Chemistry Course Requirements - Professional Emphasis (2018-2019)

The Professional emphasis is the traditional chemistry major; this path offers an in-depth look into the many distinct areas of chemistry. Students in this emphasis are prepared to apply for many post-bachelor programs, such as graduate school, or work for a chemical company.

1st Year Fall	1st Year Spring	2nd Year Fall	2nd Year Spring	3rd Year Fall	3rd Year Spring	4th Year Fall	4th Year Spring
CHEM 1210[1] Gen Chem I 4 cr. F, S, U SF	CHEM 1220[1] Gen Chem II 4 cr. F, S, U SF	CHEM 2310[1] Org Chem I 4 cr. F, S, U	CHEM 2320[1] Org Chem II 4 cr. F, S, U	CHEM 3060 Quantum Chem 4 cr. F, S QI	CHEM 3070 Thermo 4 cr. F, S QI	CHEM 3100 Inorganic 5 cr. F, S	CHEM 57XX[4] Adv. Lab 2 cr. Half Sem
CHEM 1215[1] Gen Chem I Lab 1 cr. F, S, U	CHEM 1225[1] Gen Chem I Lab 1 cr. F, S, U	CHEM 2315 Org Chem I Lab 2 cr. F, S, U	CHEM 2325 Org Chem II Lab 2 cr. F, S, U	CHEM 3510 Biochem I 3 cr. F, S, U	CHEM 3000 Quant Analysis 4 cr. F, S, U CWQI	CHEM 57XX[4] Adv. Lab 2 cr. Half Sem	CHEM 57XX[4] Adv. Lab 2 cr. Half Sem
MATH 1210[2] Calculus I 4 cr. F, S, U QR	MATH 1220[2] Calculus II 4 cr. F, S, U QR	MATH 2210[2] Calculus III 3 cr. F, S, U QR	MATH 2250[5] ODEs & Lin Alg 4 cr. F, S, U	MATH 3150 PDEs 2 cr. F, S, U	CHEM 57XX[4] Adv. Lab 2 cr. Half Sem	CHEM 57XX[4] Adv. Lab 2 cr. Half Sem	
CHEM 2000/4000 UG Seminar 1 cr. F, S		PHYS 2210[3] Physcs for S&E I 4 cr. F, S, U SF	PHYS 2220[3] Physcs for S&E II 4 cr. F, S, U SF	WRTG 3014 Sci. Writing 3 cr. F, S, U CW			
		PHYS 2215 Phys S&E Lab I 1 cr. F, S	PHYS 2225 Phys S&E Lab II 1 cr. F, S				

1) Honors versions of available. Sequence starts in the Fall. Must apply to be in the class.
2) Talk with advisors to see how other calculus sequences could fulfill the calculus requirement.
3) Honors versions are PHYS 3210 + 3220.
4) Need to take 10 credit hours of upper division lab. Fall options: CHEM 5710 (org) 1st half, CHEM 5730 (inorg) 2nd half. Spring options: CHEM 5700 (ana) 1st half, CHEM 5750 (bio) 1st half, CHEM 5720 (phys) 2nd half, CHEM 3200 (radiochem) + NUCL 4000. CHEM 4800 (research), CHEM 4999 (Honors Thesis), or CHEM 4965 (internship) can waive 2 credits. CHEM 3515 (Biochemistry Lab) or 3525 (Molecular Biology of DNA Lab) in place of CHEM 5750, to count for 3 advanced lab credits.
5) MATH 2270 + 2280 are more rigorous, and will take 2 semesters to complete.

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Professional Emphasis										
Done?	Depart.	Number	Course Name	Credit Hours	Gen Ed/ Bach Req	Prerequsites: Chemistry	Prerequsites: Math/Other	Semester: F	Semester: S	Semester: U
MATH CLASSES										
☐	MATH	1210	Calculus I◊	4	QR		MATH 1060 or 1080	x	x	x
☐	MATH	1220	Calculus II◊	4	QR		MATH 1210	x	x	x
☐	MATH	2210	Calculus III◊	4	QR		MATH 1220	x	x	x
☐	MATH	2250	ODE's and Linear Algebra□	4	QR		MATH 2250	x	x	x
☐	MATH	3150	PDE's	2			MATH 2250	x	x	x
PHYSICS CLASSES										
☐	PHYS	2210	Physics for Sci & Eng I⌂	4	SF		MATH 1210	x	x	x
☐	PHYS	2215	Physics Lab for Sci & Eng I	1			MATH 1210	x	x	
☐	PHYS	2220	Physics for Sci & Eng II⌂	4	SF		MATH 1220 + PHYS 2210	x	x	x
☐	PHYS	2225	Physics Lab for Sci & Eng II	1			MATH 1220 + PHYS 2210	x	x	
CHEMISTRY CLASSES										
☐	CHEM	2000/4000	Undergrad Seminar	1				x	x	
☐	CHEM	1210 + 1215	General Chemistry I○ + Lab	4 + 1	SF		MATH 1050	x	x	x
☐	CHEM	1220 + 1225	General Chemistry II○ + Lab	4 + 1	SF	CHEM 1210 + 1215		x	x	x
☐	CHEM	2310 + 2315	Organic Chemistry IΔ + Lab	4 + 2		CHEM 1220 + 1225		x	x	x
☐	CHEM	2320 + 2325	Organic Chemistry IIΔ + Lab	4 + 2		CHEM 2310 + 2315		x	x	x
☐	CHEM	3000	Quantitative Analysis	4	QI, CW	CHEM 1220	MATH 1220 or 1250	x	x	x
☐	CHEM	3060	Quantum Chemistry & Spect	4	QI	CHEM 1220	MATH 2210 + PHYS 2220	x	x	
☐	CHEM	3070	Thermodynamics & Kinetics	4	QI	CHEM 1220	MATH 2210 + PHYS 2220	(x)	x	
☐	CHEM	3100	Inorganic Chemistry	5		CHEM 1220 CHEM 2320 + 3060		x	x	
☐	CHEM	3510	Biological Chemistry I	3		CHEM 2320	BIOL 2020	x	x	x
☐	WRTG	3014	Scientific Writing	3		WRTG 2010		x	x	x
ADVANCED LABS - 10 CREDIT HOURS∓										
☐	CHEM	5700	Analytical Chemistry Lab	2	CW	CHEM 3000			1st	
☐	CHEM	5710	Organic Chemistry Lab	2		CHEM 2320		1st		
☐	CHEM	5720	Physical Chemistry Lab	2		CHEM 3060, 3070			2nd	
☐	CHEM	5730	Inorganic Chemistry Lab	2		CHEM 3100		2nd		
☐	CHEM	5750	Biological Chemistry Labϕ	2		CHEM 3510			1st	

◊: Can take whichever calculus sequence is appropriate, talk to advisor about sequencing.

□: MATH 2270 + 2280 are more rigorous, but will take 2 semesters to complete.

⌂: Honors versions are PHYS 3210 + 3220.

○: Honors versions of General Chemistry are CHEM 1211 + 1221. Sequence starts in the Fall. Must apply to be in the class.

Δ: Honors versions of Organic Chemistry are CHEM 2311 + 2321. Sequence starts in the Fall.

∓: CHEM 4800 (research), CHEM 4965 (internship), or CHEM 4999 (Honors Thesis) can count for up to 2 credit hours

ϕ: Can also take CHEM 3515 (Biochemistry Lab) or 3525 (Molecular Biology of DNA Lab) in place of CHEM 5750, to count for 3 advanced lab credits.