

The following SLOs for the Industrial Engineering program are assessed during the 2015-16 Academic Year:

Year 3: 2015-2016	
1. Which SLO(s) to assess	<p>SLO c - <b>Ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.</b> Assessed in ENGR 4620, senior design by Dr. Bowen (Spring 2016)</p> <p>SLO e - <b>An ability to identify, formulate, and solve engineering problems.</b> Assessed by Dr. Ganjeizadeh in INDE 4400 (Spring 2016).</p>

#### **Assessment of SLO (c):**

Capstone project that included discussion of constraints and engineering standards involved in designing a solution for their client's real-world problem was assessed by instructor according to a rubric. The rubric assesses 9 dimensions. Each dimension is evaluated according to an anchored outcome from one to eight. The relevant dimension for this assessment is: System Design/Redesign with anchored scoring from 1-'System was not designed/redesigned' to 8 - 'Substantial system design/redesign with clearly positive impact'

On the system design/redesign rubric dimension, students scored an average of 85%, with a range of 87.5% to 75%. This means that most student teams achieved, "System design/redesign that was substantial with at least some positive impacts."

Assessment results show that students have a more difficult time with SLO (c). This is because the problems used for assessing SLO (c) are generally difficult, and require proficiency in computer programming, as well as working with logic simulation software where students must implement large-scale, complex digital logic. Students who perform well in SLO (c) are generally very capable students in our program, who would perform well in a broad range of courses.

#### **Assessment of SLO (e):**

The course used for assessing this outcome is INDE 4400, Systems Modeling. Assessment was conducted by Dr. Ganjeizadeh. The assessment tools used are; Homework, Exams and Pre/post knowledge test. Sample problem to test student abilities to formulate and solve an engineering problem:

Radovilsky Manufacturing Company, in Hayward, California, makes flashing lights for toys. The company operates its production facility 300 days per year. It has orders for about 12,000 flashing lights per year and has the capability of producing 100 per day. Setting up the light production costs \$50. The cost of each light is \$1. The holding cost is 0.10 per light per year.

The rubric used was, how well the students could design the production run, minimizes costs Two different performance indicators that map to SLO (e) had new items that were assessed in the 2015-16 academic year: