Certificate, Power Generation
Community and Technical College
AY 2012/13-2013/14

Submitted by: Brian Ellingson
Contact Information: beellingson@alaska.edu
Date: 12/4/14

1. Assessment information collected

Note: "Test Results" reflect aggregated data from several test questions selected during each semester, reflecting the individual SLOA topic. Target is to have at least 75% of class reach the desired outcome. Individual topic observations are included in the Conclusions section.

SLOA's evaluated this year were SLOA 1: Safety Awareness; SLOA 6: Water Management; SLOA 7: Equipment Identification.

a. SLOA 1: Safety Awareness
   i. Test Results from PRT 110: Intro to Occupational Safety, Health and Environmental Awareness. PRT 110 is also a required course for the AAS in Process Technology. Fall 2013 Final Exam results tracked for this evaluation.
      1. PPE (Personal Protective Equipment) knowledge question – 96% correct
      2. OSHA Permit Requirements knowledge question – 83% correct

b. SLOA 6: Water Management Skills
   i. Test results from PRT 120: Water Quality Management. Fall 2013 Final Exam results tracked for this evaluation.

      PRT 120: Test results indicated 93% of students passing the tests (associated with Outcome #6) with a 75% or higher score.

      PRT 120: Skill evaluations performed for the water quality exercise indicated 80% of students received a passing score.

c. SLOA 7: Identify Equipment
   i. Test Results from PRT 140: Instrumentation I. PRT 140 is also a required course for the AAS in Process Technology.

Final Exam PRT 140	Spring 2013	Spring 2014
Written: How to identify instruments (2 questions)	35.7%	70.3%
Hands-on: Identify 3 instruments	54.3%	70.3%

2. Conclusions drawn from the information summarized above

a. SLOA 1: Safety Awareness
   i. PRT 110: Students demonstrated the required basic understanding of PPE that would be required for process technicians at power plants. No additional program changes are necessary.
   ii. PRT 110: Students demonstrated adequate knowledge of the three primary permit requirements outlined by OSHA. Note that students who did make in error in the answer correctly identified other OSHA requirements outside of the three identified as primary in class. While outcomes were met, percentages may be improved by placing more emphasis on the primary permit requirements as defined by OSHA.

b. SLOA 6: Water Management Skills
   i. PRT 120: Student performance meets desired outcomes; course material is adequately covered. Students would benefit from more hands-on activities with industry standard equipment to increase their experience levels at graduation. Laboratory space needed to enable students to perform testing and analysis during water treatment course.
   ii. NOTE*** The PRT 120 course instructor submitted the course syllabus and textbook to the Alaska State Water Board for review. During this spring 2014 review, it was determined that the PRT 120 course would be an approved education and training prerequisite to take the Alaska State water treatment operator provisional test.
   iii. Instructor Comments:

<u>COMMENTS (Ben Stacey – PRT 120 Water Quality Adjunct Instructor)</u>

Water treatment is essentially a chemical and biological process. The Process Technology program is lacking adequate laboratory space in order for students to fully perform and understand many of the different laboratory procedures associated with operating a water treatment facility. The ability to analyze water for biological organisms is a key function for wastewater operators. Likewise, drinking water operators need to perform, observe and understand how total coliform bacteria samples are collected and processed. The UAF Utilities department has been very generous in allowing the Process Technology Program to use the water treatment plant as an operating laboratory, but even this facility has its limits. PRT 120 is a very important class for the program. Our water resources are essential for the process industries and life itself. The skills and concepts students learn in PRT 120 extend to many different career fields within the variety of industries throughout Alaska. Please continue to support this class.

c. SLOA 7: Identify Equipment
   i. PRT 140: Note that increased emphasis on this topic in 2014 resulted in much higher success rate.
   ii. 2014 Success rate of 70.3% is still below the target level we've set. More emphasis is needed.

3. **Curricular changes resulting from conclusions drawn above**
    a. PRT 140: Plan to include more hands-on instrument identification in class activities and tests.
    b. PRT 110: No major curriculum changes recommended. See note re: increased emphasis on the Primary permit requirements from OSHA.
    c. PRT 120: No major curriculum changes recommended. Plan to provide more opportunities for students to perform hands-on water testing and analysis.

4. **Identify the faculty members involved in reaching the conclusions drawn above and agreeing upon the curricular changes resulting**
    a. Brian Ellingson, Associate Professor, Program Coordinator
    b. Robert Hook, Assistant Professor
    c. Teresa Lantz, Assistant Professor
    d. Ben Stacey, Adjunct Professor