Appendix #4.1

Faculty Report on Evidence of ASNS Degree Program Learning Outcome (PLO) Achievement

Course & Title: Chemistry 161 - General Chemistry I

Semester: Fall 2012

- Select two samples of student learning evidence that demonstrate exit-level achievement of PLOs, one at the exemplary level and another at the minimal level. Choose evidence from embedded assignments, projects, or exams that are normally included as part of the class with an appropriate degree of independence.

- PLO being assessed this semester:
  Upon successful completion of the ASNS Degree Program, students will be able to explain the natural and technological world using reflection and quantitative analysis including preparation of a plan to collect, process, and interpret data; evaluation of the plan, procedures, and findings; and communication of the conclusions.

- Hallmarks that this course PLO supports
  To satisfy the **Physical Science (DP)** area requirement, at least two thirds of a course will
  - Use the terminology of the physical sciences.
  - Involve knowledge and theories relating to processes in the physical sciences.
  - Demonstrate inquiry that is guided by observation/experimentation and reasoning and mathematics.

Briefly describe coursework designed to prepare students to demonstrate this PLO.
This evidence for demonstrating achievement of PLO #1 was based on Midterm #2, Chemistry 161. The exam covered calculating molarity and determining the number of ions present in a given volume of a solution; distinguishing between oxidation and reduction and the resulting ionic charge; balancing equations and determining the nature of substances based on the descriptions of reactions; identifying oxidation states, wavelength, atomic orbitals, shells, subshells, and orbital shapes; explaining the nature of noble gases. Numerous calculations and diagrams are required with detailed descriptions.

This evidence is rated: exemplary
Briefly describe your assessment evidence as it correlates with the PLO hallmarks and identify qualities in the student work that establish exit-level quality appropriate for the ASNS degree.
All the hallmarks are clearly covered by this course and support the PLOs for the ASNS degree. This particular student's work indicate that s/he had mastered the terminology and knowledge of chemistry and had a strong foundation in the fundamental theories. The only question that lost any points was not completely answered, and it looked like an it might have been an oversight. The complete answer was written in with a different colored pen probably during the follow-up session for the exam.

This evidence is rated minimal
Briefly describe your assessment evidence as it correlates with the PLO hallmarks and identify qualities in the student work that establish exit-level quality appropriate for the ASNS degree.
All the hallmarks are clearly covered by this course and support the PLOs for the ASNS degree. This student appeared to be working too fast as some of the parts of questions were left out. What was done was correct and indicated a basic understanding of the terminology, knowledge, and theories of chemistry. The complete answers were written in with a different colored pen probably during the follow-up session for the exam.

Briefly describe other coursework through which students demonstrate achievement of the hallmarks for this PLO. No other coursework was submitted.