

# John Carroll University Chemistry & Biochemistry Department

## B.S. Chemistry 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 1XX or 2XX Course*	3		X		Philosophy Values/Society (PLVS)*	3		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		
Language Requirement*	3		X		PH1261 General Physics Lab II	1	X		
Creative and Performing Arts (CAPA)*	1-3		X		Language Requirement*	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			CH Upper Division Elective***	3-4	X		
CH3670 Physical Chemistry I Lab	2	X			CH3992 Undergraduate Research**	1	X		
CH3991 Undergraduate Research**	1	X			CH4780 Chemistry Seminar	0	X		
Philosophy Knowledge/Reality (PLKR)*	3		X		Career or Program Electives	6	X	X	
TRS 3XX Course*	3		X		Linked Pair of Courses*	6		X	
Issue in Social Justice Course (ISJ)*	3		X						
<b>Total Credit Hours</b>	<b>15</b>				<b>Total Credit Hours</b>	<b>16-17</b>			

### Fourth Year

Fall Semester	Credits	Major	Core	Minor/Other	Spring Semester	Credits	Major	Core	Minor/Other
CH4XXX Lecture *****	3	X			Career or Program Electives	15	X	X	
CH4XXX Lab *****	1-2	X							
CH3993 Undergraduate Research**	1	X							
Humanities Course*	3		X						
Social Sciences Course*	3		X						
CH Upper Division Elective***	3	X							
<b>Total Credit Hours</b>	<b>15-16</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:

\* In general, core courses may be interchanged within semesters, as long as pre-requisites are met. It is recommended to complete EN1250 and COM1251 in first year.

\*\* Three credits of CH 399X will count as an upper division elective. They may be used to fulfill the Core requirements for Capstone, Advanced Writing and Oral Presentation within the major by scheduling CH3994 (0 cr hr).

\*\*\* At least two upper division electives must be taken from the following list: CH3660, CH3980, CH4310, CH4350 and CH4360, CH4810, CH4950. The following courses will fulfill the CAPSTONE, ADDITIONAL WRITING, and ORAL PRESENTATION core requirements: CH4410/4430, CH3980, and CH4810/4820.

\*\*\*\* Three credits of CH 399X will count as an upper division elective. They may be used to fulfill the Core requirements for Capstone, Advanced Writing and Oral Presentation within the major by scheduling CH3994 (0 cr hr).

\*\*\*\*\* One CH4XXX lab / lecture pair must be taken in this track. These can be taken from: CH4310/CH4370, CH4350 and CH4360/CH4370, CH4410/4430, or CH4810/4820.

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