

**Outcomes Assessment - Chemistry Department**
**Bachelor of Science Degree in Chemistry**

Total number of chemistry credits = 55

Total Number of Laboratory hours = 742

I = Introductory E = Emphasis R = Reinforcement A = Advanced	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																									
<b>Analytical</b>	5	5	4	4	4	2	3	3	3	3	4	4	2	3	2	3	3	4	3	3	3	2	2	3	3	1
Aqueous solutions & equilibria		I			E									E, A	E, A				R	R						R
Statistics					E									R												
Separations					E																					
Spectroscopy		I			I	I		I						E										R		
<b>Biochemistry</b>																			R	R					E	R
Lipids																									I, E	
Carbohydrates																									I, E	
Proteins																									I, E	
Nucleic acids																									I, E	
<b>Inorganic</b>	I	I																	R	R	E, A	E, A				R
Periodic properties	I																				E					
Bonding & structure	I																				E					
Main groups	I																				E					
Transition metals																					E					
<b>Organic</b>	I					E	E	E											R	R		E, A	E, A			R
Functional groups																									E, R	
Structure & reactivity	I																								E, R	
Reaction mechanisms																									E, R	
Synthesis																									E, R	
<b>Physical</b>	I	I											E			E	E		R	R						R
Thermodynamics	I	I														E										
Quantum mechanics	I																E									
Kinetics		I															E									
<b>Laboratory hours</b>	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				R	R		E	E			
Plan & execute experiments using literature															E				R	R		E	E			
Communicate using oral & written reports	I	I				E							E		E				R	R		E	E			
Work in small teams	I	I				E							E		E				R	R		E	E			

Prerequisite and Ancillary Courses

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Ancillary Courses