# ME430 Senior Laboratory 1 – HW6

## Experiment Design – Phase 2

This homework will go in to your team notebook. Follow good notebook conventions. See the course website for a refresher on what things should be going in to your lab notebook.

After working through Experiment Design – Phase 1, you will probably have many more questions. Set up another meeting with the point of contact for your project to help answer the following:

1. **Revised Project Objectives:**State your revised project objectives. These should be refined over what has been established in Phase 1. A suggested target for the final project objective statement in your final report would take the form:

*"Determine the (dependent variable) to an accuracy of xx% over (independent variable(s)) ranging from yy to zz."*

The dependent and independent variables should be stated in precise engineering terminology. Please be aware that due to variation in projects, other goals may be included in your objective.

1. **Summary of References:**For each reference, include a summary of what relevant information was learned from each. Depending on the quality and usefulness of your references, this may be a few bullet points, to a few pages of notes.
2. **New References to Explore:**
In looking through your literature, you will often find additional references that you want to acquire. List any new references you are in the process of acquiring, but have not yet written a summary for.
3. **Define your Experiment Design Space:**List the decisions that comprise the design space for your experiment. This includes things like what kind of instrumentation will be used, the accuracy of the equipment, what is considered a data point, how long it takes to collect data, how many measurements you expect to take, and what variables are going to be adjusted, and which will be held constant.
4. **Determine Tolerances for Independent Variables:**
For each of the variables that will be measured, identify the range to be measured, what will be used to measure the variable, and the expected accuracy of the equipment you intend to use.
5. **Take Preliminary Data:**
This could be a measurement on a subsystem, or a crude measurement with inexpensive equipment, or a trial run with the intended equipment. List the discoveries uncovered in the process of setting up the equipment and collecting data.
6. **Analyze Preliminary Data:**Decide on the type of analysis that will be done, and create the software model that will analyze your data. List discoveries made from this analysis.