

John Carroll University Chemistry & Biochemistry Department

B.S. Chemistry with Entrepreneurship Minor Study Plan

First Year

Fall Semester	Credits	Major	Core	Minor/Other	Spring Semester	Credits	Major	Core	Minor/Other
CH1410 General Chemistry I*	4	X			CH1420 General Chemistry II*	4	X		
CH1430 General Chemistry Lab I*	1	X			CH1440 General Chemistry Lab II*	1	X		
MT1350 Calculus / Analytic Geometry I	4	X			MT1360 Calculus / Analytic Geometry II	4	X		
EN1250 Seminar on Academic Writing*	3		X		COM1251 Speech Communications*	3		X	
Language Requirement	3		X		Language Requirement	3		X	
Total Credit Hours	15				Total Credit Hours	15			

Second Year

Fall Semester	Credits	Major	Core	Minor/Other	Spring Semester	Credits	Major	Core	Minor/Other
CH2210 Organic Chemistry I	3	X			CH2220 Organic Chemistry II	3	X		
CH2230 Organic Chemistry Lab I	1	X			CH2240 Organic Chemistry Lab II	1	X		
PH1250 General Physics I	3	X			CH2610 Analytical Chemistry	3	X		
PH1251 General Physics Lab I	1	X			CH2630 Analytical Chemistry Lab (QA)	1	X	X	
Linked Pair of Courses (w/ER2201)	6		X	X	PH1260 General Physics II	3	X		
Creative and Performing Arts (CAPA)	1-3		X		PH1261 General Physics Lab II	1	X		
Total Credit Hours	15				Total Credit Hours	15			X

Third Year

Fall Semester	Credits	Major	Core	Minor/Other	Spring Semester	Credits	Major	Core	Minor/Other
CH3630 Physical Chemistry I	3	X			CH3992 Undergraduate Research	1	X		
CH3670 Physical Chemistry I Lab	2	X			CH4780 Chemistry Seminar	0	X		
CH3991 Undergraduate Research	1	X			Philosophy Knowledge/Reality (PLKR)	3		X	
Philosophy Values/Society (PLVS)	3		X		ER3306 Sales/Marketing for Entrepreneur	3			X
ER3304 Social Entrepreneurship (ISJ)	3		X	X	TRS Course	3		X	
Career or Program Elective	3		X		Career or Program Elective	3		X	X
Total Credit Hours	15				Total Credit Hours	16		X	

Fourth Year

Fall Semester	Credits	Major	Core	Minor/Other	Spring Semester	Credits	Major	Core	Minor/Other
CH4410 Instrumental Analysis	3	X			Career or Program Electives	6	X	X	X
CH4430 Instrumental Analysis Lab**	2	X			TRS Course	3		X	
CH3993 Undergraduate Research	1	X			Experience	3			X
Entrepreneurship	3			X	Humanities	3		X	
Social Sciences Course	3		X						
CH Elective or Career Elective	3	X	X						
Total Credit Hours	15				Total Credit Hours	15			

If you are planning to attend graduate school, take the GRE in summer after 3rd year and begin submitting applications this fall.

Total CH Credit Hours Required: 42 Total Credit Hours Required to Graduate: 120

Notes:

*Well prepared students may substitute the CH1410-1440 sequence with CH1510/1530 - Chemical Principles and Lab in the Fall Semester

CH4430 will satisfy the Core Requirements for Capstone, Advanced Writing, and Oral Presentation within the major (CAP, AW, OP)

Please consult your academic advisor to address specific needs of your major, minor, and/or concentration.