PHARMACEUTICAL BIOCHEMISTRY (M.S.)

The objective of this program is to provide students with the opportunity to obtain a Master of Science Degree in Pharmaceutical Biochemistry at Montclair State University. Graduates from this program will be prepared for careers in applied research or product development in the pharmaceutical industry and for work in management, inspection, sales and service. Specifically, these graduates will have the requisite skills in biochemistry, drug design and pharmacology to set them on a career path in the pharmaceutical industry. This program is uniquely poised to meet these objectives by providing a core curriculum which closely parallels the drug discovery process followed within the pharmaceutical industry. The core curriculum provides training in the biochemical aspects of drug discovery, drug screening and medicinal chemistry technologies, and pharmacological evaluation of new drug candidates.

For details about this program, including program description, admission requirements, and contact information, click here (https://www.montclair.edu/graduate/programs-of-study/pharmaceutical-biochemistry-ms/).

Program Requirements

Code	Title	Credits
Core Courses		
CHEM 570	Advanced Biochemistry	3
CHEM 575	Enzyme Kinetics and Mechanisms	3
CHEM 579	Biomolecular Assay Development	3
CHEM 582	Biochemical Pharmacology	3
Research Options		
Select either the Graduate Literature Search or the Research & Thesis option:		3-9
Graduate Literature Search		
CHEM 598	Graduate Literature Search (Complete two times for a total of 2 credits)	
CHEM 599	Graduate Seminar	
Research & Thesis		
CHEM 595	Graduate Research	
CHEM 698	Master's Thesis	
Submit the completed Thesis original and one copy to the Graduate Office. See Thesis Guidelines for details.		
Culminating Experience		
Make a seminar presentation in conjunction with Research option. Graduate School must be notified when complete.		
Electives		
Complete 15 credits of electives if choosing the Graduate Literature Search option. Complete 9 credits of electives if choosing the Thesis option. See list below. No more than 6 credits in Biology may be taken.		15-9
Total Credits		**30**

Electives

Code	Title	Credits
BIOL 505	Experimental Cell Culture	3
BIOL 512	Special Topics in Modern Genetics	3
BIOL 547	Molecular Biology I	3
BIOL 548	Molecular Biology II	4
BIOL 594	Signal Transduction	3
BIOL 598	Selected Techniques in Molecular Biology	1.5
CHEM 525	Bioinorganic Chemistry	3
CHEM 530	Advanced Organic Chemistry	3
CHEM 538	Drug Design in Medicinal Chemistry	3
CHEM 560	Advanced Analytical Chemistry	3
CHEM 574	Protein Structure	3
CHEM 577	Nucleic Acid Biochemistry	3
CHEM 578	Biochemistry Laboratory Techniques	3
CHEM 595	Graduate Research	1-6

Research and Thesis Option - 2 Year Roadmap

First Year

Fall	Credits	Spring	Credits
Core Course	3	Core Course	3
Elective Course	3	Elective course	3
CHEM 595	2	CHEM 595	2
	8		**8**

Second Year

Fall	Credits	Spring	Credits
Core Course	3	Elective Course	3
Elective Course	3	CHEM 698	3
CHEM 595	2	Culminating Experience	
	8		**6**

Total Credits 30

Research and Thesis Option - 15 Month Roadmap

First Year

Fall	Credits	Spring	Credits
Core Course (Complete in the Summer term)	3	Elective Course (Complete in the Winter term)	3
CHEM 595 (Complete in the Summer term)	2	Core Course	3
Core Course	3	Elective Course	3
Elective Course	3	CHEM 595	2

CHEM 595	2		
	13		**11**

Second Year

		Summer	**Credits**
		Elective Course	3
		CHEM 698	3
		Culminating Experience	
			6

Total Credits 30

Literature Search Option - 2 Year Roadmap

First Year

Fall	**Credits**	**Spring**	**Credits**
Core Course	3	Core Course	3
Elective Course	3	Elective Course	3
Elective Course	3	Elective Course	3
		CHEM 598	1
	9		**10**

Second Year

Fall	**Credits**	**Spring**	**Credits**
Core Course	3	Elective Course	3
Elective Course	3	CHEM 599	1
CHEM 598	1	Culminating Experience	
	7		**4**

Total Credits 30

Literature Search Option - 15 Month Roadmap

First Year

Fall	**Credits**	**Spring**	**Credits**
Elective Course (Complete in the Summer term)	3	Elective Course (Complete in the Winter term)	3
Core Course	3	CHEM 598 (Complete in the Winter term)	1
Elective Course	3	Core Course	3
Elective Course	3	Elective Course	3
		Elective Course	3
		CHEM 598	1
	12		**14**

Second Year

		Summer	**Credits**
		Core Course	3
		CHEM 599	1
		Culminating Experience	
			4

Total Credits 30