

Outcomes Assessment - Chemistry Department

Bachelor of Science Degree in Chemistry

Total number of chemistry credits = 55

Total Number of Laboratory hours = 742

	Freshman				Sophomore						Junior					Senior										
	CHM 191 Gen Chem I	CHM 192 Gen Chem II	MTH 141 Calculus I	MTH 142 Calculus II	CHM 212 Quant. Anal	CHM 226 Organic Lab	CHM 227 Organic I	CHM 228 Organic II	MTH 243 Multivar Calc	MTH 244 Differ Eq	PHY 203/273 Phys I w lab	PHY 204/274 Phys II w lab	CHM 335 P-Chem Lab	CHM 412 Instrumental	CHM 414 Instrum. Lab	CHM 431 P-Chem I	CHM 432 P-Chem II	PHY 205/275 Phys III w lab	CHM 353 Research	CHM 354 Research	CHM 401 Inorganic	CHM 402 Inorgan. Lab	CHM 425 Inter. Org. Lab	CHM 427 Intermed. Org.	CHM 441 Biological	CHM 492 Seminar
Required Areas	Credit-hours		5	5	4	4	3	3	3	3	4	4	2	3	2	3	3	4	3	3	3	2	2	3	3	1
Analytical		I			E								E, A	E, A					R	R						R
Aqueous solutions & equilibria		I			E																					
Statistics					E									R												
Separations					I									E												
Spectroscopy		I			R	I		I					E										R			
Biochemistry																			R	R					E	R
Lipids								I																	I, E	
Carbohydrates								I																	I, E	
Proteins								I																	I, E	
Nucleic acids								I																	I, E	
Inorganic	I	I																	R	R	E, A	E, A				R
Periodic properties	I																				E					
Bonding & structure	I																				E					
Main groups	I																				E					
Transition metals																					E					
Organic	I					E	E	E											R	R			E, A	E, A		R
Functional groups							E																			
Structure & reactivity	I						E																	E, R		
Reaction mechanisms							I	E																E, R		
Synthesis							I	E																E, R		
Physical	I	I											E			E	E		R	R						R
Thermodynamics	I	I														E										
Quantum mechanics	I																E									
Kinetics		I															E									
Laboratory hours	42	42			42	84							56	84					126	126		56	84			
Keep legible & complete experimental records	I	I				R							E	E					R	R		R	R			
Synthesize organic compounds						E													R	R			E			
Synthesize inorganic compounds																			R	R		E				
Perform accurate & precise measurements	I	I											E	E					R	R		E	E			
Use modern instrumentation						E							E	E					R	R		E	E			
Interpret experimental results	I	I				E							E	E					R	R		E	E			
Analyze data statistically													E	E					R	R						
Anticipate & recognize chemical hazards	I	I				E							R	R					R	R		E	E			
Design experiments																			E	E		E	E			
Plan & execute experiments using literature																			E	E		E	E			
Communicate using oral & written reports	I	I				E							E	E					E	E		E	E			
Work in small teams	I	I				E							E	E					E	E		E	E			

Prerequisite and Ancillary Courses

Prerequisite and Ancillary Courses

Ancillary Courses

Outcomes Assessment - Chemistry Department

Bachelor of Arts Degree in Chemistry

Total number of chemistry credits = 33

Total Number of Laboratory hours = 266

I = Introductory E = Emphasis R = Reinforcement A = Advanced	Freshman				Sophomore				Junior			Senior Select One Elective										
	CHM 191 Gen Chem I	CHM 192 Gen Chem II	MTH 141 Calculus I	MTH 142 Calculus II	CHM 212 Quant. Anal	CHM 226 Organic Lab	CHM 227 Organic I	CHM 228 Organic II	PHY 203/273 Phys I w lab	PHY 204/274 Phys II w lab	CHM 335 P-Chem Lab	CHM 431 P-Chem I	CHM 432 P-Chem II	CHM 401 Inorganic	CHM 412 Analytical	CHM 427 Intermed. Org.	CHM 441 Biological					
Topic Areas	Credit-hours		4	4	4	2	3	3	4	4	2	3	3	3	3	3	3					
Analytical		I	Prerequisite and Ancillary Courses	Prerequisite and Ancillary Courses	E				Prerequisite and Ancillary Courses	Prerequisite and Ancillary Courses					E, A							
Aqueous solutions & equilibria		I			E																	
Statistics					E														R			
Separations					I														E			
Spectroscopy		I			R		I				I								E	R		
Biochemistry																						E
Lipids																						I, E
Carbohydrates																						I, E
Proteins																						I, E
Nucleic acids																						I, E
Inorganic	I	I																E, A				
Periodic properties	I																	E				
Bonding & structure	I																	E				
Main groups	I																	E				
Transition metals																		E				
Organic	I							E			E	E								E, A		
Functional groups																						
Structure & reactivity	I							E								E, R						
Reaction mechanisms								I	E							E, R						
Synthesis								I	E							E, R						
Physical	I	I									E	E	E									
Thermodynamics	I	I																				
Quantum mechanics	I												E									
Kinetics		I											E									
Laboratory hours	42	42			42	84					56											
Keep legible & complete experimental records	I	I				R					E											
Synthesize organic compounds						E																
Synthesize inorganic compounds																						
Perform accurate & precise measurements	I	I									E											
Use modern instrumentation		I				E					E											
Interpret experimental results	I	I				E					E											
Analyze data statistically											E											
Anticipate & recognize chemical hazards	I	I				E					R											
Design experiments																						
Plan & execute experiments using literature																						
Communicate using oral & written reports	I	I				E					E											
Work in small teams	I	I				E					E											

Outcomes Assessment - Chemistry Department

Bachelor of Science Degree in Chemistry & Chemical Oceanography

Total number of chemistry credits = 55

Total Number of Laboratory hours = 686

Topic Areas	Credit-hours	Freshman				Sophomore						Junior					Senior									
		CHM 191 Gen Chem I	CHM 192 Gen Chem II	MTH 141 Calculus I	MTH 142 Calculus II	CHM 212 Quant. Anal	CHM 226 Organic Lab	CHM 227 Organic I	CHM 228 Organic II	MTH 243 Multivar Calc	MTH 244 Differ Eq	PHY 203/273 Phys I w lab	PHY 204/274 Phys II w lab	CHM 335 P-Chem Lab	CHM 431 P-Chem I	CHM 432 P-Chem II	OCG 451 Ocean Sci	OCG 494 Ind Study	PHY 205/275 Phys III w lab	CHM 401 Inorganic	CHM 425 Inter. Org. Lab	CHM 427 Intermed. Org.	CHM 412 Instrumental	CHM 414 Instrum. Lab	OCG 493 Ind Study	OCG 521 Chem Ocean
Analytical			I			E																	E, A	E, A		
Aqueous solutions & equilibria			I			E																				
Statistics						E																	R			
Separations						I																				
Spectroscopy			I			R	I		I													R	E			
Chemical Oceanography																E	E								E	E
Inorganic		I	I																				E, A			
Periodic properties		I																					E			
Bonding & structure		I																					E			
Main groups		I																					E			
Transition metals																							E			
Organic		I					E	E	E													E, A	E, A			
Functional groups								E																		
Structure & reactivity		I						E																		
Reaction mechanisms								I	E														E, R			
Synthesis								I	E														E, R			
Physical		I	I																							
Thermodynamics		I	I																							
Quantum mechanics		I																								
Kinetics			I												E											
Laboratory hours		42	42			42	84						56				126					84		84	126	
Keep legible & complete experimental records		I	I				R						E				R				R			E	R	
Synthesize organic compounds							E															E				
Synthesize inorganic compounds																										
Perform accurate & precise measurements		I	I										E				R				E			E	R	
Use modern instrumentation			I				E						E				R				E			E	R	
Interpret experimental results		I	I				E						E				R				E			E	R	
Analyze data statistically													E				R							E	R	
Anticipate & recognize chemical hazards		I	I				E						R								E			R		
Design experiments																	E							E	E	
Plan & execute experiments using literature																	E							E	E	
Communicate using oral & written reports		I	I				E						E				E							E	E	
Work in small teams		I	I				E						E				E							E	E	

Prerequisite and Ancillary Courses

Prerequisite and Ancillary Courses

Ancillary Courses