ME 646 - Final Project Proposal Guidelines

The Final Project Proposal should contain the following:

* Title page:
  + Project title
  + Team members
* Project Objectives – up to one page
* Methodologies – 1-3 pages
  + Analytical – how are you going to analyze your data, describe the expected behavior of the system you are studying.
  + Experimental – measurement methods, resolution required.
  + Evaluation – how will you determine if you achieve your goals?
* Equipment / test facilities /support needed – up to one page
* Project schedule (Gantt chart – see <https://en.wikipedia.org/wiki/Gantt_chart> ) - full page

See Final Project Overview 2019 presentation for more guidance about how to develop your project proposal.

The proposals should be for groups of 2, 4 or 6. For groups of 4 (or 6), the project should have 2 (or 3) separate components/measurement tasks that will be evaluated separately from the group output.

Available experimental equipment

Any equipment setup we used in lab

Wind tunnel

Single axis force balance

Six axis force balance

Manometer

Support rods

Pitot tube to measure velocity

Tow tank – described in separate document

Multimeters

USB DAQ

Oscilloscope

Function Generators

Power supplies

Instrumentation amplifiers

Thermocouple amplifiers

Thermocouples

Thermistors

IR non-contact thermal sensors

4-inch long heating cartridge

Photointerruptor switches

Electromagnetic shakers

Load cells ranging from 10 lbf to 5000 lbf capacity

Non-contact optical displacement sensors (~50 mm range)

Accelerometers

Tachometers

Pressure sensors

Manometers

Strain gauges

Servohydraulic testing frame for applying controlled axial force or displacement

Screw-driven uniaxial testing machine

Arduinos

Piezoelectric microphones

Pressure tanks

Furnaces