

Natural Sciences
Institutional (ILO), Program (PLO), and Course (SLO) Alignment

Program: Chemistry		Number of Courses: 8		Date Updated 11.2.13		Submitted by T. James Noyes, ext. 3356								
Institutional SLOs	I. Content Knowledge	II. Critical, Creative, and Analytical Thinking	III. Communication and Comprehension	IV. Professional and Personal Growth	V. Community and Collaboration	VI. Information and Technology Literacy								
Program Rating	4	4	1	3	2	2								
Program Level SLOS						ILOs to PLOs Alignment (Rate 1-4)								
						I	II	III	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 compounds based 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			
Course Level SLOs					Course to Program SLO Alignment Mark with an X			ILOs to Course SLOs Alignment (Rate 1-4)						
					P1	P2	P3	I	II	III	IV	V	VI	
CHEM 4 Beginning Chemistry: SLO #1 Equation Writing 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.						X			4	4	3	3	1	1
CHEM 4 Beginning 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.							X		4	4	3	3	1	2
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 the laboratory, and keeping them on to protect their eyes.								X	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	I	II	III	IV	V	VI
CHEM 1A General Chemistry I: SLO #1 Equation Writing 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.	X			4	4	3	3	1	1
CHEM 1A General Chemistry I: 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.		X		4	4	3	3	1	2
CHEM 1A General Chemistry I: 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 the laboratory, and keeping them on to protect their eyes.			X	4	2	2	2	2	1
CHEM 1B General Chemistry II: SLO #1 Equation Writing 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.	X			4	4	3	3	1	2
CHEM 1B General Chemistry II: 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.		X		4	4	3	3	1	2
CHEM 1B General Chemistry II: 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 the laboratory, and keeping them on to protect their eyes.			X	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	I	II	III	IV	V	VI
CHEM 7A Organic Chemistry I: SLO #1 Equation Writing 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
CHEM 7A Organic Chemistry I: 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.		X		4	4	3	3	1	2
CHEM 7A Organic Chemistry I: 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 the laboratory, and keeping them on to protect their eyes.			X	4	2	2	2	2	1
CHEM 7B Organic Chemistry II: SLO #1 Equation Writing 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
CHEM 7B Organic Chemistry II: 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.		X		4	4	3	3	1	2
CHEM 7B Organic Chemistry II: 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 the laboratory, and keeping them on to protect their eyes.			X	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	I	II	III	IV	V	VI
CHEM 20 Fundamentals of Chemistry: SLO #1 Equation Writing 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
CHEM 20 Fundamentals of 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.		X		4	4	3	3	1	2
CHEM 20 Fundamentals of 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 the laboratory, and keeping them on to protect their eyes.			X	4	2	2	2	2	1
CHEM 21A Survey of General and Organic Chemistry: SLO #1 Equation Writing 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.	X			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.		X		4	4	3	3	1	2
CHEM 21A Survey of General and Organic 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 the laboratory, and keeping them on to protect their eyes.			X	4	2	2	2	2	1
CHEM 21B Survey of Organic and Biochemistry: SLO #1 Equation Writing 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
CHEM 21B Survey of Organic and Biochemistry: 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.		X		4	4	3	3	1	2
CHEM 21B Survey of Organic and Biochemistry: 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 the laboratory, and keeping them on to protect their eyes.			X	4	2	2	4	2	1