

# John Carroll University Chemistry and Biochemistry Department

## B.S. Chemistry with Biochemistry and Neuroscience Concentrations Study Plan

### First Year

Fall Semester	Credits	Major	Core	Other	Spring Semester	Credits	Major	Core	Othe
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		COMM1251 Speech Communications	3		X	
BL1500 Principles of Biology I	3	X		X	BL1600 Principles of Biology II	3	X		X
BL1505 Principles of Biology Lab I	1	X		X	BL1605 Principles of Biology Lab II	1	X		X
<b>Total Credit Hours</b>	<b>16</b>				<b>Total Credit Hours</b>	<b>16</b>			

### Second Year

Fall Semester	Credits	Major	Core	Other	Spring Semester	Credits	Major	Core	Othe
CH2210 Organic Chemistry I	3	X		X	CH2220 Organic Chemistry II	3	X		
CH2230 Organic Chemistry Lab I	1	X		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	
Humanities Course	3		X		PH1260 General Physics II	3	X		
Social Sciences Course	3		X		PH1261 General Physics Lab II	1	X		
Creative and Performing Arts (CAPA)	1-3		X		PS1000 Intro to Psych (ISJ)	3		X	X
<b>Total Credit Hours</b>	<b>15-17</b>				<b>Total Credit Hours</b>	<b>15</b>			

### Third Year

Fall Semester	Credits	Major	Core	Other	Spring Semester	Credits	Major	Core	Othe
CH3630 Physical Chemistry I	3	X			CH4360 Biochemistry II	3	X		
CH3670 Physical Chemistry I Lab	2	X			CH4780 Chemistry Seminar	0	X		
CH4350 Biochemistry I	3	X			Engaging the Global Community (EGC)	3		X	
CH4370 Biochemistry Laboratory	1	X			BL2130 Genetics	3			X
BL3600 Human Physiology**	4	X		X	Language Requirement	3		X	
BL3605 Human Physiology Lab**	0	X		X	TRS Course	3		X	
Language Requirement	3		X						
<b>Total Credit Hours</b>	<b>16</b>				<b>Total Credit Hours</b>	<b>15</b>			

### Fourth Year

Fall Semester	Credits	Major	Core	Other	Spring Semester	Credits	Major	Core	Othe
CH Elective***	3	X			CH Elective***	3	X		
Philosoph. Knowled. and Reality	3		X		Linked Pair of Courses	6		X	
PS4895 Adv. Res. Topics in Neurosci.	3			X	Philosophy Values/Society (PLVS)	3		X	
TRS Course	3		X		PS4260 Psychopharmacology	3	X		X
PS3260 Psychobiology	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 or a health professions program, take the GRE or MCAT in summer between years 3 and 4 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 CH141-144 sequence with CH151/153 - Chemical Principles and Lab in the Fall Semester

\*\* Three CH/BL electives are required, with at least two CH electives taken. Acceptable BL/PS electives are: BL3010, 3020, 3100-3105, 4100, 4590, 4650, 4700, 4710 and PS4260 and others by petition.

\*\*\*One of the CH electives should meet the Capstone, Additional Writing, and Oral Presentation (CAP, AW,OP) requirements in the major: CH4410/4430, CH399, or CH3994 (with 3 credits of CH399). One of these should be taken in the senior year.

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