

## **Physiology and Pharmacology Discipline Curriculum**

### **A. Required Courses**

IBMS	5000	Fundamentals of Biomedical Sciences (required for all GSBS students)
IBMS	5008	IMGP Laboratory Rotations
PHAR	5013	Principles of Pharmacology
PHAR	5020	Basics of Research Design
PHAR	5023	Drug Discovery and Development
PHYL	5028	Fundamentals of Physiology
TSCI	5070	Responsible Conduct of Research
CSAT	5095	Experimental Design & Analysis (Statistics)
PHAR	5092	Research Practicum
IBMS	6090-8PP	Departmental Seminar (Physiology and/or Pharmacology departmental seminars)
IBMS	7010-8PP	Student Journal Club and Research Presentations
IBMS	7001-8PP	Qualifying Exam
IBMS	6097-8PP	Research
IBMS	7099-8PP	Dissertation
CSAT	6005	Rigor & Reproducibility

### **B. Electives (must take at least 4 hrs. and can include any courses offered at the UTHSCSA)**

#### **Frequent options include:**

INTD	5040	Fundamentals of Neuroscience I: Molecular, Cellular, Developmental
INTD	5043	Fundamentals of Neuroscience II: Systems
INTD	7074	Topics in Translational Medical Product Development
PHAR	5091	Micro electives (Seminar-style specialized courses)
	5091-1	Monoaminergic Neurotransmission and Transporters
	5091-2	Drug Discovery: Nuts & Bolts
	5091-3	Historical Perspectives of Receptor Theory
	5091-6	Serotonin- Soup to Nuts
	5091-8	Neural Substrates of Regulated Behaviors
	5091-10	Appetite Control: Adiposity Hormones & Neuropeptides
	5091-11	Fundamentals of Behavioral Pharmacology
	5091-18	G protein-coupled receptor heteromers: pharmacological and physiological relevance
PHYL	5041	Excitable Membranes
	5030	Biology of Pain
	6091	Selected Topics
	6091-2	Calcium Signaling
	6091-3	Cell Biology in Neural Science
	6091-7	Ion Channels in Disease
BIOC	5091	Special Topics in Biochemistry
BIOC	6035	Biochemistry of Multimolecular Complexes

BIOC	6010	Gene Expression
BIOC	6043	Structure and Function of Membrane Proteins
BIOC	6033	Cellular Signaling Mechanisms
CSBL	6048	Biology of Aging
CSBL	6021	Animal Models
CSBL	6064	Genetics
CSBL	6020	Concepts in Vertebrate Development
PHAR	7003	Electrophysiology in Neuroscience Research
PHAR	6027	Fundamentals of Neuroethics
PHAR	7002	Bridging the Gap from Bench to Bedside: Pharmacology Clinical Practicum

**We will offer the following modules as electives for other disciplines:**

PHAR 5021 - Autonomic Control and Therapeutics (0.5 SCH)

**Physiology and Pharmacology Discipline Plan of Study**

**Year 1:**

**Fall semester**

IBMS 5000 - Fundamentals of Biomedical Sciences (required for all GSBS students)	8.0 SCH
TSCI 5070 - Responsible Conduct of Research	2.0 SCH
IBMS 5008 - Laboratory Rotations (3 rotations, 5 weeks each)	3.0 SCH

**TOTAL 13.0 SCH**

**Spring semester**

PHAR 5013 – Principles of Pharmacology	3.0 SCH
CSAT 5095 – Experimental Design and Data Analysis (Statistics)	3.0 SCH
IBMS 7010-8PP – Student Journal Club and Research Presentations.	1.0 SCH
IBMS 6090-8PP – Pharmacology and/or Physiology Departmental Seminars	1.5 SCH
IBMS 6097-8PP – Research	Variable
*ELECTIVE COURSES FROM PHYS/PHARM or OTHER DISCIPLINES	Variable

**TOTAL 12.0 SCH**

**Year 2:**

**Fall semester**

PHAR 5020 – Basics of Research Design	2.0 SCH
PHAR 5023 – Drug Discovery and Development	2.5 SCH
PHYL 5028 – Fundamentals of Physiology	2.0 SCH
PHAR 5092 – Research Practicum	1.0 SCH
CSAT 6005 – Rigor & Reproducibility	1.0 SCH
IBMS 7010-8PP – Student Journal Club and Research Presentations.	1.0 SCH
IBMS 6090-8PP – Pharmacology and/or Physiology Departmental Seminars	1.5 SCH

IBMS 6097-8PP – Research	Variable
*ELECTIVE COURSES FROM PHYS/PHARM or OTHER DISCIPLINES	Variable
	<b>TOTAL 12.0 SCH</b>

**Spring semester**

IBMS 7010-8PP – Student Journal Club and Research Presentations.	1.0 SCH
IBMS 6090-8PP – Pharmacology and/or Physiology Departmental Seminars	1.5 SCH
IBMS 7001-8PP - Qualifying Exam	1.0 SCH
IBMS 6097-8PP – Research	Variable
*ELECTIVE COURSES FROM PHYS/PHARM or OTHER DISCIPLINES	Variable
	<b>TOTAL 12.0 SCH</b>

**Years 3 through completion ~ each semester:**

IBMS 7010-8PP – Student Journal Club and Research Presentations.	1.0 SCH
IBMS 6090-8PP – Pharmacology and/or Physiology Departmental Seminars	1.5 SCH
IBMS 6097-8PP – Research	Variable
**IBMS 7099-8PP – Dissertation	Variable
*ELECTIVE COURSES FROM PHYS/PHARM or OTHER DISCIPLINES	Variable
	<b>TOTAL 12.0 SCH</b>

\*Since different electives vary in credit hours, research credit hours for a given semester should be adjusted in order to maintain a total of 12 credit hours for the semester.

\*\*A minimum of 2 semesters of IBMS 7099-8PP (Dissertation) is required for graduation. A student may begin enrolling in IBMS 7099-8PP once the Dissertation Research Proposal and the Dissertation Supervising Committee membership are approved by the GSBS Dean. Final hours (3.0 SCH) may be applicable for the final semester.