

# PHARMACOLOGY/BUSINESS (MS/MBA)

The Department of Molecular Pharmacology & Neuroscience and the Loyola University Chicago Quinlan School of Business offer full time 2.5-year and part-time 4-year dual degree programs leading to a Master of Science (MS) in Pharmacology degree and a Master of Business Administration (MBA) degree. This program is especially designed for individuals who are planning a career in the pharmaceutical, biotechnology, or other health-related industries. The ability of our graduates to understand both the science and business aspects of developing and marketing a new product or therapy gives them a competitive advantage in obtaining a position in industry and advancing their careers. This dual degree program also allows students to earn the two degrees in a shorter period of time than completing each one separately.

## Related Programs

### Master's

- Molecular Pharmacology and Therapeutics (MS) (<https://catalog.luc.edu/graduate-professional/graduate-school/health-sciences/biomedical-sciences/molecular-pharmacology-therapeutics-ms/>)

### Doctoral

- Molecular Pharmacology and Therapeutics (PhD) (<https://catalog.luc.edu/graduate-professional/graduate-school/health-sciences/biomedical-sciences/molecular-pharmacology-therapeutics-phd/>)

### Certificate

- Pharmacovigilance Certificate (<https://catalog.luc.edu/graduate-professional/graduate-school/health-sciences/biomedical-sciences/pharmacovigilance-certificate/>)

## Curriculum

### Master of Science in Pharmacology/MBA Dual Degree Curriculum

The Master of Science in Pharmacology requires 30 credit hours. Because three of these are shared with the MBA curriculum, students are required to fulfill 27 credit hours in the Pharmacology MS program and 39 credit hours for the MBA program.

### Required Coursework

Code	Title	Hours
<b>MS Pharmacology Requirements</b>		
BMSC 402	Statistical Methods for Biomedical Science	3
BMSC 410	Biochemistry and Molecular Biology	4
BMSC 412	Cell Biology	4
BMSC 416	Methods Biomedical Science	1
PHAR 405	Pharmacology Journal Club (taken twice)	1
PHAR 407	Fundamentals of Drug Discovery and Development	3
PHAR 409	Principles of Pharmacology	3
PHAR 499	Research	4
Select one of the following:		3-4

BMB 417	Molecular Biology
BMSC 414	Systems Biology
MIIM 411	Basic Molecular Microbiology
MIIM 431	The Molecular Biology of Viruses
NRSC 410	Cellular & Molecular Neurobiology
PHAR 420	Pharmacovigilance: A Practical Approach

### Business MBA Requirements

<b>Introductory MBA Courses</b>		
ACCT 400	Financial Accounting for Business Decisions	3
ECON 420	Managerial Economics	3
FINC 450	Financial Management	3
MARK 460	Marketing Management	3
SCMG 480	Intro to Operations Management	3
<b>MBA Coursework</b>		
FINC 470N	Business Finance	3
HRER 417N	Managing and Motivating in the Workplace	3
ISSCM 596N	Data Driven Decision Making	3
MARK 425N	Business Communication	1.5
MARK 470N	Research, Insights and Storytelling	3
MGMT 426N	Leadership Development	1.5
MGMT 430N	Strategy and Leadership	3
MGMT 431N	Business Consulting Course	3
ETHC 441N	Business Ethics	3
<b>Total Hours</b>		<b>66</b>

### Suggested Sequence of Courses

The below sequence of courses is meant to be used as a suggested path for completing coursework. An individual student's completion of requirements depends on course offerings in a given term as well as the start term for a major or graduate study. Students should consult their advisor for assistance with course selection.

Course	Title	Hours
<b>Year 1</b>		
<b>Fall</b>		
BMSC 410	Biochemistry and Molecular Biology	4
BMSC 416	Methods Biomedical Science	1
BMSC 412	Cell Biology	4
PHAR 499	Research	2
<b>Hours</b>		<b>11</b>
<b>Spring</b>		
PHAR Elective Course		3-4
PHAR 409	Principles of Pharmacology	3
BMSC 402	Statistical Methods for Biomedical Science	3
PHAR 499	Research	2
PHAR 405	Pharmacology Journal Club	0-1
<b>Hours</b>		<b>11-12</b>
<b>Year 2</b>		
<b>Fall</b>		
PHAR 407	Fundamentals of Drug Discovery and Development	3
PHAR 405	Pharmacology Journal Club	0-1
ACCT 400	Financial Accounting for Business Decisions	3

SCMG 480	Intro to Operations Management	3
<b>Hours</b>		<b>9-10</b>
<b>Winter</b>		
FINC 450	Financial Management	3
MARK 460	Marketing Management	3
<b>Hours</b>		<b>6</b>
<b>Spring</b>		
MARK 425N	Business Communication	1.5
MGMT 426N	Leadership Development	1.5
MARK 470N	Research, Insights and Storytelling	3
<b>Hours</b>		<b>6</b>
<b>Summer</b>		
ECON 420	Managerial Economics	3
FINC 470N	Business Finance	3
ISSCM 596N		
<b>Hours</b>		<b>6</b>
<b>Year 3</b>		
<b>Fall</b>		
ETHC 441N	Business Ethics	3
MGMT 430N	Strategy and Leadership	3
<b>Hours</b>		<b>6</b>
<b>Winter</b>		
HRER 417N	Managing and Motivating in the Workplace	3
MGMT 431N	Business Consulting Course	3
<b>Hours</b>		<b>6</b>
<b>Total Hours</b>		<b>61-63</b>

- **Critical Decision Making:** Graduates will demonstrate their capacity for critical analysis in processing, interpreting, and managing the quantitative and qualitative information necessary for effective managerial decision making. [MBA]
- **Ethics and Responsible Leadership:** Graduates will understand how to be a leader in business who exhibits personal integrity, ethical awareness, and an ability to apply ethical principles to business practice. [MBA]
- **Global Perspective and Awareness of Diversity:** Graduates will have a global perspective by recognizing international business issues and appreciating diversity, including culture, race, religion, and gender. [MBA]
- **Communication:** Graduates will be able to communicate effectively, orally. Graduates will be able to communicate effectively, in writing. [MBA]
- **Demonstrate a general knowledge base in the biomedical sciences** with an understanding of fundamental biochemical, molecular, and cellular processes and common biomedical research methods. [MS]
- **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. [MS]
- **Understand, assess, and draw conclusions** from published research. [MS]
- **Describe various approaches** by which new drugs are discovered and developed and the process by which drugs are approved for clinical use. [MS]
- **Propose original biomedical research** by forming an hypotheses, designing experiments, critically evaluating experimental results, interpreting data, and drawing appropriate conclusions. [MS]
- **Design and effectively present scientific presentations**, write scientific papers and grants. [MS]
- **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. [MS]

## Dual Degree Programs

Students in dual degree programs are responsible for abiding by academic policies and graduation requirements of both academic units to which they are enrolled. It is strongly recommended that students schedule regular meetings with academic advisors from both units to ensure timely degree completion. Dual degree programs may have slightly different degree requirements from the standard for one or both of the degrees earned. Students should closely read through all degree requirements and ask for clarification as needed.

## 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/academic-standards-regulations/graduate-professional/>) under their school. Any additional University Policies supersede school policies.

## Learning Outcomes

- **Integrative Business Knowledge:** Graduates will be proficient in integrating the techniques, processes, and procedures of the fundamental business disciplines (accounting, economics, finance, marketing, management, human resource management, operations management, and information technology). They will be able to apply theory, skills, and knowledge from these disciplines to business practice. [MBA]