

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	ther	Spring Semester	Credits	Major	Core	Other	
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	ther	Spring Semester	Credits	Major	Core	Other	
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		
					and Engineering	3	X			
Total Credit Hours	18				Total Credit Hours	17				
Third Year										
Fall Semester	Credits	Major	Core	ther	Spring Semester	Credits	Major	Core	Other	
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			X	
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	ther	Spring Semester	Credits	Major	Core	Other	
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 Chemical S	3			X						
ECHE 151 Chemical Engineering at Case	3			X						
ENGR 200 Statics and Strength of Materials	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.										