Rubric

Outcome 6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

Assessment Formative

Leader: Rocio Segovia

Performance Indicator	Factor	Level 4: Outstanding	Level 3: Proficient	Level 2: Developing	Level 1: Beginning
6-PI1 – Design an experiment protocol, according to a given hypothesis, available resources, and the factors that must be measured and controlled.	Identification of primary factors and data collection procedure is defined.	Identifies properly all of the primary factors, their information types and defines correct data collection procedures.	Identifies properly most of the primary factors, their information types and defines correct data collection procedures.	Identifies properly some of the primary factors, their information types and defines correct data collection procedures.	Does not Identify properly any of the primary factors.
	Identification of secondary factors and the way to control their effects	Identifies properly most of the factors that may affect the results of the experiment, and the way to control them to minimize their effects.	Identifies properly some of the factors that may affect the results of the experiment, and the way to control them to minimize their effects.	Identifies properly few of the factors that may affect the results of the experiment, and the way to control them to minimize their effects.	Does not Identify properly any of the secondary factors.
	Design an experiment protocol according to the hypothesis/questions to solve, factors and existing constraints	Design a complete experiment protocol that follows all the proper steps and requirements to solve the hypothesis/questions.	Design a experiment protocol that follows most of the proper steps and requirements to solve the hypothesis/questions.	Design a experiment protocol that follows some of the proper steps and requirements to solve the hypothesis/questions.	Does not design a suitable experiment protocol.
6-PI2 – Conduct an experiment by using suitable tools, following the defined procedures and properly reporting the process and results.	The execution of the experiment follows the procedure.	Follows all of the steps defined in the experiment design by properly using the required resources.	Follows most of the steps defined in the experiment design by properly using the required resources.	Follows some of the steps defined in the experiment design by properly using the required resources.	Does not follows the steps defined in the experiment design.
	Reporting of results	Generates well organized reports that include all of the observations, and the reported results are correct.	Generates well organized reports that include most of the observations, and the reported results are partially correct.	Generates reports that include some of the observations, or some of the reported results are incorrect. The report is not necessarily well organized.	The report is incorrect and disorganized.
6-PI3 – Analyze and interpret data to draw conclusions using engineering judgment.	Analysis and interpretation of observations	Analyzes and interprets the reported data by taking into account possible margins of error, and relevant theory.	Analyzes and interprets the reported data by taking into account the relevant theory, but ommits possible margins of error.	Analyzes reported data but fails in the interpretation.	Does not analyze results correctly.
	Conclusions supported by the reported data	Presents conclusions relevant to the formulated hypotheses/questions, and conclusions are fully supported by the reported data.	Presents conclusions relevant to the formulated hypotheses/questions and conclusions are partially supported by the reported data.	Presents conclusions that are relevant to the hypothesis/questions but are not supported by the reported data.	Presents incorrect conclusions.