Bachelor of Science in Chemistry

Program Overview

Chemistry isn't called "the central science" for nothing! In fact, because chemical concepts appear in many other fields, chemistry courses require preparation for many careers, including laboratory work, research, nursing, physical therapy, pharmacy, medicine or dentistry. Manchester chemistry majors enjoy an outstanding placement rate for their post-graduate goals, including bachelor's level jobs and professional schools. Manchester chemistry faculty will guide you through a hands-on chemistry education that fuses with our outstanding liberal arts curriculum. We graduate students who are effective scientists, communicators, and problem solvers, ready to build successful careers in a rapidly changing world.

Degree Requirements

To earn this degree, students must have a GPA of 2.0 or higher in the Major as well as an overall GPA of 2.0, complete a minimum of 120 credit hours, and fulfill the course requirements of the program listed below.

*This is a sample plan; specific courses may vary from year to year. Academic advisors will work with each student to develop their individual schedule.

✓	Major-Specific Required Courses		CREDITS
	CHEM 111/R/L	General Chemistry I/Recitation/Lab	5
	CHEM 113/R/L	General Chemistry II/Recitation/Lab	5
	CHEM 235/L	Analytical Chemistry/Lab	4
	CHEM 311/R/L	Organic Chemistry I/Recitation/Lab	5
	CHEM 312/R/L	Organic Chemistry II/Recitation/Lab	5
	CHEM 341/L	Physical Chemistry I/Lab	4
	CHEM 342/L	Physical Chemistry II/Lab	4
	NASC 202	Exploring STEM Careers	1
	NASC 450	Senior Seminar	1
	PHYS 210/L	General Physics I/Lab	4
	PHYS 220/L	General Physics II/Lab	4
	MATH 121^	Calculus I	4
	MATH 122	Calculus II	4

	Two hours of laboratory work selectd from:		CREDITS
	CHEM 405L	Biochemistry I Lab	1
	CHEM 441	Advanced Analytical Lab I	1
	CHEM 443	Advanced Analytical Lab II	1

	Two hours of experiential learning selected from:		CREDITS
	CHEM 475	Internship	1-2
	CHEM 496	Research	1-2

	Six hours of electives chosen from:		CREDITS
	CHEM 405	Biochemistry I	3
	CHEM 406	Biochemistry II	3
	CHEM 412	Medicinal Chemistry	3
	CHEM 425	Advanced Organic Chemistry	3
	CHEM 435	Advanced Inorganic Chemistry	3

✓	CORE		CREDITS
		Foundation	
	LA-FWS	First-Year Writing Seminar	3
	LA-FCS	First-Year Communication Seminar	3
	LA-FQR	Quantitative Reasoning	3-4
	LA-FSS	First Year Success Seminar	1
	LA-FCG	Cultural and Global Understanding	3-5
		Exploration	
	LA-EAH	Arts and Humanities	3
	LA-ENS	Natural Sciences	3-6
	LA-ESS	Social Sciences	3-4
		Transformation	
	LA-TFR	Faith, Reason, and Ethics	3
	LA-TBI	Big Issues - 2 courses	6-7
	LA-TCE	Creative Expression	1-3

✓	Additional credits to bring total to 120+ credits		CREDITS
		Electives	
		Experiential Learning	

MAJOR	*Options
CORE	^CORE equivalent
ELECTIVE/MINOR	
EXPERIENTIAL	

Total Program Credits: 120+

Example Course Sequence:

The following is a sample of a semester-by-semester approach to completing this program in 4 years.

YEAR 1			
FIRST SEMESTER			
COURSE		CREDITS	PREREQUISITES
CHEM 111/R/L^	General Chemistry I/Recitation/Lab	5	MATH 105 or higher placement
MATH 121^	Calculus I	4	
LA-FWS	First-Year Writing Seminar	3	
LA-FSS	First Year Success Seminar	1	
LA-FCS	First-Year Communication Seminar	3	
JAN TERM			
COURSE		CREDITS	
SECOND SEMESTER			
COURSE		CREDITS	
CHEM 113/R/L	General Chemistry II/Recitation/Lab	5	CHEM 111
MATH 122	Calculus II	4	
LA-TFR	Faith, Reason, and Ethics	3	
LA-ESS	Social Sciences	3	
		31	

YEAR 2			
THIRD SEMESTER			
COURSE		CREDITS	PREREQUISITES
NASC 202	Exploring STEM Careers	1	
PHYS 210^	General Physics I	4	MATH 121 or concurrent
CHEM 311/R/L	Organic Chemistry I/Recitation/Lab	5	C- or higher in CHEM 113
ELECTIVE/MINOR		3	
JAN TERM			
COURSE		CREDITS	
LA-TCE	Creative Expression	3	
FOURTH SEMESTER			
COURSE		CREDITS	
PHYS 220	General Physics II	4	MATH 122 or concurrent, PHYS 210
CHEM 235/L	Analytical Chemistry/Lab	4	CHEM 113
CHEM 312/R/L	Organic Chemistry II/Recitation/Lab	5	CHEM 311
LA-EAH	Arts and Humanities	3	
ELECTIVE/MINOR		3	
		32	

4-Year Sample Schedule Cont.

YEAR 3			
FIFTH SEMESTER			
COURSE		CREDITS	PREREQUISITES
CHEM 341/L	Physical Chemistry I/Lab	4	CHEM 113, MATH 122
CHEM 4XX	400-level Lab	1	
LA-TBI	Big Issues	3	
LA-FCG	Cultural and Global Understanding	3	
EXPERIENTIAL		3	
JAN TERM			
COURSE		CREDITS	
EXPERIENTIAL		3	
SIXTH SEMESTER			
COURSE		CREDITS	
CHEM 342/L	Physical Chemistry II/Lab	4	CHEM 113, MATH 122, PHYS 220
CHEM 4XX	400-level CHEM	3	
LA-TBI	Big Issues	3	
ELECTIVE/MINOR		3	
EXPERIENTIAL		3	
		33	

YEAR 4			
SEVENTH SEMESTER			
COURSE		CREDITS	PREREQUISITES
CHEM 4XX	400-level CHEM	3	
CHEM 475	Internship	2	Junior or senior standing, FWS or ENG 111
ELECTIVE/MINOR		3	
ELECTIVE/MINOR		3	
EXPERIENTIAL		3	
JAN TERM			
COURSE		CREDITS	
EXPERIENTIAL		3	
EIGHTH SEMESTER			
COURSE		CREDITS	
CHEM 441	Advanced Analytical Lab I	1	
NASC 450	Senior Seminar	1	
ELECTIVE/MINOR		3	
EXPERIENTIAL		3	
		25	
	TOTAL CREDITS	121	