Assessment Plan: Environmental Science Major

PLO 1: Students will demonstrate an understanding of the process of science, and of the concepts and theories of biology across a broad range of organizational levels: molecular, cellular, and organismal.

1) Students will take the ETS Major Fields Test in Biology as part of the capstone course in biology, Biology 497, Biology Seminar.
   Criteria for success: The overall group mean on the ETS exam will be $\geq 75^{th}$ percentile and at least 50% of our students will have an overall score $\geq 60^{th}$ percentile. Additionally, the same criteria established for the overall ETS score will be applied to each of the 4 sub-disciplines, which are *Cell, Genetic & Molecular, Organismal, and Population, Ecological, & Evolutionary Biology*.

2) In conjunction with the development of students' content knowledge and process of science skills, students' quantitative skills should also develop throughout the program. We use the ETS assessment indicator for quantitative skills to verify that these skills are in place by the time our students finish their education at PLNU. Since the Assessment indicator data is only given for the institution as a whole, this will be an average measure of how our department is doing in preparing students in this area as individual student data is not available.
   Criteria for success: The overall group mean on the ETS exam for the quantitative assessment indicator will be ≥75th percentile.

PLO 2: Students will demonstrate a foundational knowledge of the principles of physical, organic, analytical, and inorganic chemistry, including the structure of matter, fundamental chemical reactions, and the factors that regulate such processes.

1) Students will take the ACS General Chemistry exam at the end of the General Chemistry sequence.
   Criteria for success: The average score for the Environmental Science majors will be higher than the 50th percentile.

2) Students will take the ACS Analytical Chemistry exam at the end of the Analytical Chemistry sequence.
   Criteria for success: The average score for the Environmental Science majors will be higher than the 50th percentile.

PLO 3: Students will understand the basic techniques of chemical investigation and the fundamental principles and operating procedures of the major instruments used in chemical characterization and analysis.

1) Assessment tools yet to be designed.
   Criteria for success: Criteria not yet determined.

PLO 4: Students will participate in the life of the departments of Biology and/or Chemistry by involvement in science clubs and/or in various positions of responsibility such as graders, tutors, and teaching assistants.

1) Student participation in Biology/Chemistry clubs and in positions of responsibility will be tracked and recorded.
   Criteria for success: At least 80% of our students will participate in one of these positions during their time at PLNU.

PLO5: Students will develop career goals and define a path by which to achieve these goals.

1) In order to be cleared for course registration each semester, students will answer a questionnaire regarding their career goals and their plan by which to achieve those goals and then discuss the questionnaire with their faculty advisor.
   Criteria for success: At least 90% of our students will participate in this questionnaire each semester.

PLO6: Students will develop a rationally defensible integration of science and faith, particularly with regard to environmental stewardship.

1) During their senior year, students will defend the integration of their faith with various scientific topics via written and oral presentations.
   Criteria for success: At least 80% of our students will score at the ____ level.

PLO 7: Students will gain entry to professional or graduate schools, or to science-related careers.

1) After graduation, alumni will be tracked and data regarding their postgraduate education and profession will be recorded.
   Criteria for success: Success rates for alumni who apply for graduate or professional schools will be > 75% and the percentage of graduates who obtain jobs in science-related occupations will be >70%.