

# John Carroll University Chemistry & Biochemistry Department

## Chemistry Major with preparation for 5th year MBA 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	
TRS Course	3		X		PL2086 Business Ethics (PLVS)	3		X	X
<b>Total Credit Hours</b>	<b>15</b>				<b>Total Credit Hours</b>	<b>15</b>			

### 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	
Engaging the Global Community (EGC)*	3		X		PH1260 General Physics II	3	X		
BL1100 Business Analysis with Excel	1			X	PH1261 General Physics Lab II	1	X		
Creative and Performing Arts (CAPA)	1-3		X		EC2201 Fundamentals of Economics	3			X
<b>Total Credit Hours</b>	<b>15</b>				<b>Total Credit Hours</b>	<b>15</b>			

### Third Year

Fall Semester	Credits	Major	Core	Minor/Other	Spring Semester	Credits	Major	Core	Minor/Other
CH3630 Physical Chemistry I	3	X			CH399 Undergraduate Research	1	X		
CH3670 Physical Chemistry I Lab	2	X			CH4780 Chemistry Seminar	0	X		
CH3991 Undergraduate Research	1	X			Management	3			X
AC2201 Fundamentals of Accounting	3			X	Career or Program Electives	3	X	X	X
TRS Course	3		X		Linked Pair of Courses	6		X	
Issue in Social Justice Course (ISJ)	3		X		Philosophy/Knowledge/Reality	3		X	
<b>Total Credit Hours</b>	<b>15</b>				<b>Total Credit Hours</b>	<b>16</b>			

### 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	3	X	X	
CH4430 Instrumental Analysis Lab**	2	X			FN3312 Business Finance	3			X
CH399 Undergraduate Research	1	X			Humanities Course	3		X	
MK3301 Marketing Principles	3			X	Language Requirements	3		X	
Social Sciences Course	3		X		Engaging the Global Community (EGC)	3		X	
Language Requirements	3		X						
<b>Total Credit Hours</b>	<b>15</b>				<b>Total Credit Hours</b>	<b>15</b>			

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.