CHEMISTRY (M.S.)

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

Program Requirements

Core CoursesCHEM 540Advanced Physical Chemistry 1Select two of the following:CHEM 520CHEM 520Advanced Inorganic Chemistry 1CHEM 530Advanced Organic Chemistry 1CHEM 560Advanced Analytical ChemistryCHEM 570Advanced BiochemistryResearch OptionsSelect one of the following options:Select one of the following options:3Graduate Literature Search OptionGraduate Literature Search OptionCHEM 598Graduate Literature Search (Complete two times for a total of 2 credits.)CHEM 599Graduate SeminarThesis OptionGraduate ResearchCHEM 595Graduate ResearchCHEM 698Master's ThesisSubmit the completed Thesis original and one copy to the Graduate Office. See Thesis Guidelines for details.Culminating ExperienceMake a seminar presentation in conjunction with Research option.Graduate School must be notified when complete.ElectivesComplete 18 credits of electives if choosing the Graduate Literature18-Search option. Complete 12 credits of electives if choosing the Thesis option. See list below.	-	•	
CHEM 540 Advanced Physical Chemistry 1 Select two of the following: CHEM 520 CHEM 520 Advanced Inorganic Chemistry 1 CHEM 530 Advanced Organic Chemistry 1 CHEM 560 Advanced Analytical Chemistry 1 CHEM 570 Advanced Biochemistry CHEM 570 Advanced Biochemistry Research Options Select one of the following options: Select one of the following options: Graduate Literature Search Option CHEM 598 Graduate Literature Search (Complete two times for a total of 2 credits.) CHEM 599 Graduate Seminar Thesis Option CHEM 698 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 18 credits of electives if choosing the Graduate Literature 18-Search option. Complete 12 credits of electives if choosing the Thesis option. See list below.	Code	Title	Credits
Select two of the following: CHEM 520 Advanced Inorganic Chemistry 1 CHEM 530 Advanced Organic Chemistry 1 CHEM 560 Advanced Analytical Chemistry CHEM 570 Advanced Biochemistry Research Options Select one of the following options: Graduate Literature Search Option CHEM 598 Graduate Literature Search (Complete two times for a total of 2 credits.) CHEM 599 Graduate Seminar Thesis Option CHEM 595 Graduate Research 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 18 credits of electives if choosing the Graduate Literature 18-Search option. Complete 12 credits of electives if choosing the Thesis option. See list below.	Core Courses		
CHEM 520Advanced Inorganic Chemistry 1CHEM 530Advanced Organic Chemistry 1CHEM 560Advanced Analytical ChemistryCHEM 570Advanced BiochemistryResearch OptionsSelect one of the following options:Graduate Literature Search OptionCHEM 598Graduate Literature Search OptionCHEM 598Graduate Literature Search (Complete two times for a total of 2 credits.)CHEM 599Graduate SeminarThesis OptionCHEM 595Graduate ResearchCHEM 595Graduate ResearchCHEM 698Master's ThesisSubmit the completed Thesis original and one copy to the Graduate Office. See Thesis Guidelines for details.Culminating ExperienceMake a seminar presentation in conjunction with Research option. Graduate School must be notified when complete.ElectivesComplete 18 credits of electives if choosing the Graduate Literature18- Search option. Complete 12 credits of electives if choosing the Thesis option. See list below.	CHEM 540	Advanced Physical Chemistry ¹	3
CHEM 530Advanced Organic Chemistry 1CHEM 560Advanced Analytical ChemistryCHEM 570Advanced BiochemistryResearch OptionsSelect one of the following options:Graduate Literature Search OptionCHEM 598Graduate Literature Search OptionCHEM 599Graduate Literature Search (Complete two times for a total of 2 credits.)CHEM 599Graduate SeminarThesis OptionCHEM 595Graduate ResearchCHEM 698Master's ThesisSubmit the completed Thesis original and one copy to the Graduate Office. See Thesis Guidelines for details.Culminating ExperienceMake a seminar presentation in conjunction with Research option. Graduate School must be notified when complete.ElectivesComplete 18 credits of electives if choosing the Graduate Literature18- Search option. Complete 12 credits of electives if choosing the Thesis option. See list below.	Select two of the	following:	6
CHEM 560 Advanced Analytical Chemistry CHEM 570 Advanced Biochemistry Research Options Select one of the following options: Graduate Literature Search Option CHEM 598 Graduate Literature Search (Complete two times for a total of 2 credits.) CHEM 599 Graduate Seminar Thesis Option 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 18 credits of electives if choosing the Graduate Literature 18-Search option. Complete 12 credits of electives if choosing the Thesis option. See list below.	CHEM 520	Advanced Inorganic Chemistry ¹	
CHEM 570Advanced BiochemistryResearch OptionsSelect one of the following options:Select one of the following options:Graduate Literature Search OptionGraduate Literature Search (Complete two times for a total of 2 credits.)CHEM 598Graduate SeminarThesis OptionCHEM 595CHEM 595Graduate ResearchCHEM 698Master's ThesisSubmit the completed Thesis original and one copy to the Graduate Office. See Thesis Guidelines for details.Culminating ExperienceMake a seminar presentation in conjunction with Research option.Graduate School must be notified when complete.ElectivesComplete 18 credits of electives if choosing the Graduate Literature18-Search option. Complete 12 credits of electives if choosing the Thesis option. See list below.	CHEM 530	Advanced Organic Chemistry ¹	
Research Options 3 Select one of the following options: 3 Graduate Literature Search Option 3 CHEM 598 Graduate Literature Search (Complete two times for a total of 2 credits.) CHEM 599 Graduate Seminar Thesis Option 3 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 18 credits of electives if choosing the Graduate Literature 18-Search option. Complete 12 credits of electives if choosing the Thesis option. See list below.	CHEM 560	Advanced Analytical Chemistry	
Select one of the following options: 3 Graduate Literature Search Option 6 CHEM 598 Graduate Literature Search (Complete two times for a total of 2 credits.) CHEM 599 Graduate Seminar Thesis Option 6 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 18 credits of electives if choosing the Graduate Literature18-Search option. Complete 12 credits of electives if choosing the Thesis option. See list below.	CHEM 570	Advanced Biochemistry	
Graduate Literature Search Option CHEM 598 Graduate Literature Search (Complete two times for a total of 2 credits.) CHEM 599 Graduate Seminar Thesis Option CHEM 595 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 18 credits of electives if choosing the Graduate Literature18-Search option. Complete 12 credits of electives if choosing the Thesis option. See list below.	Research Options	S	
CHEM 598Graduate Literature Search (Complete two times for a total of 2 credits.)CHEM 599Graduate SeminarThesis OptionCHEM 595CHEM 595Graduate ResearchCHEM 698Master's ThesisSubmit the completed Thesis original and one copy to the Graduate Office. See Thesis Guidelines for details.Culminating ExperienceMake a seminar presentation in conjunction with Research option. Graduate School must be notified when complete.ElectivesComplete 18 credits of electives if choosing the Graduate Literature18- Search option. Complete 12 credits of electives if choosing the Thesis option. See list below.	Select one of the	following options:	3-9
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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 18 credits of electives if choosing the Graduate Literature18-Search option. Complete 12 credits of electives if choosing the Thesis option. See list below.	CHEM 599	Graduate Seminar	
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 18 credits of electives if choosing the Graduate Literature18-Search option. Complete 12 credits of electives if choosing the Thesis option. See list below.	Thesis Option		
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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 18 credits of electives if choosing the Graduate Literature18- Search option. Complete 12 credits of electives if choosing the Thesis option. See list below.	CHEM 698	Master's Thesis	
Make a seminar presentation in conjunction with Research option. Graduate School must be notified when complete. Electives Complete 18 credits of electives if choosing the Graduate Literature18- Search option. Complete 12 credits of electives if choosing the Thesis option. See list below.		1 5 17	
Graduate School must be notified when complete. Electives Complete 18 credits of electives if choosing the Graduate Literature18- Search option. Complete 12 credits of electives if choosing the Thesis option. See list below.	Culminating Expe	erience	
Complete 18 credits of electives if choosing the Graduate Literature18- Search option. Complete 12 credits of electives if choosing the Thesis option. See list below.		,	
Search option. Complete 12 credits of electives if choosing the Thesis option. See list below.	Electives		
Total Credits	Search option. Co	omplete 12 credits of electives if choosing the	e18-12
	Total Credits		30

¹ Students in the combined B.S. Chemistry/M.S Chemistry program complete these courses as part of the undergraduate major.

Electives

Code	Title	Credits
CHEM 510	Hazardous Materials Management	3
CHEM 520	Advanced Inorganic Chemistry	3
CHEM 525	Bioinorganic Chemistry	3
CHEM 530	Advanced Organic Chemistry	3
CHEM 532	Organic Synthesis	3
CHEM 534	Separation and Analysis	3
CHEM 538	Drug Design in Medicinal Chemistry	3
CHEM 542	Quantum Chemistry and Spectroscopy	3
CHEM 544	Chemical Thermodynamics and Electrochemis	try 3
CHEM 548	Chemical Kinetics	3
CHEM 560	Advanced Analytical Chemistry	3
CHEM 570	Advanced Biochemistry	3

CHEM 590	Special Topics in Advanced Chemistry	3
CHEM 595	Graduate Research	1-6

Research and Thesis Option - 2 Year Roadmap

First Year

Flist fedi				
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 Elective Course		3			
Core Course		3 CHEM 595		2			
Elective Course		3 Core Course		3			
CHEM 595		2					
Second Yea		13		11	Summer	Credits	
				E	elective Course	orcuito	3
				C	CHEM 698		3
					Culminating Experience	9	
							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
			1
Elective Course		3 CHEM 599	1
Elective Course CHEM 598		1 Culminating Experience	I
			4

Total Credits 30

Literature Search Option - 15 Month Roadmap

First Year

Fall Elective Course (Complete in the Summer term)	Credits	Spring 3 Elective Course (Complete in the Winter term)	Credits	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		
	1	2	1	4		
Second Yea	ar					
				Summer	Credits	
				Core Course		3
				CHEM 599		1
				Culminatin Experience	-	
						4

Total Credits 30