

**Program Level Learning Outcome Assessment
Environmental Science**

PLO3: Students will gather, measure, synthesize and evaluate data from diverse sources using visual, analytical and statistical approaches to describe and interpret relationships, trends and make predictions about future changes.

Learning Outcome	Does Not Meet Expectations	Approaches	Meets	Masters
Gather	Student does not collect data.	Student evaluates data from laboratory or guided learning exercises.	Student gathers data from peer-reviewed journals or web-based data bases.	Student gathers data from publicly available sources, from field or lab-based work or from computational model output. Data is organized and tabulated in an appropriate format.
Measure	Student makes no measurements.	Student makes measurements in a guided, laboratory or class setting.	Student makes measurements in a laboratory or field setting without preconceived notion of outcome.	Students make direct measurements in the field or laboratory, or use model output. Students record data in a project-appropriate manner, i.e. field notebook, laboratory notebook etc.
Synthesize	Student does not synthesize data.	Student interprets data in the context of questions provided by the instructor or laboratory manual.	Student synthesizes data with material being learned in the course or in independent research project.	Students visualize data by creating plots, graphs and/or maps. Data may be visualized with additional results from peer-reviewed research. Data is analyzed for significant trends and correlations.
Evaluate	Student does not evaluate data.	Student evaluates data in the context of the course.	Student evaluates data for robustness, statistical significance and relationship to course/research concept.	Data is evaluated for statistical significance, methodological errors. Data is interpreted in the context of the field to yield insight into Earth systems and processes.