Outcomes Assessment - Chemistry Department **Bachelor of Science Degree in Chemistry & Chemical Oceanography**

Total number of chemistry credits = 55 Total Number of Laboratory hours = 686

I = Introductory E = Emphasis
R = Reinforcement A = Advanced

	Freshman				Sophomore								Junior						Senior						
	~~CHM 101 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
Topic Areas Credit-hours	5	5	4	4	4	2	3	3	3	3	4	4	2	3	3	3	3	4	3	2	3	3	2	3	3
Analytical		I	Prerequisite and Ancillary Courses		E				Prerequisite and Ancillary Courses									Ancillary Courses				E, A	E, A		
Solve problems for aqueous solutions & equilibria		I			E																				
Use statistics in chemistry applications					E																	R			
Describe separations					I																	E			
Interpret spectra		I			R	I		I													R	E			
Chemical Oceanography																E	E							E	E
Inorganic	I	I																	E, A						
Categorize periodic properties	I																		E						
Distinguish bonding & structure	I																		E						
Explain main group chemistry	I																		E						
Explain transition metal chemistry																			E						
Organic	I					E	E	E												E, A	E, A				
Specify functional groups							E																		
Summarize structure & reactivity	I						E														E, R				
Describe and create reaction mechanisms							I	E													E, R				
Outline organic syntheses							I	E													E, R				
Physical	I	I											E	E	E										
Solve problems in thermodynamics	I	I												E											
Solve problems in quantum mechanics	I														E										
Solve problems in 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	