) • Courses marked with [*] above and required by one program can serve as electives for students in other programs • Additional options possible with Program Director approval				
YEAR 2 — SUMMER *3 credits*	BMSC 8220 Research Practicum (3) • *Complete a grant-style qualifying exam*				
YEAR 3+	For the third and subsequent years (up through final dissertation defense) register for 3 credits of CANC / GENO / MICR / NRSC / PHAR 8999 (Dissertation Research) per semester [Fall, Spring and Summer]. A total of 72 credit hours is required for the PhD degree.				