Unit Course Assessment Report - Four Column

Ferris State University

Z - CHEM Courses

Course Outcomes	Means of Assessment & Criteria for Success / Tasks	Results	Action & Follow-Up
Z - CHEM Courses - CHEM 121 - General Chemistry 1 - Apply scientific method - Apply the scientific method to solve chemical problems, interpret chemical phenomena and propose reasonable explanations.	**Assessment Method:** Students will take a version of the ACS (American Chemical Society) First Term General Chemistry standardized examination at the end of CHEM 121. Each question that requires the students to apply specific knowledge is analyzed. **Assessment Method Category:** Test - External - Post or Pre/Post **Criterion for Success:** Students will average at least 65% on the selected questions	03/22/2011 - Spring and Fall 2010 - 18 CHEM 121 sections (from 4 different professors) took one of two versions of an ACS First Year General Chemistry Exam. An average grade of 64.4% was earned on selected questions for this outcome. **Classification:** Criterion Not Met **Action:** 2 - Pending Action	03/22/2011 - Re-evaluate Topical Outline of CHEM 121 to allow for more teaching days for difficult concepts. Coordinate a standardized Topic Outline for CHEM 121 that each professor agrees with and that coincides with CHEM 122 outcomes.
Z - CHEM Courses - CHEM 121 - General Chemistry 1 - Organize periodic properties - Use the periodic table to organize and correlate electronic structure, properties and reactivity of elements and compounds.	**Assessment Method:** Students will take a version of the ACS (American Chemical Society) First Term General Chemistry standardized examination at the end of CHEM 121. Each question that requires the students to organize periodic properties is analyzed. **Assessment Method Category:** Test - External - Post or Pre/Post **Criterion for Success:** Students will average at least 65% on the selected questions	03/22/2011 - Spring and Fall 2010 - 18 CHEM 121 sections (from 4 different professors) took one of two versions of an ACS First Year General Chemistry Exam. An average grade of 69.2% was earned on selected questions for this outcome. **Classification:** Criterion Met **Action:** 1 - No Action Required	03/22/2011 - Professors will continue to discuss methods currently being used to achieve success on this outcome with the anticipation of applying these methods to other, more difficult outcomes.
Z - CHEM Courses - CHEM 121 - General Chemistry 1 - Carry out conversions - Carry out unit and molar conversions in stoichiometric problems.	**Assessment Method:** Students will take a version of the ACS (American Chemical Society) First Term General Chemistry standardized examination at the end of CHEM 121. Each question that requires the students to carry out conversions is analyzed. **Assessment Method Category:** Test - External - Post or Pre/Post **Criterion for Success:**	03/22/2011 - Spring and Fall 2010 - 18 CHEM 121 sections (from 4 different professors) took one of two versions of an ACS First Year General Chemistry Exam. An average grade of 68.9% was earned on selected questions for this outcome. **Classification:** Criterion Met **Action:** 1 - No Action Required	03/22/2011 - Professors will continue to discuss methods currently being used to achieve success on this outcome with the anticipation of applying these methods to other, more difficult outcomes.

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	Students will average at least 65% on the selected questions		
Z - CHEM Courses - CHEM 121 - General Chemistry 1 - Name and draw compounds - Name and identify simple inorganic molecules and draw their overall geometry.	**Assessment Method:** Students will take a version of the ACS (American Chemical Society) First Term General Chemistry standardized examination at the end of CHEM 121. Each question that requires the students to name and draw compounds is analyzed. **Assessment Method Category:** Test - External - Post or Pre/Post **Criterion for Success:** Students will average at least 65% on the selected questions	03/22/2011 - Spring and Fall 2010 - 18 CHEM 121 sections (from 4 different professors) took one of two versions of an ACS First Year General Chemistry Exam. An average grade of 72.2% was earned on selected questions for this outcome. **Classification:** Criterion Met **Action:** 1 - No Action Required	03/22/2011 - Professors will continue to discuss methods currently being used to achieve success on this outcome with the anticipation of applying these methods to other, more difficult outcomes.
Z - CHEM Courses - CHEM 121 - General Chemistry 1 - Explain properties of matter - Explain the nature and properties of matter, including the types of attractions, from a macroscopic and atomic perspective.	**Assessment Method:** Students will take a version of the ACS (American Chemical Society) First Term General Chemistry standardized examination at the end of CHEM 121. Each question that requires the students to explain properties of matter is analyzed. **Assessment Method Category:** Test - External - Post or Pre/Post **Criterion for Success:** Students will average at least 65% on the selected questions	03/22/2011 - Spring and Fall 2010 - 18 CHEM 121 sections (from 4 different professors) took one of two versions of an ACS First Year General Chemistry Exam. An average grade of 64.0% was earned on selected questions for this outcome. **Classification:** Criterion Not Met **Action:** 2 - Pending Action	03/22/2011 - Re-evaluate Topical Outline of CHEM 121 to allow for more teaching days for difficult concepts. Coordinate a standardized Topic Outline for CHEM 121 that each professor agrees with and that coincides with CHEM 122 outcomes.
Z - CHEM Courses - CHEM 121 - General Chemistry 1 - Identify reaction types - Identify different types of chemical reactions and write various forms of balanced equations for reactions in aqueous solution.	**Assessment Method:** Students will take a version of the ACS (American Chemical Society) First Term General Chemistry standardized examination at the end of CHEM 121. Each question that requires the students to identify reaction types is analyzed. **Assessment Method Category:** Test - External - Post or Pre/Post **Criterion for Success:** Students will average at least 65% on the	03/22/2011 - Spring and Fall 2010 - 18 CHEM 121 sections (from 4 different professors) took one of two versions of an ACS First Year General Chemistry Exam. An average grade of 64.8% was earned on selected questions for this outcome. **Classification:** Criterion Not Met **Action:** 2 - Pending Action	03/22/2011 - Re-evaluate Topical Outline of CHEM 121 to allow for more teaching days for difficult concepts. Coordinate a standardized Topic Outline for CHEM 121 that each professor agrees with and that coincides with CHEM 122 outcomes.

Course Outcomes	Means of Assessment & Criteria for Success / Tasks	Results	Action & Follow-Up
	selected questions		
Z - CHEM Courses - CHEM 121 - General Chemistry 1 - Calculate energetics - Calculate enthalpy changes of reactions using calorimetry data, standard enthalpies of formation, Hess's law, and bond energies.	**Assessment Method:** Students will take a version of the ACS (American Chemical Society) First Term General Chemistry standardized examination at the end of CHEM 121. Each question that requires the students to calculate energies is analyzed. **Assessment Method Category:** Test - External - Post or Pre/Post **Criterion for Success:** Students will average at least 65% on the selected questions	03/22/2011 - Spring and Fall 2010 - 18 CHEM 121 sections (from 4 different professors) took one of two versions of an ACS First Year General Chemistry Exam. An average grade of 64.4% was earned on selected questions for this outcome. **Classification:** Criterion Not Met **Action:** 2 - Pending Action	03/22/2011 - Re-evaluate Topical Outline of CHEM 121 to allow for more teaching days for difficult concepts. Coordinate a standardized Topic Outline for CHEM 121 that each professor agrees with and that coincides with CHEM 122 outcomes. 03/22/2011 - Each professor will investigate ways to improve coverage of these topics and discuss these improvements at the next assessment meeting. 03/22/2011 - Notice that this outcome is the most difficult for students