# Assessment Impact by Course Objectives Palau Community College Program (ES) - Environmental Marine Science

## **Program (ES) - Environmental Marine Science**

#### CLO: SC 161 - General Chemistry II: CLO 1

KNOWLEDGE IN GENERAL CHEMISTRY: Student gains in-depth knowledge in the fundamental concepts in general chemistry

#### CLO Assessment Cycle: 2014-2015 (Fall 2014)

CLO Status: Active

leans of Assessment	Exported Student Deufermonee		
	Expected Student Performance	Notes	Active
tegrate, analyze, and apply all of the general chemistry concepts and principles: phases matter; gas properties and gas laws; solution formation, solubility, and colligative operties of solutions; determining strengths of acids and bases, and buffering systems; tablishing chemical equilibrium and applying Le Chatelier's principle to predict manges in a system; oxidation-reduction reactions and applications; radioactivity and its pplications; hydrocarbons; and biochemistry of macromolecules including proteins, zymes, carbohydrates, nucleic acids, and lipids. <b>gnature assignment:</b> nal Exam	the proficiency level.		Yes
epare the following gases and investigate their properties: hydrogen, oxygen, and rbon dioxide; Investigate and describe the behavior of ideal gas samples under fferent pressure, volume, and temperature conditions; Determine the solubility of a ven salt and prepare solubility curve for the given salt; Investigate the effect of adding solute has on the boiling and freezing points of a solvent; Use different techniques to termine the pH and pOH values of various concentrations of acids, bases, and salts by e three methods: pH meter, titration, and pH paper; Apply the titration process to alyze unknown concentration of an acidic solution such as vinegar; Investigate the fect of adding small amounts of strong acids and bases to several buffer systems and termine how effectively each system resists large changes in pH; Investigate how ttside forces acting on a system at equilibrium provoke changes within the system (Le natelier's Principle); Investigate the electrolysis of water and compare it to the ectrolysis of a solution of the salt potassium iodide; Synthesize different esters by acting organic acid (carboxylic acid) and an alcohol, using sulfuric acid as reaction talys; Demonstrate the process of hydrolyzing esters; Detect and characterize oteinaceous materials using the following protein tests: Biuret test, Xanthoproteic test, d Lead Acetate test for sulfur; Apply the denaturation of protein; Examine the catalytic operties of several common enzymes: ptyalin (salivary amylase), proteases, and talase. <b>gnature assignment:</b> ab Journal	,		Yes

Results			
Summary of Data Collected	Use of Results	Follow-Up	Semester Assessed
Lab Journal - 12/23/2014 - 100% of the students assessed performed at the proficiency level <b>Expected Student Performance Met:</b> Yes <b>Related Documents:</b> Lab Journal	04/09/2015 - No action needed at this time as the expected outcome has been met 04/09/2015 - No action needed at this time as the expected outcome has been met		2014 - 2015 (Fall 2014)
Final Exam - 12/23/2014 - 100% of the students assessed performed at the proficiency level <b>Expected Student Performance Met:</b> Yes <b>Related Documents:</b> Final Exam Scan	04/09/2015 - No action needed at this time as the expected outcome has been met		2014 - 2015 (Fall 2014)

## CLO: SC 161 - General Chemistry II: CLO 2

SCIENTIFIC INQUIRY: Students develop abilities to conduct scientific investigations and analyze data

## CLO Assessment Cycle: 2014-2015 (Fall 2014)

CLO Status: Active

Means of AssessmentExpected Student PerformanceNotesActivePrepare the following gases and investigate their properties: hydrogen, oxygen, and carbon dioxide; Investigate and describe the behavior of ideal gas samples under different pressure, volume, and temperature conditions; Determine the solubility of a given salt and prepare solubility curve for the given salt; Investigate the effect of adding a solute has on the boiling and freezing points of a solvent; Use different techniques to determine the pH and pOH values of various concentrations of acids, bases, and salts by the three methods: pH meter, titration, and pH paper; Apply the titration process to analyze unknown concentration of an acidic solution such as vinegar; Investigate the effect of adding small amounts of strong acids and bases to several buffer systems and determine how effectively each system resists large changes in pH; Investigate how outside forces acting on a system at equilibrium provoke changes within the system (Le Chatelier's Principle); Investigate the electrolysis of water and compare it to the electrolysis of a solution of the salt potassium iodide; Synthesize different testers by reacting organic acid (carboxylic acid) and an alcohol, using sulfuric acid as reaction catalys; Demonstrate the process of hydrolyzing esters; Detect and characterize remutince means metric how in the following remain term is following the tart of characterize metric to the discover and the process of hydrolyzing esters; Detect and characterize metric to the process of hydrolyzing esters; Detect and characterize metric to the process of hydrolyzing esters; Detect and characterize metric to the process of hydrolyzing esters; Detect and characterize metric to the process of hydrolyzing esters; Detect and characterize metric to the process of hydrolyzing esters; Detect and characterize metric to the present to	Means of Assessment			
carbon dioxide; Investigate and describe the behavior of ideal gas samples under different pressure, volume, and temperature conditions; Determine the solubility of a given salt and prepare solubility curve for the given salt; Investigate the effect of adding a solute has on the boiling and freezing points of a solvent; Use different techniques to determine the pH and pOH values of various concentrations of acids, bases, and salts by the three methods: pH meter, titration, and pH paper; Apply the titration process to analyze unknown concentration of an acidic solution such as vinegar; Investigate the effect of adding small amounts of strong acids and bases to several buffer systems and determine how effectively each system resists large changes in pH; Investigate how outside forces acting on a system at equilibrium provoke changes within the system (Le Chatelier's Principle); Investigate the electrolysis of water and compare it to the electrolysis of a solution of the salt potassium iodide; Synthesize different esters by reacting organic acid (carboxylic acid) and an alcohol, using sulfuric acid as reaction catalys; Demonstrate the process of hydrolyzing esters; Detect and characterize	Means of Assessment	Expected Student Performance	Notes	Active
and Lead Acetate test for sulfur; Apply the denaturation of protein; Examine the catalytic properties of several common enzymes: ptyalin (salivary amylase), proteases, and catalase. Signature assignment: Lab Journal	arbon dioxide; Investigate and describe the behavior of ideal gas samples under lifferent pressure, volume, and temperature conditions; Determine the solubility of a given salt and prepare solubility curve for the given salt; Investigate the effect of addin a solute has on the boiling and freezing points of a solvent; Use different techniques to letermine the pH and pOH values of various concentrations of acids, bases, and salts b he three methods: pH meter, titration, and pH paper; Apply the titration process to analyze unknown concentration of an acidic solution such as vinegar; Investigate the effect of adding small amounts of strong acids and bases to several buffer systems and letermine how effectively each system resists large changes in pH; Investigate how butside forces acting on a system at equilibrium provoke changes within the system (Lu Chatelier's Principle); Investigate the electrolysis of water and compare it to the electrolysis of a solution of the salt potassium iodide; Synthesize different esters by eacting organic acid (carboxylic acid) and an alcohol, using sulfuric acid as reaction atalys; Demonstrate the process of hydrolyzing esters; Detect and characterize proteinaceous materials using the following protein tests: Biuret test, Xanthoproteic te and Lead Acetate test for sulfur; Apply the denaturation of protein; Examine the cataly properties of several common enzymes: ptyalin (salivary amylase), proteases, and stalase. Signature assignment:	the proficiency level.		Yes

Results			
Summary of Data Collected	Use of Results	Follow-Up	Semester Assessed
Lab Journal - 12/23/2014 - 100% of the students assessed performed at the proficiency level <b>Expected Student Performance Met:</b> Yes	04/09/2015 - No action needed at this time as the expected outcome has been met		2014 - 2015 (Fall 2014)
Related Documents: Lab Journal			

## CLO: SC 161 - General Chemistry II: CLO 3

SCIENTIFIC MEASUREMENTS: Students acquire skills in collecting and reporting quantitative information from scientific investigations to describe chemical properties of matter

#### CLO Assessment Cycle: 2014-2015 (Fall 2014)

CLO Status: Active

Means of Assessment				
Means of Assessment	Expected Student Performance	Notes	Active	
Integrate, analyze, and apply all of the general chemistry concepts and principles: phases of matter; gas properties and gas laws; solution formation, solubility, and colligative properties of solutions; determining strengths of acids and bases, and buffering systems; establishing chemical equilibrium and applying Le Chatelier's principle to predict changes in a system; oxidation-reduction reactions and applications; radioactivity and its applications; hydrocarbons; and biochemistry of macromolecules including proteins, enzymes, carbohydrates, nucleic acids, and lipids. <b>Signature assignment:</b> Final Exam	the proficiency level.		Yes	
Prepare the following gases and investigate their properties: hydrogen, oxygen, and carbon dioxide; Investigate and describe the behavior of ideal gas samples under different pressure, volume, and temperature conditions; Determine the solubility of a given salt and prepare solubility curve for the given salt; Investigate the effect of adding a solute has on the boiling and freezing points of a solvent; Use different techniques to determine the pH and pOH values of various concentrations of acids, bases, and salts by the three methods: pH meter, titration, and pH paper; Apply the titration process to analyze unknown concentration of an acidic solution such as vinegar; Investigate the effect of adding small amounts of strong acids and bases to several buffer systems and determine how effectively each system resists large changes in pH; Investigate how outside forces acting on a system at equilibrium provoke changes within the system (Le Chatelier's Principle); Investigate the electrolysis of water and compare it to the electrolysis of a solution of the salt potassium iodide; Synthesize different esters by reacting organic acid (carboxylic acid) and an alcohol, using sulfuric acid as reaction catalys; Demonstrate the process of hydrolyzing esters; Detect and characterize proteinaceous materials using the following protein tests: Biuret test, Xanthoproteic test, and Lead Acetate test for sulfur; Apply the denaturation of protein; Examine the catalytic properties of several common enzymes: ptyalin (salivary amylase), proteases, and catalase. <b>Signature assignment:</b> Lab Journal			Yes	

Results			
Summary of Data Collected	Use of Results	Follow-Up	Semester Assessed
Lab Journal - 12/23/2014 - 100% of the students assessed performed at the proficiency level <b>Expected Student Performance Met:</b> Yes <b>Related Documents:</b>	04/09/2015 - No action needed at this time as the expected outcome has been met		2014 - 2015 (Fall 2014)
Lab Journal Final Exam - 12/23/2014 - 100% of the students assessed performed at the proficiency level	04/09/2015 - No action needed at this time as the expected outcome has been met		2014 - 2015 (Fall 2014)
Expected Student Performance Met: Yes	-		
Related Documents: final exam			