**ENGR 4590 Testing and Statistical Analysis Worksheet**

**Team Name:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

This worksheet is to help organize your team’s testing and analysis to prove that your project meets the design constraints both qualitatively and quantitatively. *Qualitative* pertains to the quality of results; i.e., how well does it work (excellently, okay, poorly, etc.) *Quantitative* numerically characterizes performance in terms of accuracy, repeatability, and anything else relevant. It measures and reports actual numbers in table or graph form, analyzes those statistically (average, standard deviation, etc.), and compares them to the calculated/predicted/goal values. All design constraints can be evaluated qualitatively, and choose 3-5 aspects of your system’s performance to evaluate quantitatively as well.

**Table listing design constraints and test for each:** add more rows as needed.

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| --- | --- | --- |
| **Constraint/Feature** | **Test/Performance Metric** | **Result** |
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**Qualitative evaluation:** Explain how well your project meets the goals. Mention any specific areas that need improvement, and highlight any areas that exceed expectations.

**Quantitative testing:** Choose 3-5 system functions to analyze quantitatively; anything that you could get actual numbers for. Examples include position accuracy, visual/verbal identification accuracy, performance repeatability, time to complete task or sub-task, distance traveled to complete task or sub-task, speed, etc.

For each test: *(Scroll to next page to see all instructions.)*

1. Explain the test you did (to get statistically significant results, test these functions at least 10-20 times each.)
2. Include labeled photos of the testing and urls to short videos.
3. Show the results in table or graph form.
4. Analyze the results to determine average, standard deviation, or any other relevant statistics.
5. Compare those results to your goal and/or simulated/calculated prediction.
6. Comment on the success of that function and possible reasons for any discrepancies in actual versus predicted performance.