

**Experimental Design Write-Up (25 pts)**  
**Grading Rubric for Students**

| <b>Criteria with Possible Points:</b>                                                                                                                      | <b>Points Given:</b> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| <b>Introduction/Background (3 pts)</b>                                                                                                                     |                      |
| Provides logical background to frame the hypothesis into the background of knowledge for chosen topic..                                                    |                      |
| <b>Observation (3 pts)</b>                                                                                                                                 |                      |
| Initial observation and the hypothesis direction driving the experiment were based on observation from the actual data collected..                         |                      |
| The hypothesis is stated correctly, and the hypothesis is testable.                                                                                        |                      |
| There is a prediction (If...then...).                                                                                                                      |                      |
| <b>Design or Procedure (2 pts)</b>                                                                                                                         |                      |
| Addresses and identifies the variables(Independent and dependent). Accounts for the variability between operators. Has an adequate number of replications. |                      |
| The procedure/design is thoroughly described and written well enough to be appropriately duplicated by someone else.                                       |                      |
| <b>Data recording (5 pts)</b>                                                                                                                              |                      |
| Table(s) are orderly and concise – generated by a computer (not hand scratched). Graph(s) are well done and represent the data well.                       |                      |
| Summary of data/results capture and describe the data.                                                                                                     |                      |
| <b>Discussion (5 pts)</b>                                                                                                                                  |                      |
| Discussion is in depth.                                                                                                                                    |                      |
| Talks about further work that could be done.                                                                                                               |                      |
| Discusses the experimental design and any design flaws. Discusses any other errors or sources of error.                                                    |                      |
| <b>Conclusion (5 pts)</b>                                                                                                                                  |                      |
| The conclusion compares back to the hypothesis and states whether or not the hypothesis is accepted or rejected appropriately.                             |                      |
| Significance of findings are discussed.                                                                                                                    |                      |
| <b>References (2 pts)</b>                                                                                                                                  |                      |
| There are at least 3 literature citations from peer reviewed scientific literature (not websites), and they are formatted correctly.                       |                      |
| Citations are real and were used to provide depth to the prior work, discussion, and/or conclusion.                                                        |                      |