IGPBS - INTEGRATIVE PHYSIOLOGY & MOLECULAR MEDICINE (PHD AND MD/PHD)

Curriculum

Graduate Committee

Dr. Erika Boesen (Chair & Program Director), Dr. Hanjun Wang (Vice Chair), Dr. Lynda Harris, Dr. Mabruka Alfaidi, Dr. Kaushik Patel, and Anna Kosmach (student representative)

The IGPBS - Integrative Physiology & Molecular Medicine doctoral program provides diverse research and learning experiences that emphasize cellular and molecular processes underscoring coordinated integration of organ systems within the body, typically with a view to unraveling disease mechanisms.

PhD Curriculum

PhD students enrolled in IGPBS - Integrative Physiology & Molecular Medicine doctoral program must complete the following courses:

Code	Title	Credit Hours
Core Courses		
GRAD 800	RESPONSIBLE CONDUCT IN RESEARCH TRAINING *	0
IPBS 805	FUNDAMENTALS OF CELLULAR PROCESSES	3
IPBS 860	SUCCESS SKILLS FOR GRADUATE STUDENTS	1
IPMM 801	GRADUATE PHYSIOLOGY I *	4
IPMM 802	GRADUATE PHYSIOLOGY II *	3
IPMM 896	RESEARCH OTHER THAN THESIS (or IPBS 896)	1-9
IPMM 970	SEMINAR (each semester)	1
IPMM 999	DOCTORAL DISSERTATION	1-15
Elective (choose two of the following courses) *		
MEP 807	MEDICAL PHARMACOLOGY FOR THE PHYSIOLOGIST	3
MEP 916	MOLECULAR MECHANISMS OF CARDIOVASCULAR PATHOPHYSIOLOGY	3
IPMM 930	PHYSIOLOGY & PATHOPHYSIOLOGY OF THE KIDNEY	2
BISB 815	TOOLS AND ALGORITHMS IN BIOINFORMATICS	3
BMB 915	PROTEINS & NUCLEIC ACID	3
BMB 921	BIOPHYSICAL CHEMISTRY	3
BMB 975	CRITICAL THINKING AND APPLICATIONS IN BIOCHEMISTRY AND MOLECULAR BIOLOGY	3
CRGP 880	PRINCIPLES AND METHODOLOGIES IN CANCER RESEARCH	2-3
ENV 888	PRINCIPLES OF TOXICOLOGY	3
MGCB 912	MODERN APPROACHES IN CELL BIOLOGY & MOLECULAR GENETICS	3
MGCB 945	STEM CELL AND DEVELOPMENT BIOLOGY	2
NSC 820	METHODS IN NEUROSCIENCE	2
NSC 907	NEURAL SYSTEMS & THE PHYSIOLOGY OF NEURONAL CELL POPULATIONS	2
NSC 913	DATA SCIENCE FOR BIOMEDICAL RESEARCHERS	2
NSC 922	MOLECULAR & CELLULAR NEUROSCIENCE	3
NSC 930	NEUROIMMUNOLOGY	3
NSC 932	SYSTEMS NEUROSCIENCE	3
PHSC 904	DELIVERY AND BIOCOMPATABILITY OF PROTEIN AND NUCLEIC ACID DRUGS	3
PMI 857	INTRODUCTORY IMMUNOLOGY	2
PMI 922	REDOX BIOLOGY IN HUMAN DISEASE	2
PMI 940	MOLECULAR BASIS OF DISEASE	3
PMI 955	ADVANCED IMMUNOLOGY	3
PHSC 910	PHARMACOKINETICS AND BIOPHARMACEUTICS	3
PHSC 950	ADVANCED TOXICOLOGY	3
PHAR 901	RECEPTOR & CELL SIGNALING	3
PHAR 912	HUMAN SPECIFIC DISEASE MODELING IN MICE	2

***Indicates course must be completed prior to Comprehensive Exam**

MD/PhD Curriculum

Upon successfully completing Phase 1 of the College of Medicine curriculum, the requirements for completing **IPBS 805, IPBS 860, IPMM 801,** and **IPMM 802** will be waived. Hence, MD/PhD students in IGPBS - Integrative Physiology & Molecular Medicine must complete only the following courses:

Code	Title	Credit Hours
Required Courses:		
GRAD 800	RESPONSIBLE CONDUCT IN RESEARCH TRAINING *	0
IPMM 970	SEMINAR	1
IPMM 999	DOCTORAL DISSERTATION	1-15
Elective (choose one of the following courses)*		
MEP 807	MEDICAL PHARMACOLOGY FOR THE PHYSIOLOGIST	3
MEP 916	MOLECULAR MECHANISMS OF CARDIOVASCULAR PATHOPHYSIOLOGY	3
IPMM 930	PHYSIOLOGY & PATHOPHYSIOLOGY OF THE KIDNEY	2
BISB 815	TOOLS AND ALGORITHMS IN BIOINFORMATICS	3
BMB 915	PROTEINS & NUCLEIC ACID	3
BMB 921	BIOPHYSICAL CHEMISTRY	3
BMB 975	CRITICAL THINKING AND APPLICATIONS IN BIOCHEMISTRY AND MOLECULAR BIOLOGY	3
CRGP 880	PRINCIPLES AND METHODOLOGIES IN CANCER RESEARCH	2-3

ENV 888	PRINCIPLES OF TOXICOLOGY	3
MGCB 912	MODERN APPROACHES IN CELL BIOLOGY & MOLECULAR GENETICS	3
MGCB 945	STEM CELL AND DEVELOPMENT BIOLOGY	2
NSC 820	METHODS IN NEUROSCIENCE	2
NSC 907	NEURAL SYSTEMS & THE PHYSIOLOGY OF NEURONAL CELL POPULATIONS	2
NSC 922	MOLECULAR & CELLULAR NEUROSCIENCE	3
NSC 930	NEUROIMMUNOLOGY	3
NSC 932	SYSTEMS NEUROSCIENCE	3
PMI 857	INTRODUCTORY IMMUNOLOGY	2
PMI 922	REDOX BIOLOGY IN HUMAN DISEASE	2
PMI 940	MOLECULAR BASIS OF DISEASE	3
PMI 955	ADVANCED IMMUNOLOGY	3
PHSC 904	DELIVERY AND BIOCOMPATABILITY OF PROTEIN AND NUCLEIC ACID DRUGS	3
PHSC 910	PHARMACOKINETICS AND BIOPHARMACEUTICS	3
PHSC 950	ADVANCED TOXICOLOGY	3
PHAR 901	RECEPTOR & CELL SIGNALING	3
PHAR 912	HUMAN SPECIFIC DISEASE MODELING IN MICE	2

***Indicates course must be completed prior to Comprehensive Exam**