Natural Sciences																
Institutional (ILO), Program (PLO), and Course (SLO) Alignment																
		Numb	er of Courses:						-							
mistry			8													
L Contont	II. Critical	Creative						VI Information and								
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-		-					ion			- )						
4		4	4 1 3													
DS								(Rate 1-4)								
								Ι	11	Ш	IV	V	VI			
PLO # 1. Equation Writing Students will be able to express chemical reaction word problems in the correct format.						4	4	3	3	1	1					
PLO #2. Structural Representations of Compounds Students will be able to represent the structures of com			pound	ls bas	sed	4	4	2	0	4	0					
on chemical bonding theory.							4	4	3	3	1	2				
PLO #3. Lab Safety Students will take the necessary precautions to ensure proper laboratory safety.							4	2	2	2	2	1				
							ILOs to									
Course Level SLOs						-										
				54	50											
			P1	P2	P3	1	11		IV	V	VI					
•				,	Х			4	4	3	3	1	1			
CHEM 4 Beginning Chemistry: SLO #2 Structural Representations of Compounds Students will be																
		•		of compounds. The		Х		4	4	3	3	1	2			
r contain appropriate	bonds, ione	pairs, and ge	eometry.													
CHEM 4 Beginning Chemistry: SLO #3 Lab Safety Students will adhere to safety protocol in the																
laboratory regarding eye protection. Students will follow the proper procedure regarding wearing goggles in						4	2	2	2	2	1					
the laboratory, and keeping them on to protect their eyes.																
	I. Content Knowledge   4   DS   Writing Students will   Representations of g theory.   / Students will take th   / Chemistry: SLO #1   s, students will be ab   action type, predict th   ng Chemistry: SLO   / ia molecular mode   I contain appropriate   ng Chemistry: SLO   g eye protection. Students	I. Content Knowledge II. Critical and Ar Thir   4 II. Critical and Ar Thir   5 Writing Students will be able to e   Representations of Compound g theory. Representations of Compound g theory.   Y Students will take the necessary   Course   Course   Students will take the necessary   Course   Course	Number   I. Content Knowledge II. Critical, Creative, and Analytical Thinking   4 4   DS   Writing Students will be able to express chem   Representations of Compounds Students ways theory.   V Students will take the necessary precautions   Course Level SLO   Chemistry: SLO #1 Equation Writing On a s, students will be able to write the correct reaction type, predict the product formulas and and type, predict the product formulas and and the context of the product formulas and the context of the product formulas and the contain appropriate bonds, lone pairs, and get an olecular models or drawings) accur is a contain appropriate bonds, lone pairs, and get and contain appropriate bonds, lone pairs, and	Institutional (ILO), Program (PLO), and C   Number of Courses:   mistry 8   1. Content Knowledge II. Critical, Creative, and Analytical Thinking III. Communication and Comprehension   4 4 1   OS   Writing Students will be able to express chemical reaction word pro Representations of Compounds Students will be able to represer g theory.   V Students will take the necessary precautions to ensure proper labor   Course Level SLOs   Chemistry: SLO #1 Equation Writing On a written exercise, give is, students will be able to write the correct reactant formulas, states action type, predict the product formulas and balance the chemical for Chemistry: SLO #2 Structural Representations of Compound ia molecular models or drawings) accurate representations l contain appropriate bonds, lone pairs, and geometry.   ng Chemistry: SLO #3 Lab Safety Students will adhere to s g eye protection. Students will follow the proper procedure regarding	Institutional (ILO), Program (PLO), and Course (SLO) Alig   Number of Courses: Date Updated   mistry 8   1. Content II. Critical, Creative, and Analytical III. Communication IV. Professional and Personal   4 4 1 3   2 Comprehension Growth   4 4 1 3   2 S Writing Students will be able to express chemical reaction word problems in the correct for Representations of Compounds Students will be able to represent the structures of com g theory.   V Students will take the necessary precautions to ensure proper laboratory safety.   Course Level SLOs   Chemistry: SLO #1 Equation Writing On a written exercise, given the names of s, students will be able to write the correct reactant formulas, states of matter (when action type, predict the product formulas and balance the chemical equation.   ng Chemistry: SLO #2 Structural Representations of Compounds Students will be <i>i</i> a molecular models or drawings) accurate representations of compounds. The l contain appropriate bonds, lone pairs, and geometry.   ng Chemistry: SLO #3 Lab Safety Students will adhere to safety protocol in the g eye protection. Students will follow the proper procedure regarding wearing goggles in	Institutional (ILO), Program (PLO), and Course (SLO) Alignmed   Number of Courses: Date Updated   mistry and 11.2.13   I. Content II. Critical, Creative, and Analytical Thinking III. Communication and Personal Comprehension IV. Professional and Personal Growth V. Co   4 4 1 3 Collar   5S Writing Students will be able to express chemical reaction word problems in the correct format. Representations of Compounds Students will be able to represent the structures of compound g theory. Correct Program (Marcon)   Y Students will take the necessary precautions to ensure proper laboratory safety. Correct Program (Marcon) Correct Marcon)   Course Level SLOs Course Level SLOs Correct Marcon) Correct Marcon) Correct Marcon) Correct Marcon)   Chemistry: SLO #1 Equation Writing On a written exercise, given the names of s, students will be able to write the correct reactant formulas, states of matter (when action type, predict the product formulas and balance the chemical equation. X   Ig Chemistry: SLO #2 Structural Representations of Compounds Students will be ria molecular models or drawings) accurate representations of compounds. The l contain appropriate bonds, lone pairs, and geometry. The g eye protection. Students will follow the proper procedure regarding wearing goggles in	Institutional (ILO), Program (PLO), and Course (SLO) Alignment   Number of Courses: Date Updated 11.2.13   Number of Courses: Date Updated 11.2.13   I. Content Knowledge II. Critical, Creative, and Analytical Thinking III. Communication and Comprehension V. Professional and Personal Growth V. Commu Collaborat   4 4 1 3 2   OS   Writing Students will be able to express chemical reaction word problems in the correct format.   Representations of Compounds Students will be able to represent the structures of compounds base g theory.   Y Students will take the necessary precautions to ensure proper laboratory safety. Course Program Mark with X   Course Level SLOs Course Program Mark with X X   IChemistry: SLO #1 Equation Writing On a written exercise, given the names of s, students will be able to write the correct reactant formulas, states of matter (when action type, predict the product formulas and balance the chemical equation. X X   IChemistry: SLO #2 Structural Representations of Compounds Students will be ia molecular models or drawings) accurate representations of compounds. The is contain appropriate bonds, lone pairs, and geometry. X X   Ig Chemistry: SLO #3 Lab Safety Students will adhere to safety protocol in the g eye protection. Students will follow the proper procedure regarding wearin	Institutional (ILO), Program (PLO), and Course (SLO) Alignment   Number of Courses: Date Updated 11.2.13 Sub- T. de Incomposition   1. Content Knowledge II. Critical, Creative, and Analytical Thinking III. Communication and Comprehension IV. Professional Growth V. Community and Collaboration   4 4 1 3 2   DS   Writing Students will be able to express chemical reaction word problems in the correct format.   Representations of Compounds Students will be able to represent the structures of compounds based g theory. Course to Program SLO Alignment Mark with an X   // Chemistry: SLO #1 Equation Writing On a written exercise, given the names of is, students will be able to write the correct reactant formulas, states of matter (when action type, predict the product formulas and balance the chemical equation. X Image: Compounds Students will be an onecular models or drawings) accurate representations of compounds. The is contain appropriate bonds, lone pairs, and geometry. X Image: Compounds Students will adhere to safety protocol in the g eye protection. Students will follow the proper procedure regarding wearing goggles in g eye protection. Students will follow the proper procedure regarding wearing goggles in X	Institutional (ILO), Program (PLO), and Course (SLO) Alignment   Number of Courses: Date Updated Submit   mistry 8 11.2.13 T. James ext. 3   1. Content II. Critical, Creative, and Analytical III. Comprehension V. Community and Collaboration V.   4 4 1 3 2 7   OS Image: Comprehension of Compounds and Personal of Collaboration of Compounds students will be able to express chemical reaction word problems in the correct format. 4   Representations of Compounds Students will be able to represent the structures of compounds based g theory. 4   V Students will take the necessary precautions to ensure proper laboratory safety. 4   Course Level SLOS Course to Program SLO Alignment Mark with an action type, predict the product formulas and balance the chemical equation. 4   In Chemistry: SLO #1 Equation Writing On a written exercise, given the names of s, students will be able to write the correct reactant formulas, states of matter (when action type, predict the product formulas and balance the chemical equation. X 4   Mark or the product of mulas and geometry. X 4 4   In Chemistry: SLO #2 Structural Representations of Compounds. The is contain appropriate bonds, lone pairs, and geometry. X 4   In Chemis	Institutional (ILO), Program (PLO), and Course (SLO) Alignment   Number of Courses: Date Updated 11.2.13 Submitted I T. James Noy ext. 3356   1. Content Knowledge II. Critical, Creative, and Analytical Thinking III. Communication and Comprehension IV. Professional and Personal Growth V. Community and Collaboration VI. Inf Techn   4 4 1 3 2 III.   OS Expresentations of Compounds Students will be able to express chemical reaction word problems in the correct format. 4 4   Representations of Compounds Students will be able to represent the structures of compounds based g theory. 4 2   / Students will take the necessary precautions to ensure proper laboratory safety. 4 2   Course Level SLOs Program SLO Alignment Mark with an action type, predict the product formulas and balance the chemical equation. X 4 4   Q Chemistry: SLO #1 Equation Writing On a written exercise, given the names of s, students will be able to write the correct reactant formulas, states of matter (when action type, predict the product formulas and balance the chemical equation. X 4 4   mark in an action type, predict the product formulas and balance the chemical equation. X 4 4   mark in an appropriate bonds, lone pairs, and geometry. X	Institutional (ILO), Program (PLO), and Course (SLO) Alignment   Number of Courses: Date Updated 11.2.13 Submitted by T. James Noyes, ext. 3356   I. Content Knowledge II. Critical, Creative, and Analytical Thinking III. Communication and Comprehension IV. Professional and Personal Growth V. Community Collaboration V. Inform Technolog   4 4 1 3 2 III. Critical, Creative, and Analytical Thinking III. Critical, Creative, and Analytical Thinking III. Comprehension V. Community Growth V. Community Collaboration V. Inform Technolog   05 III. Critical, Creative, and Analytical III. Critical, Creative, and Analytical III. Critical, Creative, and Analytical III. Critical, Creative, and Analytical V. Community and Personal Growth V. Community Collaboration V. Inform Technolog   05 III. Critical, Creative, a theory. III. Critical, Creative, and theory. III. Critical, Creative, and theory. III. Critical, Creative, a theory. III. Critical, Creative, a theory. III. Critical, Creative, a theory. III. Critical, Creative, a theory. III. Creativ	Institutional (ILO), Program (PLO), and Course (SLO) Alignment   Number of Courses: Date Updated Submitted by   T. James Noyes, ext. 3356 T. James Noyes, ext. 3356   I. Content II. Critical, Creative, and Analytical III. Communication and Personal Collaboration V. Community and Personal Collaboration V. Community and Personal Collaboration V. Information Technology Lit   4 4 1 3 2 2 2   OS Hitting Students will be able to express chemical reaction word problems in the correct format. 4 4 3 3   Representations of Compounds Students will be able to represent the structures of compounds based g theory. 4 4 3 3   / Students will take the necessary precautions to ensure proper laboratory safety. 4 4 3 3   // Chemistry: SLO #1 Equation Writing On a written exercise, given the names of s, students will be able to write the correct reactant formulas, states of matter (when action type, predict the product formulas and balance the chemical equation. X 4 4 3 3   // Chemistry: SLO #2 Structural Representations of Compounds. Students will be balance the chemical equation. X 4 4 3 3   // Chemistry: SLO #3 Lab Safety Student	Institutional (ILO), Program (PLO), and Course (SLO) Alignment   Number of Courses: Date Updated 11.2.13 Submitted by T. James Noyes, ext. 3356   I. Content Knowledge II. Critical, Creative, and Analytical Thinking III. Communication and Comprehension IV. Professional and Personal Growth V. Community and Collaboration VI. Information an Technology Literat (Rate 1-4)   2 2 2 2 2 2   Ds III. Critical, Creative, and Analytical Thinking III. Communication and Comprehension IV. Professional and Personal Growth V. Community and Collaboration VI. Information an Technology Literat (Rate 1-4)   Os VI. Information an Collaboration VI. Information an Technology Literat (Rate 1-4) VI. Information an Technology Literat (Rate 1-4)   Os VI. Information an Comprehension VI. Information an Collaboration VI. Information an Technology Literat (Rate 1-4) VI. Information an Technology Literat (Rate 1-4)   V Writing Students will be able to express chemical reaction word problems in the correct format. VI. Information an Technology Literat (Rate 1-4)   V Vertifies Students will take the necessary precautions to ensure proper laboratory safety. 4 4 2 2 2 2   V Course to Program SLO Alignment (Rate 1-4)			

Course Level SLOs		Course to Program SLO Alignment Mark with an X			ILOs to Course SLOs Alignment (Rate 1-4)						
	P1	P2	P3	Ι	II		IV	V	VI		
<b>CHEM 1A General Chemistry I: SLO #1 Equation Writing</b> On a written exercise, given the names of chemical compounds, students will be able to write the correct reactant formulas, states of matter (when required), identify reaction type, predict the product formulas and balance the chemical equation.	х			4	4	3	3	1	1		
<b>CHEM 1A General Chemistry I: SLO #2 Structural Representations of Compounds</b> Students will be able to create (via molecular models or drawings) accurate representations of compounds. The representations will contain appropriate bonds, lone pairs, and geometry.		х		4	4	3	3	1	2		
<b>CHEM 1A General Chemistry I: SLO #3 Lab Safety</b> Students will adhere to safety protocol in the laboratory regarding eye protection. Students will follow the proper procedure regarding wearing goggles in the laboratory, and keeping them on to protect their eyes.			x	4	2	2	2	2	1		
<b>CHEM 1B General Chemistry II: SLO #1 Equation Writing</b> On a written exercise, given the names of chemical compounds, students will be able to write the correct reactant formulas, states of matter (when required), identify reaction type, predict the product formulas and balance the chemical equation.	х			4	4	3	3	1	2		
<b>CHEM 1B General Chemistry II: SLO #2 Structural Representations of Compounds</b> Students will be able to create (via molecular models or drawings) accurate representations of compounds. The representations will contain appropriate bonds, lone pairs, and geometry.		X		4	4	3	3	1	2		
<b>CHEM 1B General Chemistry II: SLO #3 Lab Safety</b> Students will adhere to safety protocol in the laboratory regarding eye protection. Students will follow the proper procedure regarding wearing goggles in the laboratory, and keeping them on to protect their eyes.			х	4	2	2	2	2	1		

Course Level SLOs		Course to Program SLO Alignment Mark with an X			ILOs to Course SLOs Alignment (Rate 1-4)						
	P1	P2	P3	Ι	II	III	IV	V	VI		
<b>CHEM 7A Organic Chemistry I: SLO #1 Equation Writing</b> On a written exercise, given the structures of reactants for a reaction, students will be able to write the correct structures of products and identify the reaction type.	x			4	4	3	3	1	1		
<b>CHEM 7A Organic Chemistry I: SLO #2 Structural Representations of Compounds</b> Students will be able to create (via molecular models or drawings) accurate representations of compounds. The representations will contain appropriate bonds, lone pairs, and geometry.		х		4	4	3	3	1	2		
<b>CHEM 7A Organic Chemistry I: SLO #3 Lab Safety</b> Students will adhere to safety protocol in the laboratory regarding eye protection. Students will follow the proper procedure regarding wearing goggles in the laboratory, and keeping them on to protect their eyes.			х	4	2	2	2	2	1		
<b>CHEM 7B Organic Chemistry II: SLO #1 Equation Writing</b> On a written exercise, given the structures of reactants for a reaction, students will be able to write the correct structures of products and identify the reaction type.	x			4	4	3	3	1	1		
<b>CHEM 7B Organic Chemistry II: SLO #2 Structural Representations of Compounds</b> Students will be able to create (via molecular models or drawings) accurate representations of compounds. The representations will contain appropriate bonds, lone pairs, and geometry.		х		4	4	3	3	1	2		
<b>CHEM 7B Organic Chemistry II: SLO #3 Lab Safety</b> Students will adhere to safety protocol in the laboratory regarding eye protection. Students will follow the proper procedure regarding wearing goggles in the laboratory, and keeping them on to protect their eyes.			х	4	4	2	2	2	1		

Course Level SLOs		Course to Program SLO Alignment Mark with an X			ILOs to Course SLOs Alignment (Rate 1-4)						
	P1	P2	P3	Ι	II		IV	V	VI		
<b>CHEM 20 Fundamentals of Chemistry: SLO #1 Equation Writing</b> On a written exercise, given the chemical formulas of reactants, students will be able to write the correct formulas of products, identify the reaction type and balance the equation.	x			4	4	3	3	1	1		
<b>CHEM 20 Fundamentals of Chemistry: SLO #2 Structural Representations of Compounds</b> Students will be able to create (via molecular models or drawings) accurate representations of compounds. The representations will contain appropriate bonds, lone pairs, and geometry.		х		4	4	3	3	1	2		
<b>CHEM 20 Fundamentals of Chemistry: SLO #3 Lab Safety</b> Students will adhere to safety protocol in the laboratory regarding eye protection. Students will follow the proper procedure regarding wearing goggles in the laboratory, and keeping them on to protect their eyes.			х	4	2	2	2	2	1		
<b>CHEM 21A Survey of General and Organic Chemistry: SLO #1 Equation Writing</b> On a written exercise, given the names of chemical compounds, students will be able to write the correct reactant formulas, states of matter (when required), identify reaction type, predict the product formulas and balance the chemical equation.	х			4	4	3	3	1	1		
CHEM 21A Survey of General and Organic Chemistry: SLO #2 Structural Representations of Compounds Students will be able to create (via molecular models or drawings) accurate representations of compounds. The representations will contain appropriate bonds, lone pairs, and geometry.		х		4	4	3	3	1	2		
<b>CHEM 21A Survey of General and Organic Chemistry: SLO #3 Lab Safety</b> Students will adhere to safety protocol in the laboratory regarding eye protection. Students will follow the proper procedure regarding wearing goggles in the laboratory, and keeping them on to protect their eyes.			х	4	2	2	2	2	1		
<b>CHEM 21B Survey of Organic and Biochemistry: SLO #1 Equation Writing</b> On a written exercise, given the structures of reactants for a reaction, students will be able to write the correct structures of products and identify the reaction type.	x			4	4	3	3	1	2		
<b>CHEM 21B Survey of Organic and Biochemistry: SLO #2 Structural Representations of Compounds</b> Students will be able to create (via molecular models or drawings) accurate representations of compounds. The representations will contain appropriate bonds, lone pairs, and geometry.		х		4	4	3	3	1	2		
<b>CHEM 21B Survey of Organic and Biochemistry: SLO #3 Lab Safety</b> Students will adhere to safety protocol in the laboratory regarding eye protection. Students will follow the proper procedure regarding wearing goggles in the laboratory, and keeping them on to protect their eyes.			x	4	2	2	4	2	1		