

# BIOMEDICAL SCIENCES, PHD WITH PHARMACOLOGY CONCENTRATION

## Overview

In the first two semesters, all students take the identical core curriculum, described below. In conjunction with the course work in the first year, students rotate in 8-week blocks through three of the Program's participating research laboratories of the student's choice. This allows students to become more familiar with BMS research and faculty. Students should choose a Dissertation Advisor by the end of the second semester.

After completion of the core curriculum, students who choose a dissertation advisor in the Department of Pharmacology have the option to specialize in a pharmacology research emphasis by choosing the Pharmacology Track. To earn a Concentration in Pharmacology, students will complete 25 credit hours of pharmacology-focused coursework, for a total of 52 credit hours for degree.

## Requirements

Students who choose to earn a Concentration in Pharmacology will complete 27 credit hours of BMS core curriculum in their first year of study. In year 2, students will complete 25 credit hours of pharmacology-focused coursework.

Year 1			Credit Hours
<b>Fall</b>			
BMSP 6070	Advanced Cell Biology		3
GBCH 6010	Graduate Biochemistry		4
BMSP 7120	Research Topics and Rotations		4
BMSP 7140	Biomedical Sci Seminar		1
BMSP 7100	Biomed Sciences Workshop		1
<b>Credit Hours</b>			<b>13</b>
<b>Spring</b>			
GBCH 7250	Biomedical Statistics and Data Analysis		2
EPID 7810	Human Molecular Genetics		3
BMSP 7130	Research Topics and Rotations		4
BMSP 7770 or BIML 7500	Physiological Basis of Disease or Genomic Sequence and Omics Data Analysis		3
BMSP 7150	Seminar		1
BMSP 7110	Workshop		1
<b>Credit Hours</b>			<b>14</b>
<b>Summer Session 1</b>			
BMSP 9990	Dissertation Research		0
<b>Credit Hours</b>			<b>0</b>
<b>Year 2</b>			
<b>Fall</b>			
GPHR 7210	Pharm Advances		1
GPHR 7250	Medical Pharmacology (Requires concurrent registration for GPHR 7190 or prior completion of the Medical Physiology course)		6
GPHR 7190	Pharmacology Seminar		1
GPHR 7055	Practicing Professionalism		1
GPHR 7230	Principles of Pharmacol		3
<b>Credit Hours</b>			<b>12</b>
<b>Spring</b>			
GPHR 7220	Adv In Pharmacology		1
GPHR 7260	Medical Pharmacology		4
GPHR 7240	Principles of Pharmacol		2
GPHR 7055	Practicing Professionalism		1
GPHR 7200	Seminar Pharmacology		1

GPHR 7510	Pharmacological Lab Research (This provides PhD students with time to develop and work on their intended thesis research topic, and spend time in their thesis advisor's lab during the Spring semester)	2
Thematic Course (choose one)		2
GPHR 7040	Neuropharmacology	
GPHR 7050	Cellular Control Mechanm	
GPHR 7060	Endocrine Pharmacology	
<b>Credit Hours</b>		<b>13</b>
<b>Year 3</b>		
<b>Fall</b>		
GPHR 9990	Dissertation Research	0
<b>Credit Hours</b>		<b>0</b>
<b>Spring</b>		
GPHR 9990	Dissertation Research	0
<b>Credit Hours</b>		<b>0</b>
<b>Year 4</b>		
<b>Fall</b>		
GPHR 9990	Dissertation Research	0
<b>Credit Hours</b>		<b>0</b>
<b>Spring</b>		
GPHR 9990	Dissertation Research	0
<b>Credit Hours</b>		<b>0</b>
<b>Year 5</b>		
<b>Fall</b>		
GPHR 9990	Dissertation Research	0
<b>Credit Hours</b>		<b>0</b>
<b>Spring</b>		
GPHR 9990	Dissertation Research	0
<b>Credit Hours</b>		<b>0</b>
<b>Total Credit Hours</b>		<b>52</b>

## Appendix

### PhD Dissertation Research Seminars

Each graduate student working for the Ph.D. degree will be required to present 2 seminars related to his/her thesis problem to the staff and students as a part of the regular departmental seminar series.

#### Seminar I

A review of the pertinent background literature and an outline of the research problem. A design of the proposed work and how the results may fit in with the hypothesis which serves as the basis for the thesis. This seminar must be given prior to a student's submission of their doctoral prospectus.

#### Seminar II

A presentation of the major points included in the thesis after most of the research data has been accumulated and the thesis is almost completed. This seminar should typically be given within a few months before the final defense.

#### Attendance

Attendance at all graduate lectures, exams, small group sessions, advances in pharmacology & departmental seminars is mandatory. If for some reason you are unable to attend a required class or session, you must obtain an excused absence from the Director of Graduate Studies (Dr. Clarkson). An official excuse is defined as:

1. personal illness (verification may be required)
2. family emergency such as a serious illness or death in the immediate family
3. sanctioned events such as the annual BMS retreat, BMS Research Day presentation, or attending a scientific meeting.

An excuse for any other event must first be pre-approved by the Department Chair or Director of Graduate Studies.