

**Courses of the PhD in the Pharmaceutical Sciences Program**  
**MOLECULAR PHARMACOLOGY AND PHARMACOGENOMICS TRACK**

The Molecular Pharmacology and Pharmacogenomics track focus on the integration of biochemistry and genetics with pharmacology and pharmacokinetics. The focus will be on the investigation and understanding of the underlying molecular mechanisms of diseases, to be able to design new treatment strategies. This will include the application of pharmacogenetic and pharmacogenomic principles, which are the basis for the development of the upcoming field of personalized medicine. This track is directed towards students that are interested in understanding underlying principals of diseases and/or investigate direct clinical applications based on genetic predisposition of the patients.

**FIRST YEAR**

<b>FIRST SEMESTER</b>		<b>SECOND SEMESTER</b>	
<i>Course</i>	<i>Credits</i>	<i>Course</i>	<i>Credits</i>
PHSC 8516 Principles of Pharmaceutical Sciences	3	PHSC 8338 Business, Quality and Project Management	3
PHSC 8236 Applied Biostatistics	3	PHSC 8116 Advanced Instrumental Analysis	3
PHSC 8447 Principles of Drug Discovery and Development	3	PHSC 8335 Ethics in Research	2
PHSC 8425 Laboratory Rotation	1	PHSC 8601 Research	3
PHSC 8602 Seminar I	1	PHSC 8602 Seminar II	1
<b>Total Credits</b>	<b>11</b>	<b>Total Credits</b>	<b>12</b>

**SECOND YEAR**

<b>FIRST SEMESTER</b>		<b>SECOND SEMESTER</b>	
<i>Course</i>	<i>Credits</i>	<i>Course</i>	<i>Credits</i>
PHSC 8131 Advanced Pharmacology I	3	PHSC 8132 Advanced Pharmacology II	3
PHSC 8127 Advanced Molecular Biochemistry	3	PHSC 8437 Pharmacogenomics/Pharmacogenetics	3
PHSC 8602 Seminar III	1	PHSC 8602 Seminar IV	1
PHSC 8600 Principles of Research Design	2	PHSC 8601 Research	3
PHSC 8601 Research	3	Elective	3
<b>Total Credits</b>	<b>12</b>	<b>Total Credits</b>	<b>13</b>

**THIRD YEAR**

<b>FIRST SEMESTER</b>		<b>SECOND SEMESTER</b>	
<i>Course</i>	<i>Credits</i>	<i>Course</i>	<i>Credits</i>
PHSC 8601 Research	3	PHSC 8601 Research	3
<b>Total Credits</b>	<b>3</b>	<b>Total Credits</b>	<b>3</b>

**FOURTH YEAR**

<b>FIRST SEMESTER</b>		<b>SECOND SEMESTER</b>	
<i>Course</i>	<i>Credits</i>	<i>Course</i>	<i>Credits</i>
PHSC 8601 Research	3	PHSC XXXX Thesis	3
<b>Total Credits</b>	<b>3</b>	<b>Total Credits</b>	<b>3</b>