

MOLECULAR PHARMACOLOGY AND THERAPEUTICS (MS)

The Master of Science in Molecular Pharmacology and Therapeutics is a research intensive program designed to graduate students with a broad base of knowledge in the biomedical sciences and a more focused understanding of pharmacology. The goal of our graduate program is to prepare students for advanced training in the biomedical sciences, academia, the pharmaceutical industry, or consulting.

Curriculum

Required Coursework

The Master of Science in Molecular Pharmacology and Therapeutics requires 30 credit hours of coursework and a master's thesis.

Code	Title	Hours
BMSC 402	Statistical Methods for Biomedical Science	3
BMSC 405	Ethics in Biomedical Sciences	1
BMSC 410	Biochemistry and Molecular Biology	4
BMSC 412	Cell Biology	4
BMSC 416	Methods Biomedical Science	1
BMSC 418	Presentation skills	1
PHAR 409	Principles of Pharmacology	3
<i>Select 2 Electives</i>		6
PHAR 407	Fundamentals of Drug Discovery and Development	
PHAR 410	Signal Transduction	
PHAR 415	Current Topics in Pharmacology and Epidemiology of Disease	
PHAR 408	Molecular Basis of Disease and Therapeutics	
PHAR 420	Pharmacovigilance: A Practical Approach	
PHAR 405	Pharmacology Journal Club	1
PHAR 499	Research	6
PHAR 595	Thesis Supervision	0
Total Hours		30

Graduate & Professional Standards and Regulations

Students in graduate and professional programs can find their Academic Policies in Graduate and Professional Academic Standards and Regulations (<https://catalog.luc.edu/graduate-professional-academic-standards-regulations/>) under their school. Any additional University Policies supercede school policies.

Learning Outcomes

Upon completion of this program, students will be able to:

- Demonstrate a general knowledge base in the biomedical sciences with an understanding of fundamental biochemical, molecular, and cellular processes and common biomedical research methods.
- Demonstrate an understanding of the molecular, cellular, and physiological mechanisms underlying the pathophysiological changes that occur in disease etiology and describe how targeting these mechanisms with drug(s) can act to effectively treat the disease.

- Understand, assess, and draw conclusions from published research.
- Describe various approaches by which new drugs are discovered and developed and the process by which drugs are approved for clinical use.
- Propose original biomedical research by forming an hypotheses, designing experiments, critically evaluating experimental results, interpreting data, and drawing appropriate conclusions.
- Design and effectively present scientific presentations, write scientific papers and grants.
- Articulate and discuss ethical aspects in drug development and pharmacovigilance, including, but not limited to, animal use, clinical trials, intellectual property, benefit-risk analysis, and research design and integrity.