John Carroll University Chemistry Department

Chemistry Major (3+2 Chem Eng Program at CWRU) Study Plan (JCU Portion)

First Year

Fall Semester	Credits	Major	Core	Minor/ Other		Spring Semester	Credits	Major	Core
CH141 General Chemistry I*	4	X				CH142 General Chemistry II*	4	X	
CH143 General Chemistry Lab I*	1	X				CH144 General Chemistry Lab II*	1	X	
MT135 Calculus / Analytic Geometry I	4	X				MT136 Calculus / Analytic Geometry II	4	X	
EN125 Seminar on Academic Writing	3		X			COMM125 Speech Communications	3		X
PH135 Physics I	4	X				PH136 Physics II	4	X	
PH135L Physics Workshop I	1	X				PH136L Physics Workshop II	1	X	
Total Credit Hours	***17***					***Total Credit Hours***	***17***		

Second Year

Fall Semester	Credits	Major	Core	Minor/ Other		Spring Semester	Credits	Major	Core
CH221 Organic Chemistry I	3	X				CH222 Organic Chemistry II	3	X	
CH223 Organic Chemistry Lab I	1	X				CH224 Organic Chemistry Lab II	1	X	
MT233 Calculus III	4	X				CH261 Analytical Chemistry (QA)	3	X	X
CS128 Introduction to Software Application Development	3	X				CH263 Analytical Chemistry Lab (QA)	1	X	X
CS128L Software Application Development Laboratory	1	X				TRS Course	3		X
TRS Course	3		X			Physical Education Elective	1		X
Engaging the Global Community (EGC)	3		X			Philosophy Values/Society (PLVS)	3		X
						EP217 Mathematical Methods of Physics and Engineering	3	X	
Total Credit Hours	***18***					***Total Credit Hours***	***17***		

Third Year

Fall Semester	Credits	Major	Core	Minor/ Other		Spring Semester	Credits	Major	Core
CH363 Physical Chemistry I	3	X				CH366 Physical Chemistry II	3	X	
CH367 Physical Chemistry I Lab	2	X				CH478 Chemistry Seminar	0	X	
CH441 Instrumental Analysis	3	X				Issues in Social Justice Course	3		X
CH443 Instrumental Analysis Lab*	2		X			Philosophy Knowledge/Reality (PLKR)	3		X
Humanities Course	3		X			Physical Education Elective	1		
Social Sciences Course	3		X			Creative and Performing Arts (CAPA)	1-3		X
Elective	1		X	X		Linked Pair of Courses	6		X
Total Credit Hours	***17***					***Total Credit Hours***	***17***		

Fourth Year

Fall Semester	Credits	Major	Core	Minor/ Other		Spring Semester	Credits	Major	Core
ECHE 260 Introduction to Chemical Systems	3			X		Career or Program Electives	15	X	X
ENGR 225 Thermodynamics, Fluid Dynamics, Heat and Mass Transfer	4			X					
ECHE 360 Transport Phenomenon Che	3			X					
ECHE 151 Chemical Engineering at Cas	3			X					
ENGR 200 Statics and Strength of Mate	3			X					
						Total Credit Hours	***15***		
Total Credit Hours	***16***								

Total of 103 JCU Credits - 17 credits will be transfered back to JCU from CWRU

Notes:

* Well prepared students may substitute the CH141-144 sequence with CH151/153 - Chemical Principles and Lab in the Fall Semester

** CH443 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.

Minor/ Other

Minor/ Other

Minor/ Other

X

Minor/ Other