Possible Degree Pathways for earning a major in Chemical Sciences

Pathways include both major and LSA requirements.

- 10 credits of Physics required for the major will fulfill all of the NS distribution requirements.
- Math prerequisites will fulfill QR1 and Mathematical and Symbolic Analysis requirements.
- Choose a HU, SS, or other course to fulfill the Race and Ethnicity requirement
- ULWR could be filled by CHEM 353, CHEM 482 or by another course

For graduate school and industrial careers, research experience is very important. Students are encouraged to earn 4 credits of undergraduate research (CHEM 399) to fulfill a degree requirement as well as 4 additional credits under CHEM 398.

Pre-health students: Elect CHEM 351
Psych 111 and Soc 100 or 302 should be chosen for SS credits
Bio 171, Bio 172, Bio 173, an upper level biology course (lecture + lab) are needed
Stats 250 is highly recommended

Path A Starting in Organic Chemistry Fall of freshman year

Year 1 Fall	credit hours	Year 1 Winter	credit hours
FYWR	4	Language 1	4
CHEM 210 Organic I	3	CHEM 215 Organic II	3
CHEM 211 Organic I Lab	2	CHEM 216 Organic II Lab	2
Math 115 Calc 1	4	Math 116 Calc 2	4
SS	3	HU	3
	16		16
Year 2 Fall		**Year 2 Winter**	
Language 2	4	Language 3	4
CHEM 260 Chemical Principles	3	CHEM 241 Analytical I	2
Phys 140	4	CHEM 242 Analytical Lab	2
Phys 141 Lab	1	Phys 240	4
Other credits	3	Phys 241 Lab	1
		Other credits	2
	15		15
Year 3 Fall		**Year 3 Winter**	
Language 4	4	CHEM 447 Analytical II OR 463 Physical (Thermo/Kinetics)	3
CHEM 262 Mathematical Methods	4	CHEM 351 Biochem OR 420 Organic III	3-4
CHEM 302 Inorganic I	3	CHEM 399 Undergrad Research	2
CHEM 399 Undergrad Research	1	Other credits	6-7
HU	4		
	16		14-15
Year 4 Fall		**Year 4 Winter**	
CHEM 402 Inorganic II OR 419 Physical Organic OR 351 Biochem	3-4	Adv. Lab* course OR [447 Analytical II OR 463 Physical (Thermo/Kinetics)]	3
Adv. Lab* course OR 461 Physical (Quantum)	3	Chem elective	3
CHEM 462 Computational Lab	1	HU/SS/CE/ID	3
CHEM 399 Undergrad Research	1	Other credits	6
SS	4		
	12-14		15

*Advanced Lab: CHEM 352 (Biochemistry) or 353 (Biochemistry ULWR), CHEM 436 (Polymers), CHEM 482 (Inorganic ULWR), CHEM 483 (Physical/Analytical)

Path B Organic Chemistry Winter of Freshman Year (and later Physics)

Year 1 Fall	credit hours	Year 1 Winter	credit hours
Math 115 Calc I	4	Language 1	4
FYWR	4	CHEM 210 Organic I	3
CHEM 125/126 General Chemistry Lab	2	CHEM 211 Organic I Lab	2
CHEM 130 General Chemistry	3	SS	3
other credits	2	Math 116 Calc II	4
	15		16
Year 2 Fall		**Year 2 Winter**	
Language 2	4	Language 3	4
CHEM 215 Organic II	3	CHEM 302 Inorganic I	3
CHEM 216 Organic II Lab	2	CHEM 241 Analytical I	2
CHEM 260 Chemical Principles	3	CHEM 242 Analytical Lab	2
HU	4	Other credits	4
	16		15
Year 3 Fall		**Year 3 Winter**	
Language 4	4	CHEM 262 Mathematical Methods	4
Phys 140	4	Physics 240	4
Phys 141 Lab	1	Physics 241 Lab	1
CHEM 402 Inorganic II OR 419 Physical Organic OR 351 Biochemistry	3-4	CHEM 399 Undergrad Research	1
CHEM 399 Undergrad Research	1	SS	4
Other credits	1-2		
	14-15		14
Year 4 Fall		**Year 4 Winter**	
Adv. lab course* OR 461 Physical (Quantum)	3	Adv. lab course* OR [447 Analytical II OR 463 Thermo/Kinetics)]	3
CHEM 462 Computational Lab	1	CHEM 447 Analytical II OR 463 Physical (Thermo/Kinetics)	3
CHEM 399 Undergrad Research	2	CHEM 351 Biochemistry OR 420 Organic III	3-4
CHEM elective	3	HU/SS/CE/ID	3
HU	3	Other credits	3
Other credits	3		
	15		15

* Advanced Lab: CHEM 352 (Biochemistry) or 353 (Biochemistry ULWR), CHEM 436 (Polymers), CHEM 482 (Inorganic ULWR), CHEM 483 (Physical/Analytical)

Path C (Exploring early; Organic Chemistry sophomore year)

Year 1 Fall	credit hours	Year 1 Winter	credit hours
Math 115 Calc I	4	Language 1	4
FYWR	4	CHEM 125/126 General Chemistry Lab	2
other credits	4	CHEM 130 General Chemistry	3
HU	3	SS	3
		Other credits	4
	15		16
Year 2 Fall		Year 2 Winter	
Language 2	4	Language 3	4
CHEM 210 Organic I	3	CHEM 215 Organic II	3
CHEM 211 Organic I Lab	2	CHEM 216 Organic II Lab	2
Phys 140	4	Physics 240	4
Phys 141 Lab	1	Physics 241 Lab	1
Other credits	1	other credits	1
	15		15
Year 3 Fall		Year 3 Winter	
Language 4	4	CHEM 302 Inorganic I	3
Math 116 Calc II	4	CHEM 260 Chemical Principles	3
CHEM 241 Analytical I	2	CHEM 262 Mathematical Methods	4
CHEM 242 Analytical Lab	2	CHEM 399 Undergrad Research	2
SS	4	HU/SS/CE/ID	3
	16		15
Year 4 Fall		Year 4 Winter	
CHEM 402 Inorganic II OR 419 Physical Organic OR 351 Biochemistry	3-4	CHEM 351 Biochemistry OR 420 Organic III	3-4
Adv. lab course* OR 461 Physical (Quantum)	3	Adv. lab course* OR [447 Analytical II or 463 Thermo/Kinetics)]	3
CHEM 462 Computational Lab	1	CHEM 447 Analytical II OR 463 Physical (Thermo/Kinetics)	3
CHEM elective	3	HU	4
CHEM 399 Undergrad Research	2		
Other credits	3-4		
	15-16		13-14

* Advanced Lab: CHEM 352 (Biochemistry) or 353 (Biochemistry ULWR), CHEM 436 (Polymers), CHEM 482 (Inorganic ULWR), CHEM 483 (Physical/Analytical)