

# Assessment: Course Four Column

Spring/Summer 2019



## El Camino: Course SLOs (MATH) - Pre-Engineering

### ECC: ENGR 1: Intro to Engineering

<i>Course SLOs</i>	<i>Assessment Method Description</i>	<i>Results</i>	<i>Actions</i>
<p><b>SLO #2 Apply Academic Success Strategies</b> - Assess the cognitive skills and apply academic success strategies related to the study of engineering.</p> <p><b>Course SLO Status:</b> Active</p> <p><b>Course SLO Assessment Cycle:</b> 2014-15 (Spring 2015), 2016-17 (Spring 2017), 2018-19 (Spring 2019)</p> <p><b>Input Date:</b> 11/21/2013</p>	<p><b>Essay/Written Assignment -</b></p> <p>Students are directed to write a one page assessment of their cognitive skills, which they will utilize in their chosen Engineering discipline, which may include: remembering, understanding, applying, analyzing, evaluating, and creating. Also, they will write about applying their academic success strategies related to the study of Engineering, which include: structuring their life to minimize distractions, setting goals, working collaboratively with other students, making effective use of their professors, making a commitment to their study, and communicating to family and friends about their academic priorities. If a student wrote what was irrelevant to the question, the student earned a score of 0. If the student did not write about any intellectual skills, but wrote about at least one of the academic success skills, the student earned a score of</p>	<p><b>Semester and Year Assessment Conducted:</b> 2014-15 (Spring 2015)</p> <p><b>Standard Met? :</b> Standard Met</p> <p>No students (0%) earned a score of 0, while just 1 student (3%) earned a score of 1. There were 5 students (17%) who earned a score of 2 and 23 students (79%) who earned a score of 3, out of a total of 29 students. Thus, 96% (those scoring 2 or 3) were successful at assessing cognitive skills and applying success strategies related to the study of Engineering. (05/20/2015)</p> <p><b>Faculty Assessment Leader:</b> Jody Hamabata</p> <p><b>Faculty Contributing to Assessment:</b> Milan Georgevich</p>	<p><b>Action:</b> The instructor will direct students to discuss cognitive skills and apply academic success strategies related to the study of Engineering, in pairs during class time. (05/20/2016)</p> <p><b>Action Category:</b> Teaching Strategies</p> <p><b>Follow-Up:</b> Students did number of group discussion projects related to academic success and cognitive skills during class time and discussed the outcomes with rest of the class. (10/04/2016)</p>

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	<p>1. If the student wrote about two levels of intellectual skills and one academic success strategy, the student earned a score of 2. If a student wrote about more than two levels of intellectual skills and more than one academic success strategy, the student earned the maximum score of 3.</p> <p><b>Standard and Target for Success:</b> It is expected that 80% of the students are successful, that is score 2 or 3 for the assignment.</p> <p><b>Homework Problems</b> - Students please go to the following website to take free aptitude test in following four categories:</p> <ol style="list-style-type: none"><li>1. Numerical skills</li><li>2. Abstract skills</li><li>3. Verbal Skills</li><li>4. Mechanical or Psychomotor skill</li></ol> <p><a href="http://www.psychometricinstitute.com.au/Free-Aptitude-Tests.asp">http://www.psychometricinstitute.com.au/Free-Aptitude-Tests.asp</a> Do not worry if your scores are low in one or more category. You will not be judged on those scores.</p> <p>First write about the current state of your skills in above four areas. Then write a plan to improve your skills in areas in which you may have scored low. For example if you scored low in cognitive skills such as: remembering, understanding, applying, analyzing, evaluating, and creating, then what is your plan to improve them.</p> <p>In addition write about applying your</p>	<p><b>Semester and Year Assessment Conducted:</b> 2016-17 (Spring 2017)</p> <p><b>Standard Met?</b> : Standard Met</p> <p>Results</p> <p>Number of students assessed: 49</p> <p>Table below gives score distributions.</p> <table><tr><th>Score value</th><th>Number of students achieving that score</th><th>Percentage of Students in each category (%)</th></tr><tr><td>3</td><td>24</td><td></td></tr><tr><td>2</td><td>9</td><td></td></tr><tr><td>1</td><td>11</td><td></td></tr><tr><td>0</td><td>5</td><td></td></tr></table> <p>10.2</p> <p>Interpretation of results</p> <p>About 67.4 % student had complete, to good understanding of this SLO and learning related to it. Almost 89% student had some understanding or higher. Thus it seems that engineering 1 course is meeting SLO #2.</p> <p>The following reasons can be cited for the underperformance by 10% of the students.</p> <ol style="list-style-type: none"><li>1. Poor quality writing skills.</li><li>2. Poor quality or inadequate research skills.</li></ol>	Score value	Number of students achieving that score	Percentage of Students in each category (%)	3	24		2	9		1	11		0	5		<p><b>Action:</b> Assignments in Engineering 1 correlating professional success with improvement in cognitive skills.</p> <p>Fall 2020 Milan Georgevich (09/15/2018)</p> <p><b>Action Category:</b> Teaching Strategies</p>
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	<p>academic success strategies related to the study of Engineering, which include:</p> <ol style="list-style-type: none"> <li>1. Structuring your life to minimize distractions,</li> <li>2. Setting goals,</li> <li>3. Working collaboratively with other students,</li> <li>4. Making effective use of professors,</li> <li>5. Making a commitment to your study,</li> <li>6. And communicating to family and friends about your academic priorities.</li> </ol> <p><b>Standard and Target for Success:</b> If a student wrote what was irrelevant to the question, the student earned a score of 0. If the student did not write about any intellectual skills, but wrote about at least one of the academic success skills, the student earned a score of 1. If the student wrote about two levels of intellectual skills and one academic success strategy, the student earned a score of 2. If a student wrote about more than two levels of intellectual skills and more than one academic success strategy, the student earned the maximum score of 3.</p> <p>Interpretation of scores is as follows:  Complete understanding -&gt; 3  Good understanding -&gt; 2  Some understanding -&gt; 1  No understanding -&gt; 0</p> <p>If 70% or higher students achieved anywhere from complete to good understanding then the goal of this SLO has been accomplished.</p>	<ol style="list-style-type: none"> <li>3. Poor introspective skills.</li> <li>4. Plain and simple lack of interest in planning to improve their cognitive skills.</li> </ol> <p>Poor writing skills persist because this course has absolutely no college level writing course as a pre-requisite. Same is the reason for poor quality research skills.</p> <p>For the students who met the SLO target, have tremendous interest in their engineering career and they are constantly vigilant about their skill improvement to accomplish their goals. The student's not meeting success standards could have been due to combination of factors. Typical factors we have seen hindering student success in community colleges are:</p> <ol style="list-style-type: none"> <li>1. Lack of engagement.</li> <li>2. Demanding work and college schedule.</li> <li>3. Sudden change in student's life condition that required attention and time resources to be redirected from studies towards resolution of such condition.</li> </ol> <p>(09/15/2017)</p> <p><b>Faculty Assessment Leader:</b> Satish Singhal  <b>Faculty Contributing to Assessment:</b> Satish Singhal, Matin Lackpour</p>	

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	<p><b>Related Documents:</b>  <a href="#">Spring2017PLO_And_SLO_ReportForEngr1.docx</a></p> <p><b>Exam/Test/Quiz</b> - Students were to write a one-page assessment of their cognitive skills which they will utilize in their chosen engineering discipline, these could include: remembering, understanding, applying, analyzing, evaluating, and creating. Also, they could write about applying their academic success strategies related to the study of engineering which include: structuring their life to minimize distractions, setting goals, working collaboratively with other students, making effective use of their professors, making a commitment to their study, and communicating to family and friends about their academic priorities.</p> <p><b>Standard and Target for Success:</b> It is expected that 75% of the students are successful. That is, that 75% of the students score 2 or 3 on the assignment, based on the following rubric:  0 –No understanding  1 –Some understanding  2 –Most understanding  3- Complete understanding</p>	<p><b>Semester and Year Assessment Conducted:</b> 2018-19 (Spring 2019)  <b>Standard Met?</b> : Standard Met  The question was given to the class with a 2-week deadline. The following hint was emailed to the class:  ” The first part of the question (Cognitive Skills) is discussed in chapter 3. The second part (Success) is covered in chapter 1. Please read these chapters first to get an idea about these topics and then answer the question based on your own understanding and experience.”</p> <p>Equal weights were given to each part of the question (50% Cognitive Skills, 50% Success).</p> <p>As expected, almost everyone could provide very good examples of how to implement academic success strategies. This is mainly due to the fact that the whole concept and strategies are tangible and easy to understand.</p> <p>On the other hand, what differentiates the students in their overall evaluation is their understanding of Bloom’s “Taxonomy of Educational Objectives”: Remembering, Understanding, Applying, Analyzing, Evaluating, Creating. The answers are sometimes very general and do not specifically point to a specific category.</p> <p>Overall, the outcome of SLO was satisfactory. I believe that the given hint could lead the students into the right direction, so they had a good understanding of what the question is asking for. To improve the results for upcoming semesters, a more comprehensive discussion on Bloom’s “Taxonomy of Educational Objectives” could be helpful.</p> <p>From the 3 sections of Engineering 1 that were assessed, no students (0%) earned either a score of 0 or a score of 1. Scores of 0 or 1 correspond to students not being successful, while scores of 2 or 3 correspond to students</p>	<p><b>Action:</b> The instructor will direct students to discuss cognitive skills and apply academic success strategies related to the study of Engineering, in pairs during class time. (08/30/2020)  <b>Action Category:</b> Teaching Strategies</p>

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being successful at this SLO. Out of a total of 58 students, 30 (52%) earned a score of 2 and 28 (48%) earned a score of 3. Thus, 100% of the students (all 58) scored 2 or 3 and therefore were successful at applying at assessing cognitive skills and applying success strategies related to the study of Engineering. (08/30/2019)

**% of Success for this SLO:** 100

**Faculty Assessment Leader:** Reza Jafarkhani

**Faculty Contributing to Assessment:** Milan Georgevich

## ECC: ENGR 9:Engr Mechanics - Statics

Course SLOs	Assessment Method Description	Results	Actions
<p><b>SLO #2 Use Diagrams to Solve Problems</b> - Draw diagrams and determine distributed forces, shear forces, and moments in beams.</p> <p><b>Course SLO Status:</b> Active</p> <p><b>Course SLO Assessment Cycle:</b> 2014-15 (Spring 2015), 2016-17 (Spring 2017), 2018-19 (Spring 2019)</p> <p><b>Input Date:</b> 11/21/2013</p>	<p><b>Exam/Test/Quiz</b> - Students are directed to draw the shear and bending moment diagrams for a beam shown in a figure provided. Then they are to determine the shear and moment at the middle of the beam. Students who drew incorrect shear and moment diagrams, or wrote nothing, earned a score of 0, corresponding to "no understanding", while students who drew the shear diagram correctly, but not the moment diagram, earned a score of 1, which corresponded to "some understanding". Scores of 0 or 1 corresponded to students being unsuccessful. Students in the "most understanding" category completed the problem correctly, but did not label axes and constructed incorrect scales, earned a score of 2. Those students in the "complete understanding" category completed the problem with no errors and earned the maximum score of 3. Scores of 2 and 3 correspond to students being successful at this SLO.</p> <p><b>Standard and Target for Success:</b></p> <p>The target for success was 90%, since Engineering 9 is an advanced course for a Community College, requiring both a Physics and Calculus II prerequisite.</p>	<p><b>Semester and Year Assessment Conducted:</b> 2018-19 (Spring 2019)</p> <p><b>Standard Met?</b> : Standard Not Met</p> <p>From the only section of Engineering 9 that was assessed, 2 students (9.5%) earned a score of 0 and 2 other students (9.5%) earned a score of 1. Scores of 0 or 1 correspond to students not being successful, while scores of 2 or 3 correspond to students being successful at this SLO. Out of a total of 21 students, 8 (43%) earned a score of 2 and 9 (43%) earned a score of 3. Thus, 81% of the students (17) scored 2 or 3 and therefore were successful at drawing diagrams and determining distributed forces, shear forces, and moments in beams. However, 4 students (17%) scored a 0 or 1 and were thus unsuccessful at this SLO.</p> <p>Most students did well, though the students in the "Most understanding" category did the problem correctly, but made easily correctable errors such as not labeling axes sufficiently or drawing the diagrams sloppily (not using a straight-edge when appropriate, not using a linear scale on the axes). In several cases they simply did not answer part of the question, even though the information necessary for the answer was evident in their work. (They don't get credit if I have to search for the answer.)</p> <p>The students in the "Some understanding" category drew the shear diagram correctly, but messed up on the bending moment diagram.</p> <p>The 2 students in the lowest category did not even draw the shear diagram correctly.</p> <p>Even though most students did well on the exam, getting the correct answer, some of them did more work than was necessary. I emphasized the shortcuts more than in previous semesters and this was not as much of a problem as it was in the past.</p>	<p><b>Action:</b> The instructor will direct students to work in pairs during class, to draw diagrams and determine distributed forces, shear forces, and moments in beams. (09/12/2020)</p> <p><b>Action Category:</b> Teaching Strategies</p>

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		<p>I do not expect to teach this course again, so I have no plans for improving the teaching of this topic. (09/12/2019)</p> <p><b>% of Success for this SLO:</b> 81</p> <p><b>Faculty Assessment Leader:</b> Jill Evensizer</p> <p><b>Faculty Contributing to Assessment:</b> Milan Georgevich</p> <hr/> <p><b>Semester and Year Assessment Conducted:</b> 2016-17 (Spring 2017)</p> <p><b>Standard Met? :</b> Standard Not Met</p> <p>There were 28 students who were assessed for this SLO. Fifteen of them (53%) scored 3 and 5 (18%) scored 2. Thus, 71% of the students were successful at this SLO. Five (18%) scored 1 and 3 (11%) scored 0. Thus, 29% of the students were unsuccessful at this SLO. This falls below the 90% target success rate. Next time that the course is taught, the instructor will assign, collect, and grade homework related to drawing diagrams and determining distributed forces, shear forces, and moments in beams.</p> <p>ANALYSIS: Most students did well.</p> <p>The students in the “Most understanding” category did the problem correctly, but made easily correctable errors such as not labeling axes sufficiently or drawing the diagrams sloppily (not using a straight-edge when appropriate, not using a linear scale on the axes). In several cases they simply did not answer part of the question, even though the information necessary for the answer was evident in their work. (They don’t get credit if I have to search for the answer.)</p> <p>The students in the “Some understanding” category drew the shear diagram correctly, but messed up on the bending moment diagram.</p> <p>The 3 students in the lowest category did not even draw the shear diagram correctly.</p> <p>Even though most students did well on the exam, getting</p>	<p><b>Action:</b> Next time that the course is taught, the instructor will assign, collect, and grade homework related to drawing diagrams and determining distributed forces, shear forces, and moments in beams. (09/12/2018)</p> <p><b>Action Category:</b> Teaching Strategies</p>

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		<p>the correct answer, some of them did FAR more work than was necessary. I don't know if that was because they didn't understand the shortcuts or didn't think that I wanted them to use them. It was a take home exam, so they had plenty of time to do the problems the long way. I went out of my way to emphasize and explain the shortcuts and fewer students failed to use them than in previous semesters. The diagrams were sized better than in the past and drawn more neatly.</p> <p>Next semester I will try to collect and grade some homework problems similar to this problem, prior to the exam. There is often a crush near the end of the semester, so even when I collect problems, I am not always able to get them graded before the exam. Also there is not enough time in class for the students to practice working the (long) problems. I plan to try to get this course changed to a 3-unit, 4-hour class to allow an hour of in class problem solving each week. That would help a great deal. (09/11/2017)</p> <p><b>Faculty Assessment Leader:</b> Jill Evensizer <b>Faculty Contributing to Assessment:</b> Milan Georgevich</p>	
		<p><b>Semester and Year Assessment Conducted:</b> 2014-15 (Spring 2015)</p> <p><b>Standard Met? :</b> Standard Not Met</p> <p>Two students (6%) scored 0, exhibiting "no understanding", while 5 students (14%) scored 1, which corresponds to "some understanding". There were 16 students (46%) who scored 2, corresponding to "most understanding", while 12 students (34%) scored 3, which corresponds to "complete understanding". Thus, 80% of the students were successful at this SLO. Though this success rate is fairly high, it did not meet the 90% target. Reasons for this are that students were unable to draw appropriate diagrams, did not label properly, and did not use correct scales. (05/21/2015)</p> <p><b>Faculty Assessment Leader:</b> Jill Evensizer <b>Faculty Contributing to Assessment:</b> Milan Georgevich</p>	<p><b>Action:</b> The next time that Engineering 9 will be taught, the instructor intends on emphasizing short cuts, which will help students in not getting bogged down with doing far more work than is necessary. In addition, the instructor will stress the importance of drawing neat, properly labeled diagrams, with correct scales. (05/21/2016)</p> <p><b>Action Category:</b> Teaching Strategies</p> <p><b>Follow-Up:</b> The instructor emphasized short cuts, in order to help students in not getting bogged down with doing far more work than is necessary. In</p>



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addition, the instructor stressed the importance of drawing neat, properly labeled diagrams, with correct scales. Based on these actions, the instructor noticed a slight improvement in student learning. (08/31/2016)