

# Course Assessment Results aligned to Program SLOs

## San Mateo CCCD

### CAN Program - Physical Sciences

SLO	Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
Use the scientific method and appreciate its importance to the development of scientific thought.	CAN Dept - Chemistry - CAN CHEM 192 - Elementary Chemistry - Matter - The student will understand the three states of matter as well as the difference between a pure substance and a mixture. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Question on a midterm examination and/or the final examination <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> 80% completion	09/10/2012 - 81% correct on multiple choice test question #3 pertaining to interaction between particles in states of matter. The complete test is a related document. <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2012 - 2013 <b>Related Documents:</b> <a href="#">Fall 2012 first midterm Medina</a>	10/12/2012 - No action needed at this time  <b>Action Plan Category:</b> Other
			09/12/2011 - 88% in conceptual type questions 21-71% in questions involving critical thinking <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2011 - 2012 <b>Related Documents:</b> <a href="#">Fall 2011 Chem 192 Wilcox</a>	10/03/2011 - 1. Give more examples of reactions showing elements " compounds 2. Almost all who missed this question answered gCh which correlates with #17 (failure to comprehend that compounds are pure substances. Need more discussion describing compounds and molecules, give more examples of chemical decomposition.  <b>Action Plan Category:</b> Use New or Revised Teaching methods
			05/25/2010 - Be able to distinguish between chemical and physical properties. Note that this SLO is related to the Mattee SLO described above but not entirely the same. Direct comparison is not appropriate. 72% completion <b>Result Type:</b> Inconclusive <b>Reporting Cycle:</b> 2009 - 2010	06/15/2010 - No action plan  <b>Action Plan Category:</b> Other

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			<p><b>Related Documents:</b>  <a href="#">SLO_History_Chem192 - Nick de Mello.pdf</a></p> <p>12/15/2009 - Two parts of one question on the final:            Part A: Understands the difference between the three states of matter. 100% completion.            Part B: Differentiates between pure substances and mixtures. 81% completion.</p> <p><b>Result Type:</b>            Criterion met</p> <p><b>Reporting Cycle:</b>            2009 - 2010</p>	<p>12/21/2010 - No action required</p> <p><b>Action Plan Category:</b>            Other</p>
			<p><b>Related Documents:</b>  <a href="#">SLO_History_Chem192 - Nick de Mello.pdf</a></p> <p>12/15/2008 - Final Exam:            4 - 8 students            3 - 6 Students            2 - 5 students            70% of students got the equivalent to A or B grades            1 - 0 students</p> <p><b>Result Type:</b>            Criterion not met</p> <p><b>Reporting Cycle:</b>            2009 - 2010</p>	<p>05/31/2009 - Find alternative ways to present and evaluate the topic.</p> <p><b>Action Plan Category:</b>            Use New or Revised Teaching methods</p>
			<p><b>Related Documents:</b>  <a href="#">Fall 2008 CHEM 192</a></p> <p>09/15/2008 - Midterm Exam            4 - 4 students            3 - 9 students            2 - 4 students            65% of students got A or B grades            1 - 3 students</p> <p><b>Result Type:</b>            Criterion not met</p> <p><b>Reporting Cycle:</b></p>	<p>05/31/2009 - Use alternative methods to introduce and evaluate the topic.</p> <p><b>Action Plan Category:</b>            Use New or Revised Teaching methods</p>

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			2009 - 2010 <b>Related Documents:</b> <a href="#">Fall 2008 CHEM 192</a>		
	CAN Dept - Chemistry - CAN CHEM 210 - General Chemistry I - Matter - Recognize states of matter, classes of matter, properties of matter and discuss units of measurements of mass, length and volume and perform conversions between units using the metric system, the English system, or between both. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Questions on a midterm or the final exam. <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> 70% completion	<b>Assessment Method:</b> Laboratory exercise to experimentally collect mass and volume data. <b>Assessment Method Category:</b> Other <b>Success Criterion:</b> 80% successfully complete the task	08/14/2010 - 87% of students obtained an A <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2010 - 2011 <b>Related Documents:</b> <a href="#">Fall 2010 CHEM 210</a>	12/21/2010 - No further action needed  <b>Action Plan Category:</b> Other
	CAN Dept - Chemistry - CAN CHEM 210 - General Chemistry I - Lab report - Write laboratory reports, applying the scientific method. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Written laboratory report <b>Assessment Method Category:</b> Other <b>Success Criterion:</b> 80% completion	12/20/2009 - Raw Data: 4: 10 students 3: 3 students 2: 1 student 1: 0 students Note: 4 students did not turn in the assignment. 72% of students successfully completed this task <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2009 - 2010	12/20/2009 - Give examples of a good written laboratory report  <b>Action Plan Category:</b> Other	

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			<b>Related Documents:</b> <a href="#">Mimosa CHEM210_Fall2009.doc</a>	
	CAN Dept - Chemistry - CAN CHEM 210 - General Chemistry I - Stoichiometry - Balance chemical equations and perform calculations that may involve stoichiometric conversions (e.g., mol-mol, gram-mol, gram-gram, gram-molecules, gram-liters of solution, determine the limiting reactant and the amount of excess reactant(s) remaining after the reaction from stoichiometry etc.). (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Exam questions that ask for this calculation <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> Success is achieved if 90% of students achieve the student learning outcome with a score of 70% or higher during the assigned "assessment" activity. Learning outcome is not achieved if these criteria are not met.	03/31/2013 - This multipart question was focused on writing and balancing net ionic equations. Some students had trouble working with solid substances. Different sections showed different degrees of success <b>Result Type:</b> Inconclusive <b>Reporting Cycle:</b> 2012 - 2013 <b>Related Documents:</b> <a href="#">CHEM 210 Spring 2013.docx</a>	03/31/2013 - Introduce several examples working with sodium bicarbonate or sodium carbonate in solid state.  <b>Action Plan Category:</b> Use New or Revised Teaching methods
	CAN Dept - Chemistry - CAN CHEM 210 - General Chemistry I - Chemical Structure - Draw Lewis structures of simple and complex molecules including multiple bonds and lone pairs and use VSEPR theory to predict the three-dimensional shape of any molecule (or polyatomic ion) when given the formula. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Exam question <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> Success is achieved if 90% of students achieve the student learning outcome with a score of 70% or higher during the assigned "assessment" activity. Learning outcome is not achieved if these criteria are not met.	05/30/2012 - One question on the Spring 2012 final exam was evaluated. This resulted in 81% completion. The question can be found in the document repository. <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2011 - 2012 <b>Related Documents:</b> <a href="#">Spring 2012</a>	05/30/2012 - No action required  <b>Action Plan Category:</b> Other
	CAN Dept - Chemistry - CAN CHEM 210 - General Chemistry I - Gases - Apply the gas laws to solve for initial or final conditions after changes in temperature, volume, pressure or number of moles. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Exam questions <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> Success is achieved if 90% of students		

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		<p>achieve the student learning outcome with a score of 70% or higher during the assigned "assessment" activity. Learning outcome is not achieved if these criteria are not met.</p>		
	<p>CAN Dept - Chemistry - CAN CHEM 220 - General Chemistry II - Equilibrium - Discuss chemical equilibrium and apply the concept to acid-base reactions and buffer solutions (Created By CAN Dept - Chemistry)</p>	<p><b>Assessment Method:</b> One or more questions will be included in midterms and the final exam. <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> 70% completion</p>	<p>05/23/2010 - 37% of students answer the final exam on this topic correctly <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2009 - 2010 <b>Related Documents:</b> <a href="#">SP 2010 SLO_summary_CH220.xlsx</a></p>	<p>05/31/2010 - Break down the material further. Give students shorter and more focused quizzes as the assessment tool.  <b>Action Plan Category:</b> Use New or Revised Teaching methods</p>
	<p>CAN Dept - Chemistry - CAN CHEM 220 - General Chemistry II - Acid- Base Equilibrium - Apply Ka, Kb, pKa, pKb, and pH concepts on complex equilibrium calculations (Created By CAN Dept - Chemistry)</p>	<p><b>Assessment Method:</b> One or more questions will be included in midterms and the final exam. <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> 70% completion</p>	<p>11/04/2012 - Calculate the pH of a solution of a weak acid from its pKa 77% completion <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2012 - 2013 <b>Related Documents:</b> <a href="#">Fall 2012 Tricca</a></p>	<p>11/04/2012 - No action required  <b>Action Plan Category:</b> Other</p>
			<p>05/25/2012 - 60% of students answered this question on the final correctly (SP 2012 in document repository). <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2011 - 2012 <b>Related Documents:</b> <a href="#">Spring 2012 CHEM 220</a></p>	<p>05/30/2012 - Include more examples of this type in class discussions.  <b>Action Plan Category:</b> Use New or Revised Teaching methods</p>

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			<p>05/21/2010 - 74% of students correctly answer a question related to this topic on the final exam.</p> <p><b>Result Type:</b> Criterion met</p> <p><b>Reporting Cycle:</b> 2009 - 2010</p> <p><b>Related Documents:</b> <a href="#">SP 2010 SLO_summary_CH220.xlsx</a></p>	<p>05/31/2010 - No further assesment required</p> <p><b>Action Plan Category:</b> Other</p>
	<p>CAN Dept - Chemistry - CAN CHEM 220 - General Chemistry II - Buffers - Describe the behavior of buffers (Created By CAN Dept - Chemistry)</p>	<p><b>Assessment Method:</b> Students independently will prepare a buffer solution in the lab.</p> <p><b>Assessment Method Category:</b> Other</p> <p><b>Success Criterion:</b> 70% completion of the task</p>		
		<p><b>Assessment Method:</b> One or more questions will be included in midterms and the final exam.</p> <p><b>Assessment Method Category:</b> Exam</p> <p><b>Success Criterion:</b> 70% completion</p>	<p>11/09/2012 - 86% of students answered the question on the midterm correctly.</p> <p><b>Result Type:</b> Criterion met</p> <p><b>Reporting Cycle:</b> 2012 - 2013</p> <p><b>Related Documents:</b> <a href="#">Fall 2012 Tricca</a></p>	<p>12/21/2012 - No action required.</p> <p><b>Action Plan Category:</b> Other</p>
			<p>05/21/2010 - 56% of students correctly answered this question on the final exam</p> <p><b>Result Type:</b> Criterion not met</p> <p><b>Reporting Cycle:</b> 2009 - 2010</p> <p><b>Related Documents:</b> <a href="#">SP 2010 SLO_summary_CH220.</a></p>	<p>05/31/2010 - Give students a practical assessment as opposed to written assessment.</p> <p><b>Action Plan Category:</b> Develop new evaluation methods</p>

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			<a href="#">xlsx</a>	
	CAN Dept - Chemistry - CAN CHEM 220 - General Chemistry II - Thermodynamics - Describe enthalpy, entropy and free energy as it applies to spontaneous processes (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> One or more questions will be included in midterms and the final exam. <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> 70% completion	05/21/2010 - 77% of students correctly answered this question on the final exam. <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2009 - 2010  <b>Related Documents:</b> <a href="#">SP 2010 SLO_summary_CH220.xlsx</a>	05/31/2010 - No further assessment required.  <b>Action Plan Category:</b> Other
	CAN Dept - Chemistry - CAN CHEM 220 - General Chemistry II - Voltaic Cells - Construct simple voltaic cells and perform calculations involving reduction potentials (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> One or more questions will be included in midterms and the final exam. <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> 70% completion	05/25/2012 - 66% of students answered this question correctly on the final exam. <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2011 - 2012  <b>Related Documents:</b> <a href="#">Spring 2012 CHEM 220</a>  05/21/2010 - 30% of students correctly answered this question on the final exam. <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2009 - 2010  <b>Related Documents:</b> <a href="#">SP 2010 SLO_summary_CH220.xlsx</a>	05/30/2012 - Work on additional examples of this type during class sessions.  <b>Action Plan Category:</b> Use New or Revised Teaching methods  05/31/2010 - Break down the material further. Give practical assessments.  <b>Action Plan Category:</b> Develop new evaluation methods
	CAN Dept - Chemistry - CAN CHEM 231 - Organic Chemistry I			

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	- Reaction mechanisms - Illustrate reaction mechanisms by using the curved arrow notation (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Questions in midterms and/or the final exam <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> 70% completion	12/20/2010 - 54% correctly answer this question on the final exam. This is up from 47% in the previous reporting cycle. <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2010 - 2011  <b>Related Documents:</b> <a href="#">Fall 2010 CHEM 234 SLO data.doc</a>	12/31/2010 - Illustrate more examples to address the following potential common mistakes - identify polarity sites within a molecule - draw arrows from negative sites to positive sites - use valence bond to create and break chemical bonds - keep accountability of all species involved  <b>Action Plan Category:</b> Use New or Revised Teaching methods
			10/08/2010 - 28% completion in a midterm question. Students are able to draw arrows with the right orientation but forget steps <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2010 - 2011  <b>Related Documents:</b> <a href="#">Fall 2010 CHEM 234 SLO data.doc</a>	12/20/2010 - Show animations of mechanisms found online  <b>Action Plan Category:</b> Use New or Revised Teaching methods
			12/18/2008 - 47% of students were able to correctly answer a question on the final exam. <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2009 - 2010  <b>Related Documents:</b> <a href="#">CHEM 234 Fall 2008.doc</a>	12/18/2008 - Select online examples of mechanisms to help students visualize electron movement from electrophilic sites to nucleophilic sites. Emphasize the meaning of the arrow and the proper way to draw it.  <b>Action Plan Category:</b> Use New or Revised Teaching methods

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	CAN Dept - Chemistry - CAN CHEM 231 - Organic Chemistry I - Structure and hybridization - Predict molecular structure based on molecular orbital hybridization. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Pre-test given before covering the material in class and post-test given after covering the material in class. <b>Assessment Method Category:</b> Pre and post testing <b>Success Criterion:</b> This exercise helps to set the success baseline for the individual group of students. Success is defined as 25% increase on the number of students who moved up a category on the post-test results. (categories are unsatisfactory, needs improvement, satisfactory)	08/20/2008 - Pre-test question 5. How is hybridization related to molecular shape and bond angle? Satisfactory: 0 out of 20 Needs improvement: 2 out of 20 Unsatisfactory: 18 out of 20 Comment: Students could not relate hybridization to orbitals (electron density in space) and how negative charges repel one another and find the appropriate location to minimize repulsion.  Post-test question 5. How is hybridization related to molecular shape and bond angle? Satisfactory: 12 out of 20 Needs improvement: 4 out of 20 Unsatisfactory: 3 out of 20  The number of satisfactory performance increased by 60%  <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2009 - 2010  <b>Related Documents:</b> <a href="#">CHEM 234 Fall 2008.doc</a>	12/20/2008 - Develop more specific questions to assess the topic of molecular shape separate from bond angle.  <b>Action Plan Category:</b> Develop new evaluation methods
		<b>Assessment Method:</b> A question on midterms and or the final exam <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> 70% of students answer the question correctly	12/18/2008 - 55% of students answered the question correctly <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2009 - 2010  <b>Related Documents:</b> <a href="#">CHEM 234 Fall 2008.doc</a>	03/16/2011 - Increase hands-on manipulation of computer animations and molecular modeling software.  <b>Action Plan Category:</b> Use New or Revised Teaching methods

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	CAN Dept - Chemistry - CAN CHEM 231 - Organic Chemistry I - Handling Chemicals - Use appropriate procedures for safe handling and disposal of organic materials. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> One or more questions in the written laboratory examination <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> 85% completion	11/11/2010 - 33% of students correctly answered the question on the test. 58% of students did not recognize organic solid waste as waste that needs special handling. <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2010 - 2011  <b>Related Documents:</b> <a href="#">Fall 2010 SLO raw data.doc</a>	12/19/2010 - Demonstrate the proper special disposal of non-halogenated and halogenated liquid and solid waste.  <b>Action Plan Category:</b> Use New or Revised Teaching methods
			10/30/2008 - 100% completion <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2009 - 2010  <b>Related Documents:</b> <a href="#">Fall 2008 CHEM 237 assessment data.doc</a>	03/18/2011 - No action required  <b>Action Plan Category:</b> Other
		<b>Assessment Method:</b> Direct observation of daily laboratory performance according to safety guidelines for example: waste disposal, wearing safety goggles, cleaning laboratory station. <b>Assessment Method Category:</b> Other <b>Success Criterion:</b> 85% completion	12/19/2008 - 100% of students followed laboratory safety rules and waste disposal handling rules. <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2009 - 2010	12/19/2008 - No action required  <b>Action Plan Category:</b> Other

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	CAN Dept - Chemistry - CAN CHEM 231 - Organic Chemistry I - Solubility - Predict the solubility of organic compounds in organic and inorganic solvents based on their molecular structure. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> One or more questions in the written laboratory exam. <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> 80% completion	11/11/2010 - Three questions were given in the lab exam: question 1 results 75 % predicted nonpolar compounds to be soluble in nonpolar solvents question 2 results 100% of students selected a suitable nonpolar solvent to dissolve a nonpolar compound question 3 results 62.5% were able to come up with a chemical reaction to explain the acid-base solubility of a selected organic compound/  <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2009 - 2010  <b>Related Documents:</b> <a href="#">Fall 2010 SLO raw data.doc</a>	12/19/2010 - Give several examples to demonstrate the acid-base behavior of organic molecules that can be symbolized using chemical equations.  <b>Action Plan Category:</b> Use New or Revised Teaching methods
			10/30/2008 - 59% of students complete this task 41% of students had difficulty justifying their predictions by using solubility guidelines or relating solubility to molecular structure. <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2009 - 2010  <b>Related Documents:</b> <a href="#">Fall 2008 CHEM 237 assessment data.doc</a>	12/18/2008 - Emphasize the need to reference the solubility guidelines while making predictions on solubility based on molecular structure. Question on the laboratory examination needs to be reworded in a more leading way.  <b>Action Plan Category:</b> Develop new evaluation methods
	CAN Dept - Chemistry - CAN CHEM 231 - Organic Chemistry I - Infrared Spectroscopy - Collect and interpret infrared spectra. (Created By	<b>Assessment Method:</b> Students are given two-six unknowns samples to experimentally prepare to run their IR spectrum. Students get a	11/30/2010 - 100% of students prepared their sample and run their own IR spectra 33% of students could correctly interpret	12/19/2010 - Obtain IR software that allows to predict IR spectra of a variety of functional groups to show differences

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	CAN Dept - Chemistry)	<p>print-out to analyze. Students identify the assigned compound's functional groups.</p> <p><b>Assessment Method Category:</b> Capstone Assignment/Project</p> <p><b>Success Criterion:</b> 85% completion</p>	<p>their IR spectrum</p> <p><b>Result Type:</b> Criterion not met</p> <p><b>Reporting Cycle:</b> 2009 - 2010</p> <p><b>Related Documents:</b> <a href="#">Fall 2010 SLO raw data.doc</a></p> <hr/> <p>11/15/2008 - 100% of students prepared their sample and run the IR correctly. Only 27% of the students correctly identified the functional groups in their corresponding samples.</p> <p><b>Result Type:</b> Criterion not met</p> <p><b>Reporting Cycle:</b> 2009 - 2010</p> <p><b>Related Documents:</b> <a href="#">Fall 2008 CHEM 237 assessment data.doc</a></p>	<p>to students.</p> <p><b>Action Plan Category:</b> Plan purchase of new equipment or supplies</p> <hr/> <p>12/15/2008 - The IR content will include more examples of available spectra to help students differentiate among samples with similar spectral patterns.</p> <p>A variety of samples will be given to students to run IR's. Students will be asked to share their findings in laboratory study group sessions. Students will be asked to find IR spectra in reference IR library books and compare with the IR spectra they run in the laboratory.</p> <p><b>Action Plan Category:</b> Use New or Revised Teaching methods</p>
		<p><b>Assessment Method:</b> Laboratory experiment to identify the carbonyl stretching of several compounds given.</p> <p><b>Assessment Method Category:</b> Project</p> <p><b>Success Criterion:</b> 90% completion</p>	<p>11/29/2012 - 98% completion</p> <p><b>Result Type:</b> Criterion met</p> <p><b>Reporting Cycle:</b> 2012 - 2013</p> <p><b>Related Documents:</b> <a href="#">SLOs, PLOs.docx</a></p>	<p>03/13/2013 - No action plan required</p> <p><b>Action Plan Category:</b> Other</p>

CAN Dept - Chemistry - CAN CHEM  
235 - Organic Chemistry II  
- Synthetic Methods - Apply a variety of

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	synthetic methods to identify the most appropriate synthetic route to obtain given organic molecules. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> One or more questions in midterms and the final exam. <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> 70% completion	03/15/2013 - Honors section 100% completion <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2012 - 2013 <b>Related Documents:</b> <a href="#">SLO data.doc</a>	03/15/2013 - No action required  <b>Action Plan Category:</b> Other
03/15/2013 - Regular section 28% completion 21% needs improvement Details in related document <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2012 - 2013 <b>Related Documents:</b> <a href="#">SLO data.doc</a>			03/15/2013 - Include step by step instructions on how to solve this type of problems in lecture sessions.  <b>Action Plan Category:</b> Use New or Revised Teaching methods	
05/18/2010 - 84.6% completion Students perform really well when reference materials are allowed. Students are able to piece the reactions together in the appropriate way when the pressure of memorization is lifted. <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2009 - 2010 <b>Related Documents:</b> <a href="#">CHEM 235 Sp 2009 SLO raw data.doc</a>			05/31/2009 - No action plan required  <b>Action Plan Category:</b> Other	
05/16/2010 - 93% of student could correctly identify a synthetic route on a test home exam <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2009 - 2010 <b>Related Documents:</b>			05/31/2010 - No action needed  <b>Action Plan Category:</b> Other	

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			<a href="#">CHEM 235 Sp10 SLO raw data.doc</a>	
	CAN Dept - Chemistry - CAN CHEM 235 - Organic Chemistry II - Organic Reactions - Carry out a variety of organic chemistry reactions such as electrophilic aromatic substitution reactions, aldol condensation reactions, ester saponification reactions, etc. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Perform laboratory experiments to synthesize, purify and analyze organic compounds. <b>Assessment Method Category:</b> Other <b>Success Criterion:</b> 90%		
	CAN Dept - Chemistry - CAN CHEM 237 - Organic Chemistry Lab I - Handling Chemicals - Use appropriate procedures for safe handling and disposal of organic materials. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> One or more questions in the written laboratory examination <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> 85% completion	11/11/2010 - 33% of students correctly answered the question on the test. 58% of students did not recognize organic solid waste as waste that needs special handling. <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2010 - 2011 <b>Related Documents:</b> <a href="#">Fall 2010 CHEM 237 SLO raw data.doc</a>	12/19/2010 - Demonstrate the proper special disposal of non-halogenated and halogenated liquid and solid waste. <b>Action Plan Category:</b> Use New or Revised Teaching methods
			10/30/2008 - 100% completion <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2009 - 2010 <b>Related Documents:</b> <a href="#">Fall 2008 CHEM 237 assessment data.doc</a>	03/18/2011 - No action required <b>Action Plan Category:</b> Other

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		<p><b>Assessment Method:</b> Direct observation of daily laboratory performance according to safety guidelines for example: waste disposal, wearing safety goggles, cleaning laboratory station.</p> <p><b>Assessment Method Category:</b> Other</p> <p><b>Success Criterion:</b> 85% completion</p>	<p>12/19/2008 - 100% of students followed laboratory safety rules and waste disposal handling rules.</p> <p><b>Result Type:</b> Criterion met</p> <p><b>Reporting Cycle:</b> 2009 - 2010</p> <p><b>Related Documents:</b> <a href="#">Fall 2008 CHEM 237 assessment data.doc</a></p>	<p>12/19/2008 - No action required</p> <p><b>Action Plan Category:</b> Other</p>
	<p>CAN Dept - Chemistry - CAN CHEM 237 - Organic Chemistry Lab I - Solubility - Predict the solubility of organic compounds in organic and inorganic solvents based on their molecular structure. (Created By CAN Dept - Chemistry)</p>	<p><b>Assessment Method:</b> One or more questions in the written laboratory exam.</p> <p><b>Assessment Method Category:</b> Exam</p> <p><b>Success Criterion:</b> 80% completion</p>	<p>11/11/2010 - Three questions were given in the lab exam: question 1 results 75 % predicted nonpolar compounds to be soluble in nonpolar solvents question 2 results 100% of students selected a suitable nonpolar solvent to dissolve a nonpolar compound question 3 results 62.5% were able to come up with a chemical reaction to explain the acid-base solubility of a selected organic compound/</p> <p><b>Result Type:</b> Criterion not met</p> <p><b>Reporting Cycle:</b> 2010 - 2011</p> <p><b>Related Documents:</b> <a href="#">Fall 2010 CHEM 237 SLO raw data.doc</a></p>	<p>12/19/2010 - Give several examples to demonstrate the acid-base behavior of organic molecules that can be symbolized using chemical equations.</p> <p><b>Action Plan Category:</b> Use New or Revised Teaching methods</p>
			<p>10/30/2008 - 59% of students complete this task 41% of students had difficulty justifying their predictions by using solubility guidelines or relating solubility to molecular structure.</p>	<p>12/19/2008 - Emphasize the need to reference the solubility guidelines while making predictions on solubility based on molecular structure. Question on the laboratory examination needs to be</p>

SLO	Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
				reworded in a more leading way.
			<b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2009 - 2010  <b>Related Documents:</b> <a href="#">Fall 2008 CHEM 237 assessment data.doc</a>	<b>Action Plan Category:</b> Develop new evaluation methods
	CAN Dept - Chemistry - CAN CHEM 237 - Organic Chemistry Lab I - Infrared Spectroscopy - Collect and interpret infrared spectra. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Students are given two-six unknowns samples to experimentally prepare to run their IR spectrum. Students get a print-out to analyze. Students identify the assigned compound's functional groups. <b>Assessment Method Category:</b> Capstone Assignment/Project <b>Success Criterion:</b> 85% completion	11/30/2010 - 100% of students prepared their sample and run their own IR spectra 33% of students could correctly interpret their IR spectrum <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2010 - 2011  <b>Related Documents:</b> <a href="#">Fall 2010 CHEM 237 SLO raw data.doc</a>	12/19/2010 - Obtain IR software that allows to predict IR spectra of a variety of functional groups to show differences to students.  <b>Action Plan Category:</b> Other
			11/15/2008 - 100% of students prepared their sample and run the IR correctly. Only 27% of the students correctly identified the functional groups in their correspondings samples. <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2009 - 2010  <b>Related Documents:</b> <a href="#">Fall 2008 CHEM 237 assessment data.doc</a>	12/19/2008 - The IR content will include more examples of available spectra to help students differentiate among samples with similar spectral patterns. A variety of samples will be given to students to run IR's. Students will be asked to share their findings in laboratory study group sessions. Students will be asked to find IR spectra in reference IR library books and compare with the IR spectra they run in the laboratory.  <b>Action Plan Category:</b>

SLO	Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
				Use New or Revised Teaching methods
		<b>Assessment Method:</b> Laboratory experiment to identify the carbonyl stretching of several compounds given. <b>Assessment Method Category:</b> Project <b>Success Criterion:</b> 90% completion	11/29/2012 - 98% completion <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2012 - 2013  <b>Related Documents:</b> <a href="#">SLOs PLOs eval lab.docx</a>	03/13/2013 - No action plan required  <b>Action Plan Category:</b> Other
	CAN Dept - Chemistry - CAN CHEM 238 - Organic Chemistry Lab II - Organic Reactions - Carry out a variety of organic chemistry reactions such as electrophilic aromatic substitution reactions, aldol condensation reactions, ester saponification reactions, etc. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Perform the dehydration of methylcyclohexanol, isolate methylcyclohexene product and prove its purity by IR analysis. <b>Assessment Method Category:</b> Other <b>Success Criterion:</b> 90%	05/20/2011 - 95% prepared methylcyclohexene from the dehydration of methylcyclohexol as demonstrated by their experimental IR's and their lab report. <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2010 - 2011	05/20/2011 - Criterion met. No action required  <b>Action Plan Category:</b> Other
	CAN Dept - Chemistry - CAN CHEM 410 - Chem For Health Sciences - Compounds - Identify and name elements, ionic compounds and covalent compounds and differentiate between symbols and formulas. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Short answer questions on mid-term and final exam <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> At least 85% correct	11/02/2012 - Exam 2 question 1 52 % correct naming covalent compounds 60 % correct naming ionic compounds having representative elements 75% correct naming ionic compounds having transition elements <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2012 - 2013  <b>Related Documents:</b>	11/02/2012 - Introduce additional examples of each type in class and laboratory exercises.  <b>Action Plan Category:</b> Use New or Revised Teaching methods

SLO	Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
			<a href="#">Fall 2012 SLO data.docx</a> 03/08/2010 - Mid-term exam Q1 - atoms and symbols, 86% of students taking the exam were correct. Q3 - electron dot structure of covalent bond - 24% fully correct, and 62% partially correct. Q 18 - ionic formula, 90% correct. <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2009 - 2010	05/30/2010 - No action required  <b>Action Plan Category:</b> Other
	CAN Dept - Chemistry - CAN CHEM 410 - Chem For Health Sciences - acid base - Describe the effect of altering the pH of the environment on a weak acid or weak base. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Questions on midterm and/or final exams. <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> Student will be able to articulate changes in charge on the acid/base in response to changes in pH.	04/25/2013 - 14 students, Satisfactory: 14%  Needs improvement: 21%  Unsatisfactory: 64% <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2012 - 2013  <b>Related Documents:</b> <a href="#">Spring 2013 SLO data.docx</a>	04/25/2013 - Separate question types on the test.  <b>Action Plan Category:</b> Develop new evaluation methods  04/25/2013 - Include more examples in class. Use buffer terminology when talking about aminoacids  <b>Action Plan Category:</b> Use New or Revised Teaching methods
	CAN Dept - Chemistry - CAN CHEM 410 - Chem For Health Sciences - ID - Identify functional groups on large complex biochemical molecules. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Several large complex structures will be presented on a midterm or final exam and students will be asked to identify the functional groups. <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b>	03/14/2014 - 32 students were assessed: 4 (12.5%) named and circled 4 of the 5 functional groups (see document in repository). 11 (34.4%) circled and/or named 2 of the 5 functional groups. 17 (53.1%) circled and/or name one or fewer functional groups.	03/14/2014 - Present examples that contain only a few functional groups at the time. Work on several complex molecules examples in class. Prepare practice worksheets

SLO	Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
		Students will be able to correctly identify 80% of the functional groups present on the molecular structure.	<b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2013 - 2014 <b>Related Documents:</b> <a href="#">SP 2014 - CHEM 410</a>	<b>Action Plan Category:</b> Use New or Revised Teaching methods <b>Follow-Up:</b> 03/14/2014 - Assess this SLO in Fall 2005 to determine the success of the actions listed above.
	CAN Dept - Chemistry - CAN CHEM 410 - Chem For Health Sciences - Reactivity - Communicate the basic reactivity of the functional groups on biochemical molecules. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Questions on midterm and/or final exam. <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> Students will be able to describe the chemical reactivity of identified functional groups on biochemical molecules.		
	CAN Dept - Chemistry - CAN CHEM 410 - Chem For Health Sciences - Information - Gather and assess information about the chemical properties of pharmaceutical agents. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Students will be asked to investigate the chemical properties of a medicinal product and present the information (with analysis) in written format. <b>Assessment Method Category:</b> Essay <b>Success Criterion:</b> Students will be able to accurately interpret the literature about the chemical properties of pharmaceutical agents.	12/16/2011 - See related document <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2011 - 2012 <b>Related Documents:</b> <a href="#">SLO #5.docx</a> <a href="#">High fructose corn syrup</a> <a href="#">Pitocin</a>	12/16/2011 - Satisfactory achievement. Re-assess SLO on a regular basis.
	CAN Dept - Chemistry - CAN CHEM 695 - Independent Study - Literature Research - Gather relevant			

SLO	Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
	information on a specific chemistry research topic by critically reading printed and online resources (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Keeping a research journal <b>Assessment Method Category:</b> Other <b>Success Criterion:</b> 90% completion	05/19/2010 - 100% completion A list of articles and books was compiled by students working on a NMR project <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2009 - 2010	05/31/2010 - No action required  <b>Action Plan Category:</b> Other
			12/19/2008 - 100% completion <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2009 - 2010  <b>Related Documents:</b> <a href="#">David and Veronica's CHEM 695 report.doc</a>	12/19/2008 - No action required  <b>Action Plan Category:</b> Other
	CAN Dept - Chemistry - CAN CHEM 695 - Independent Study - Experimental Design - Design a scientifically sound and experimental testable procedure. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Daily experimental design and progress <b>Assessment Method Category:</b> Other <b>Success Criterion:</b> 90% completion	12/19/2008 - 80% completion <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2009 - 2010  <b>Related Documents:</b> <a href="#">David and Veronica's CHEM 695 report.doc</a>	12/19/2008 - Work on case studies to demonstrate the way to design experiments that can be tested.  <b>Action Plan Category:</b> Use New or Revised Teaching methods
	CAN Dept - Chemistry - CAN CHEM 695 - Independent Study - Hypothesis Evaluation - Apply the scientific method to experimentally evaluate a hypothesis. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Able to determine if the hypothesis has been proven or not on a daily basis based on experimental results. <b>Assessment Method Category:</b> Presentation/Performance <b>Success Criterion:</b> 90% completion	12/19/2008 - 100% completion Students were able to figure out by a process of trial and error when their hypothesis was correct or incorrect. <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2009 - 2010  <b>Related Documents:</b>	12/19/2008 - No action required  <b>Action Plan Category:</b> Other

SLO	Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
			<a href="#">David and Veronica's CHEM 695 report.doc</a>	
	CAN Dept - Chemistry - CAN CHEM 695 - Independent Study - Results Analysis - Analyze experimental data and make appropriate modifications to the experimental design.  (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Draw appropriate conclusions based on experimental results on an on-going bases. <b>Assessment Method Category:</b> Presentation/Performance <b>Success Criterion:</b> 90% completion	12/19/2008 - 80% completion Students could analyze their data but had trouble making appropriate modifications to test their experimental design <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2009 - 2010 <b>Related Documents:</b> <a href="#">David and Veronica's CHEM 695 report.doc</a>	12/19/2008 - Have a daily discussion of experimental procedures and how they fit in the overall scope of the project.  <b>Action Plan Category:</b> Use New or Revised Teaching methods

SLO	Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
Document and communicate their work effectively.	CAN Dept - Chemistry - CAN CHEM 210 - General Chemistry I - Elements - Identify and name atoms, elements, ions, molecules, ionic compounds and molecular compounds. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> One or more questions on midterms and the final exam <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> 70% completion	05/30/2012 - Two questions were given to students on the final (questions are in the document repository) Question 6 results: 88% correct Question 7 results: 78% correct <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2011 - 2012 <b>Related Documents:</b> <a href="#">Spring 2012</a>	05/30/2012 - No action required  <b>Action Plan Category:</b> Other

SLO	Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
		<b>Assessment Method:</b> Nomenclature worksheets <b>Assessment Method Category:</b> Other <b>Success Criterion:</b> 80% completion	10/15/2010 - 55% of students earned A grade 34% of students earned B grade <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2010 - 2011  <b>Related Documents:</b> <a href="#">Fall 2010 CHEM 210</a>	12/21/2010 - No further action requires  <b>Action Plan Category:</b> Other
	CAN Dept - Chemistry - CAN CHEM 210 - General Chemistry I - Lab report - Write laboratory reports, applying the scientific method. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Written laboratory report <b>Assessment Method Category:</b> Other <b>Success Criterion:</b> 80% completion	12/20/2009 - Raw Data: 4: 10 students 3: 3 students 2: 1 student 1: 0 students Note: 4 students did not turn in the assignment. 72% of students successfully completed this task <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2009 - 2010  <b>Related Documents:</b> <a href="#">Mimosa CHEM210_Fall2009.doc</a>	12/20/2009 - Give examples of a good written laboratory report  <b>Action Plan Category:</b> Other
	CAN Dept - Chemistry - CAN CHEM 231 - Organic Chemistry I - Reaction mechanisms - Illustrate reaction mechanisms by using the curved arrow notation (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Questions in midterms and/or the final exam <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> 70% completion	12/20/2010 - 54% correctly answer this question on the final exam. This is up from 47% in the previous reporting cycle. <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2010 - 2011  <b>Related Documents:</b> <a href="#">Fall 2010 CHEM 234 SLO data.doc</a>	12/31/2010 - Illustrate more examples to address the following potential common mistakes - identify polarity sites within a molecule - draw arrows from negative sites to positive sites - use valence bond to create and break chemical bonds - keep accountability of all species involved

SLO	Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
				<b>Action Plan Category:</b> Use New or Revised Teaching methods
			10/08/2010 - 28% completion in a midterm question. Students are able to draw arrows with the right orientation but forget steps <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2010 - 2011 <b>Related Documents:</b> <a href="#">Fall 2010 CHEM 234 SLO data.doc</a>	12/20/2010 - Show animations of mechanisms found online  <b>Action Plan Category:</b> Use New or Revised Teaching methods
			12/18/2008 - 47% of students were able to correctly answer a question on the final exam. <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2009 - 2010 <b>Related Documents:</b> <a href="#">CHEM 234 Fall 2008.doc</a>	12/18/2008 - Select online examples of mechanisms to help students visualize electron movement from electrophilic sites to nucleophilic sites. Emphasize the meaning of the arrow and the proper way to draw it.  <b>Action Plan Category:</b> Use New or Revised Teaching methods
	CAN Dept - Chemistry - CAN CHEM 231 - Organic Chemistry I - IUPAC naming - Apply the IUPAC system to name several classes of organic compounds (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Questions on midterms and final exam <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> 70% completion	10/10/2013 - 89% of students scored 75% or higher on a midterm question. <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2013 - 2014 <b>Related Documents:</b> <a href="#">2013 SLO.docx</a>	03/20/2014 - No action required  <b>Action Plan Category:</b> Other
			10/10/2012 - 6 questions nomenclature were given in midterm 2. Completion rate ranges from 50% to 87.5% depending on the type of question. See	10/13/2012 - Give additional similar type problems to students in class or as homework for additional practice.

SLO	Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
			<p>related document for details.</p> <p><b>Result Type:</b> Inconclusive</p> <p><b>Reporting Cycle:</b> 2012 - 2013</p> <p><b>Related Documents:</b> <a href="#">SLOs, PLOs.docx</a></p>	<p><b>Action Plan Category:</b> Use New or Revised Teaching methods</p> <hr/> <p>10/13/2012 - Segregate question type to be assessed</p> <p><b>Action Plan Category:</b> Develop new evaluation methods</p>
			<p>10/18/2010 - 62% completion as an average results from 5 different questions in two exam forms (A and B). Common mistakes are naming rings, intricate long chains and decoding parenthesis.</p> <p><b>Result Type:</b> Criterion not met</p> <p><b>Reporting Cycle:</b> 2010 - 2011</p> <p><b>Related Documents:</b> <a href="#">Fall 2010 CHEM 234 SLO data.doc</a></p>	<p>12/20/2010 - Provide more examples of complicated molecules to be named in class. Attention to multiple functional groups and rings/</p> <p><b>Action Plan Category:</b> Use New or Revised Teaching methods</p>
			<p>10/08/2010 - 43.5% completion on average in two questions and two test forms (A and B). Students did not include Z,E as part of the name</p> <p><b>Result Type:</b> Criterion not met</p> <p><b>Reporting Cycle:</b> 2010 - 2011</p> <p><b>Related Documents:</b> <a href="#">Fall 2010 CHEM 234 SLO data.doc</a></p>	<p>12/20/2010 - Emphasize the need for including E, Z as part of the compound's name</p> <p><b>Action Plan Category:</b> Use New or Revised Teaching methods</p>
			<p>12/18/2008 - 60% of students could name or draw organic molecules</p> <p><b>Result Type:</b> Criterion not met</p> <p><b>Reporting Cycle:</b> 2009 - 2010</p> <p><b>Related Documents:</b> <a href="#">CHEM 234 Fall 2008.doc</a></p>	<p>12/31/2008 - Increase the number of examples given in lecture and assign additional practice work pages</p> <p><b>Action Plan Category:</b> Use New or Revised Teaching methods</p>

SLO	Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
	CAN Dept - Chemistry - CAN CHEM 235 - Organic Chemistry II - Acid-base Strength - Predict and justify the relative acid strength and the relative basicity of a variety of organic acids and bases based on molecular structure, inductive effects and resonance effects. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> One or more questions on midterms and/or the final exam <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> 75% of students are able to predict and/or justify acid strength and/ or basicity.		
	CAN Dept - Chemistry - CAN CHEM 235 - Organic Chemistry II - Separation Scheme - Formulate a separation and purification scheme for a given multicomponent mixture of organic compounds. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Design a flow chart to separate three components based on chemical properties determined experimentally. Successfully execute the separation and report the results. <b>Assessment Method Category:</b> Project <b>Success Criterion:</b> 80%		
	CAN Dept - Chemistry - CAN CHEM 410 - Chem For Health Sciences - acid base - Describe the effect of altering the pH of the environment on a weak acid or weak base. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Questions on midterm and/or final exams. <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> Student will be able to articulate changes in charge on the acid/base in response to changes in pH.	04/25/2013 - 14 students, Satisfactory: 14%  Needs improvement: 21%  Unsatisfactory: 64% <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2012 - 2013	04/25/2013 - Separate question types on the test.  <b>Action Plan Category:</b> Develop new evaluation methods  04/25/2013 - Include more examples in class. Use buffer terminology when talking about aminoacids

SLO	Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
				<b>Action Plan Category:</b> Use New or Revised Teaching methods
			<b>Related Documents:</b> <a href="#">Spring 2013 SLO data.docx</a>	
	CAN Dept - Chemistry - CAN CHEM 410 - Chem For Health Sciences - Reactivity - Communicate the basic reactivity of the functional groups on biochemical molecules. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Questions on midterm and/or final exam. <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> Students will be able to describe the chemical reactivity of identified functional groups on biochemical molecules.		
	CAN Dept - Chemistry - CAN CHEM 410 - Chem For Health Sciences - Information - Gather and assess information about the chemical properties of pharmaceutical agents. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Students will be asked to investigate the chemical properties of a medicinal product and present the information (with analysis) in written format. <b>Assessment Method Category:</b> Essay <b>Success Criterion:</b> Students will be able to accurately interpret the literature about the chemical properties of pharmaceutical agents.	12/16/2011 - See related document <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2011 - 2012 <b>Related Documents:</b> <a href="#">SLO #5.docx</a> <a href="#">High fructose corn syrup</a> <a href="#">Pitocin</a>	12/16/2011 - Satisfactory achievement. Re-assess SLO on a regular basis.
	CAN Dept - Chemistry - CAN CHEM 680CH - Honors Colloquium in Chemistry - Discussion Topics - Select appropriate discussion topics in drug discovery. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Weekly in class discussions <b>Assessment Method Category:</b> Other <b>Success Criterion:</b> 85% completion	05/31/2009 - 85.2% completion was achieved <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2009 - 2010	05/31/2009 - No action required  <b>Action Plan Category:</b> Other

SLO	Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
			<b>Related Documents:</b> <a href="#">Chem 680 Spring 2009 SLO data.doc</a>	
	CAN Dept - Chemistry - CAN CHEM 680CH - Honors Colloquium in Chemistry - Literature Research - Conduct literature research from printed and on-line resources.  (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Prepare appropriate questions based on research of specific topics related to drug discovery when guest speakers were invited to class (four times). <b>Assessment Method Category:</b> Other <b>Success Criterion:</b> 85% completion	05/31/2009 - 89.6% completion was achieved <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2009 - 2010 <b>Related Documents:</b> <a href="#">Chem 680 Spring 2009 SLO data.doc</a>	05/31/2009 - No action required  <b>Action Plan Category:</b> Other
	CAN Dept - Chemistry - CAN CHEM 680CH - Honors Colloquium in Chemistry - Critical Evaluation - Critically evaluate information from literature research employing a chemistry focus. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Final report and oral presentation <b>Assessment Method Category:</b> Capstone Assignment/Project <b>Success Criterion:</b> 85% completion	05/31/2009 - 93.1% completion after adjusting for one student's zero grade for not turning in the report or giving an oral presentation. 83.8% otherwise. Of the students who performed the task, 93.1% was achieved. <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2009 - 2010 <b>Related Documents:</b> <a href="#">Chem 680 Spring 2009 SLO data.doc</a>	05/31/2009 - No action required  <b>Action Plan Category:</b> Other
	CAN Dept - Chemistry - CAN CHEM 695 - Independent Study - Experimental Design - Design a scientifically sound and experimental testable procedure. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Daily experimental design and progress <b>Assessment Method Category:</b> Other <b>Success Criterion:</b> 90% completion	12/19/2008 - 80% completion <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2009 - 2010	12/19/2008 - Work on case studies to demonstrate the way to design experiments that can be tested.  <b>Action Plan Category:</b>

SLO	Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
				Use New or Revised Teaching methods
			<b>Related Documents:</b> <a href="#">David and Veronica's CHEM 695 report.doc</a>	
	CAN Dept - Chemistry - CAN CHEM 695 - Independent Study - Reporting - Write and or present a report based on experimental procedure, data analysis and conclusions. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Write a formal report and/ or give an oral presentation based on experimental results. <b>Assessment Method Category:</b> Capstone Assignment/Project <b>Success Criterion:</b> 90% completion	05/19/2010 - 100% completion Students composed a powerpoint presentation based on their experimental data for the first annual Canada Honors Symposium. <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2009 - 2010 <b>Related Documents:</b> <a href="#">BrentXochitlppt.ppt</a>	05/31/2010 - No action required  <b>Action Plan Category:</b> Other
			12/19/2008 - 100% completion Students wrote a formal report summarizing their findings about the performance of different UV-Vis and Vis equipment. <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2009 - 2010 <b>Related Documents:</b> <a href="#">David and Veronica's CHEM 695 report.doc</a>	12/19/2008 - No action required  <b>Action Plan Category:</b> Other

SLO	Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
Demonstrate critical thinking to analyze physical systems in terms of scientific concepts.	CAN Dept - Chemistry - CAN CHEM 192 - Elementary Chemistry - Density - The student will understand the concept of density. (Created By			

SLO	Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
	CAN Dept - Chemistry)	<b>Assessment Method:</b> Insert a question in midterms and the final exam <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> 80% completion	09/10/2012 - 62.5% answer question 4 of the calculations section in the test. <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2012 - 2013 <b>Related Documents:</b> <a href="#">Fall 2012 first midterm Medina</a>	10/12/2012 - Spend more time at the beginning of the semester to review algebra (a pre-requisite).  Develop a short course in math applied to chemistry to be taken prior to the start of the semester.  <b>Action Plan Category:</b> Use New or Revised Teaching methods
			09/12/2011 - 96% correct in conceptual multiple choice question. 71% correct in question solving for volume using the density formula. <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2011 - 2012 <b>Related Documents:</b> <a href="#">Fall 2011 Chem 192 Wilcox</a>	10/01/2011 - Most common error: math. My mantra of "check your units" could be reinforced with even more examples during lecture.  <b>Action Plan Category:</b> Use New or Revised Teaching methods
			12/20/2008 - Final Exam: 4 - 16 students 3 - 2 Students 2 - 0 students 1 - 1 students <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2009 - 2010 <b>Related Documents:</b> <a href="#">Fall 2008 CHEM 192</a>	12/21/2008 - No further assessment needed  <b>Action Plan Category:</b> Other
	CAN Dept - Chemistry - CAN CHEM 192 - Elementary Chemistry - Equations - The student will be able to complete, balance, and apply chemical equations. (Created By CAN Dept -	<b>Assessment Method:</b> Insert questions in midterms and the final exam <b>Assessment Method Category:</b> Exam	10/31/2012 - 74% satisfactory mass to mass calculation <b>Result Type:</b> Criterion met	10/31/2012 - No action required

SLO	Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
	Chemistry)	<b>Success Criterion:</b> 75% correct	<b>Reporting Cycle:</b> 2012 - 2013  <b>Related Documents:</b> <a href="#">Fall 2012 SLO data from third test.docx</a> <hr/> 10/31/2012 - Apply chemical equations 67% satisfactory on mole to mole calculation <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2012 - 2013  <b>Related Documents:</b> <a href="#">Fall 2012 SLO data from third test.docx</a> <hr/> 10/31/2012 - Apply chemical equations determining mole ratio from a chemical equation - 96% <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2012 - 2013  <b>Related Documents:</b> <a href="#">Fall 2012 SLO data from third test.docx</a> <hr/> 10/31/2012 - Complete a chemical reaction Satisfactory - 29% Needs improvement - 42% <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2012 - 2013  <b>Related Documents:</b> <a href="#">Fall 2012 SLO data from third test.docx</a> <hr/> 10/31/2012 - Balance equation 58% satisfactory	10/31/2012 - More relevant practice in class  <b>Action Plan Category:</b> Use New or Revised Teaching methods <hr/> 10/31/2012 - No action required <hr/> 10/31/2012 - More relevant practice in class  <b>Action Plan Category:</b> Use New or Revised Teaching methods <hr/> 10/31/2012 - More relevant practice in class

SLO	Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
			37.5 needs improvement <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2012 - 2013 <b>Related Documents:</b> <a href="#">Fall 2012 SLO data from third test.docx</a>	10/31/2012 - More practice problems in class  <b>Action Plan Category:</b> Use New or Revised Teaching methods
			05/28/2009 - Calculate the theoretical percent composition of a compound from it's molecular formula. 95% correct.  <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2009 - 2010 <b>Related Documents:</b> <a href="#">SLO_History_Chem192 - Nick de Mello.pdf</a>	06/07/2009 - No action required  <b>Action Plan Category:</b> Other
			04/02/2009 - Midterm question: Calculate the molecular formula of a compound from its percent composition. 86% completion. <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2009 - 2010 <b>Related Documents:</b> <a href="#">SLO_History_Chem192 - Nick de Mello.pdf</a>	05/25/2009 - No action plan needed  <b>Action Plan Category:</b> Other

CAN Dept - Chemistry - CAN CHEM 210 - General Chemistry I - Matter - Recognize states of matter, classes of matter, properties of matter and discuss units of measurements of mass, length and volume and perform

**Assessment Method:**  
 Questions on a midterm or the final exam.  
**Assessment Method Category:**  
 Exam

SLO	Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
	conversions between units using the metric system, the English system, or between both. (Created By CAN Dept - Chemistry)	<p><b>Success Criterion:</b> 70% completion</p> <hr/> <p><b>Assessment Method:</b> Laboratory exercise to experimentally collect mass and volume data. <b>Assessment Method Category:</b> Other <b>Success Criterion:</b> 80% successfully complete the task</p>	<p>08/14/2010 - 87% of students obtained an A <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2010 - 2011 <b>Related Documents:</b> <a href="#">Fall 2010 CHEM 210</a></p>	<p>12/21/2010 - No further action needed <b>Action Plan Category:</b> Other</p>
	CAN Dept - Chemistry - CAN CHEM 220 - General Chemistry II - Equilibrium - Discuss chemical equilibrium and apply the concept to acid-base reactions and buffer solutions (Created By CAN Dept - Chemistry)	<p><b>Assessment Method:</b> One or more questions will be included in midterms and the final exam. <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> 70% completion</p>	<p>05/23/2010 - 37% of students answer the final exam on this topic correctly <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2009 - 2010 <b>Related Documents:</b> <a href="#">SP 2010 SLO_summary_CH220.xlsx</a></p>	<p>05/31/2010 - Break down the material further. Give students shorter and more focused quizzes as the assesment tool. <b>Action Plan Category:</b> Use New or Revised Teaching methods</p>
	CAN Dept - Chemistry - CAN CHEM 220 - General Chemistry II - Acid- Base Equilibrium - Apply Ka, Kb, pKa, pKb, and pH concepts on complex equilibrium calculations (Created By CAN Dept - Chemistry)	<p><b>Assessment Method:</b> One or more questions will be included in midterms and the final exam. <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> 70% completion</p>	<p>11/04/2012 - Calculate the pH of a solution of a weak acid from its pKa 77% completion <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2012 - 2013 <b>Related Documents:</b> <a href="#">Fall 2012 Tricca</a></p> <p>05/25/2012 - 60% of students answered this question on the final correctly (SP 2012 in document repository).</p>	<p>11/04/2012 - No action required <b>Action Plan Category:</b> Other</p>

SLO	Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up	
			<b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2011 - 2012 <b>Related Documents:</b> <a href="#">Spring 2012 CHEM 220</a>	05/30/2012 - Include more examples of this type in class discussions. <b>Action Plan Category:</b> Use New or Revised Teaching methods	
			05/21/2010 - 74% of students correctly answer a question related to this topic on the final exam. <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2009 - 2010 <b>Related Documents:</b> <a href="#">SP 2010 SLO_summary_CH220.xlsx</a>	05/31/2010 - No further assesment required <b>Action Plan Category:</b> Other	
	CAN Dept - Chemistry - CAN CHEM 220 - General Chemistry II - Buffers - Describe the behavior of buffers (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Students independently will prepare a buffer solution in the lab. <b>Assessment Method Category:</b> Other <b>Success Criterion:</b> 70% completion of the task	<b>Assessment Method:</b> One or more questions will be included in midterms and the final exam. <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> 70% completion	11/09/2012 - 86% of students answered the question on the midterm correctly. <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2012 - 2013 <b>Related Documents:</b> <a href="#">Fall 2012 Tricca</a>	12/21/2012 - No action required. <b>Action Plan Category:</b> Other

SLO	Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
			05/21/2010 - 56% of students correctly answered this question on the final exam <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2009 - 2010 <b>Related Documents:</b> <a href="#">SP 2010 SLO_summary_CH220.xlsx</a>	05/31/2010 - Give students a practical assessment as opposed to written assessment.  <b>Action Plan Category:</b> Develop new evaluation methods
	CAN Dept - Chemistry - CAN CHEM 220 - General Chemistry II - Thermodynamics - Describe enthalpy, entropy and free energy as it applies to spontaneous processes (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> One or more questions will be included in midterms and the final exam. <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> 70% completion	05/21/2010 - 77% of students correctly answered this question on the final exam. <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2009 - 2010 <b>Related Documents:</b> <a href="#">SP 2010 SLO_summary_CH220.xlsx</a>	05/31/2010 - No further assessment required.  <b>Action Plan Category:</b> Other
	CAN Dept - Chemistry - CAN CHEM 220 - General Chemistry II - Gibbs Equation - Using the Gibbs equation, calculate the free energy change, $\Delta G$ , from enthalpy, $\Delta H$ , and entropy, $\Delta S$ , changes. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> One or more questions on a midterm or on the final exam <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> 70% completion	12/15/2013 - 100% completion <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2013 - 2014 <b>Related Documents:</b> <a href="#">Gibbs:</a>	12/15/2013 - No action required  <b>Action Plan Category:</b> Other
			04/28/2013 - Students taking exam =40 Students answering question correctly = 33 % of students answering correctly = 83%  <b>Result Type:</b>	07/17/2013 - No action required  <b>Action Plan Category:</b> Other

SLO	Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
			<p>Criterion met</p> <p><b>Reporting Cycle:</b> 2012 - 2013</p>	
	<p>CAN Dept - Chemistry - CAN CHEM 220 - General Chemistry II</p> <p>- Voltaic Cells - Construct simple voltaic cells and perform calculations involving reduction potentials (Created By CAN Dept - Chemistry)</p>	<p><b>Assessment Method:</b> One or more questions will be included in midterms and the final exam.</p> <p><b>Assessment Method Category:</b> Exam</p> <p><b>Success Criterion:</b> 70% completion</p>	<p>05/25/2012 - 66% of students answered this question correctly on the final exam.</p> <p><b>Result Type:</b> Criterion not met</p> <p><b>Reporting Cycle:</b> 2011 - 2012</p> <p><b>Related Documents:</b> <a href="#">Spring 2012 CHEM 220</a></p>	<p>05/30/2012 - Work on additional examples of this type during class sessions.</p> <p><b>Action Plan Category:</b> Use New or Revised Teaching methods</p>
			<p>05/21/2010 - 30% of students correctly answered this question on the final exam.</p> <p><b>Result Type:</b> Criterion not met</p> <p><b>Reporting Cycle:</b> 2009 - 2010</p> <p><b>Related Documents:</b> <a href="#">SP 2010 SLO_summary_CH220.xlsx</a></p>	<p>05/31/2010 - Break down the material further. Give practical assessments.</p> <p><b>Action Plan Category:</b> Develop new evaluation methods</p>
	<p>CAN Dept - Chemistry - CAN CHEM 231 - Organic Chemistry I</p> <p>- Structure and hybridization - Predict molecular structure based on molecular orbital hybridization. (Created By CAN Dept - Chemistry)</p>	<p><b>Assessment Method:</b> Pre-test given before covering the material in class and post-test given after covering the material in class.</p> <p><b>Assessment Method Category:</b> Pre and post testing</p> <p><b>Success Criterion:</b> This exercise helps to set the success baseline for the individual group of students. Success is defined as 25% increase on the number of students who moved up a category on the post-test results. (categories are unsatisfactory, needs</p>	<p>08/20/2008 - Pre-test question 5. How is hybridization related to molecular shape and bond angle? Satisfactory: 0 out of 20 Needs improvement: 2 out 20 Unsatisfactory: 18 out of 20 Comment: Students could not relate hybridization to orbitals (electron density in space) and how negative charges repel one another and find the appropriate location to minimize repulsion.</p> <p>Post-test question</p>	<p>12/20/2008 - Develop more specific questions to assess the topic of molecular shape separate from bond angle.</p> <p><b>Action Plan Category:</b> Develop new evaluation methods</p>

SLO	Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
		improvement, satisfactory)	<p>5. How is hybridization related to molecular shape and bond angle? Satisfactory: 12 out of 20 Needs improvement: 4 out 20 Unsatisfactory: 3 out of 20</p> <p>The number of satisfactoty performance increased by 60%</p> <p><b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2009 - 2010 <b>Related Documents:</b> <a href="#">CHEM 234 Fall 2008.doc</a></p>	
		<p><b>Assessment Method:</b> A question on midterms and or the final exam <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> 70% of students answer the question correctly</p>	<p>12/18/2008 - 55% of students answered the question correctly <b>Result Type:</b> Criterion not met <b>Reporting Cycle:</b> 2009 - 2010 <b>Related Documents:</b> <a href="#">CHEM 234 Fall 2008.doc</a></p>	<p>03/16/2011 - Increase hands-on manipulation of computer animations and molecular modeling software.</p> <p><b>Action Plan Category:</b> Use New or Revised Teaching methods</p>
	CAN Dept - Chemistry - CAN CHEM 235 - Organic Chemistry II - Synthetic Methods - Apply a variety of synthetic methods to identify the most appropriate synthetic route to obtain given organic molecules. (Created By CAN Dept - Chemistry)	<p><b>Assessment Method:</b> One or more questions in midterms and the final exam. <b>Assessment Method Category:</b> Exam <b>Success Criterion:</b> 70% completion</p>	<p>03/15/2013 - Honors section 100% completion <b>Result Type:</b> Criterion met <b>Reporting Cycle:</b> 2012 - 2013 <b>Related Documents:</b> <a href="#">SLO data.doc</a></p> <p>03/15/2013 - Regular section 28% completion 21% needs improvement</p>	<p>03/15/2013 - No action required</p> <p><b>Action Plan Category:</b> Other</p> <p>03/15/2013 - Include step by step instructions on how to solve this type of problems in lecture sessions.</p>

SLO	Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
			<p>Details in related document</p> <p><b>Result Type:</b> Criterion not met</p> <p><b>Reporting Cycle:</b> 2012 - 2013</p> <p><b>Related Documents:</b> <a href="#">SLO data.doc</a></p>	<p><b>Action Plan Category:</b> Use New or Revised Teaching methods</p>
			<p>05/18/2010 - 84.6% completion Students perform really well when reference materials are allowed. Students are able to piece the reactions together in the appropriate way when the pressure of memorization is lifted.</p> <p><b>Result Type:</b> Criterion met</p> <p><b>Reporting Cycle:</b> 2009 - 2010</p> <p><b>Related Documents:</b> <a href="#">CHEM 235 Sp 2009 SLO raw data.doc</a></p>	<p>05/31/2009 - No action plan required</p> <p><b>Action Plan Category:</b> Other</p>
			<p>05/16/2010 - 93% of student could correctly identify a synthetic route on a test home exam</p> <p><b>Result Type:</b> Criterion met</p> <p><b>Reporting Cycle:</b> 2009 - 2010</p> <p><b>Related Documents:</b> <a href="#">CHEM 235 Sp10 SLO raw data.doc</a></p>	<p>05/31/2010 - No action needed</p> <p><b>Action Plan Category:</b> Other</p>

CAN Dept - Chemistry - CAN CHEM 235 - Organic Chemistry II  
- Acid-base Strength - Predict and justify the relative acid strength and the relative basicity of a variety of organic acids and bases based on molecular structure, inductive effects and resonance effects.  
(Created By CAN Dept - Chemistry)

**Assessment Method:**  
One or more questions on midterms and/or the final exam

**Assessment Method Category:**  
Exam

**Success Criterion:**  
75% of students are able to predict

SLO	Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
		and/or justify acid strength and/ or basicity.		
	CAN Dept - Chemistry - CAN CHEM 235 - Organic Chemistry II - Organic Reactions - Carry out a variety of organic chemistry reactions such as electrophilic aromatic substitution reactions, aldol condensation reactions, ester saponification reactions, etc. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Perform laboratory experiments to synthesize, purify and analyze organic compounds. <b>Assessment Method Category:</b> Other <b>Success Criterion:</b> 90%		
	CAN Dept - Chemistry - CAN CHEM 235 - Organic Chemistry II - Separation Scheme - Formulate a separation and purification scheme for a given multicomponent mixture of organic compounds. (Created By CAN Dept - Chemistry)	<b>Assessment Method:</b> Design a flow chart to separate three components based on chemical properties determined experimentally. Successfully execute the separation and report the results. <b>Assessment Method Category:</b> Project <b>Success Criterion:</b> 80%		