Student Outcome (6): experimentation
An ability to \(^1\) develop and \(^2\) conduct appropriate experimentation, \(^3\) analyze and interpret data, and \(^4\) use engineering judgement to draw conclusions.

<table>
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<th>Performance Indicator:</th>
<th>Rubric</th>
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| **Develop appropriate experimentation**  
- identify experiment goals  
- describe experimental process and procedures to achieve the goals | Unsatisfactory | Developing | Meets expectations | Exceeds expectations |
| Does not identify goals nor determine appropriate data to collect.  
Does not identify or describe applicable experimental processes and/or viable procedures. | Identifies some goals and/or data, but may be inadequate for the intended experiment.  
Describes some applicable experimental processes or partial procedures. | Identifies necessary and sufficient goals and appropriate data to be collected.  
Describes one set of applicable and sufficient experimental processes and procedures. | Identifies goals and relevant data that extend the original scope of the experiment.  
Generates multiple applicable experimental processes and procedures |
| **Conduct appropriate experimentation**  
- acquire data  
- present data in a meaningful way | No data presented.  
-or-  
No evidence of thought given to a clear presentation of data to help the reader understand the data. | Some data presented, but presentation is incomplete or unconvincing.  
Reader can grasp general idea, but may have some difficulty understanding the presentation details. | Sufficient data acquired.  
Applies relevant data reduction and presentation techniques.  
Reader can understand the data presentation with little to no difficulty. | Invents new data reduction techniques or new data presentation and visualization techniques.  
Data presentation is exceptionally concise, yet clear and informative. |
| **Analyze and interpret data**  
- compare findings to expected results  
- summarize findings | Findings neither summarized nor related to expected results.  
-or-  
Analysis performed incorrectly. | Summarizes findings in an incomplete way. Can make some sense of the data, but results not compared to expected outcomes. | Summarizes findings in a complete way and compares them to expected results. | Derives unique insight or conclusions from the experimental data. |
| **Use engineering judgement to draw conclusions** | Can’t reach meaningful conclusions for the experiment.  
-or-  
Makes wrong conclusions. | Extracts some valid conclusions for the experiment, but may miss some valid conclusions. | Extracts all relevant and valid conclusions from the experiment. | Uses conclusions to propose new questions and experiments. |