

MEE443 Initial Report

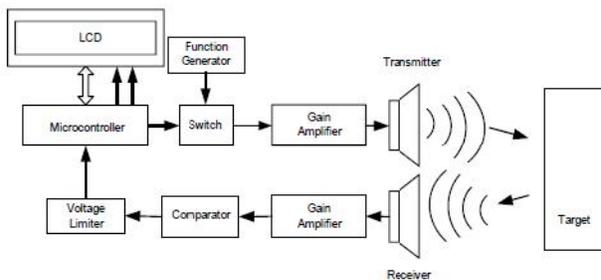
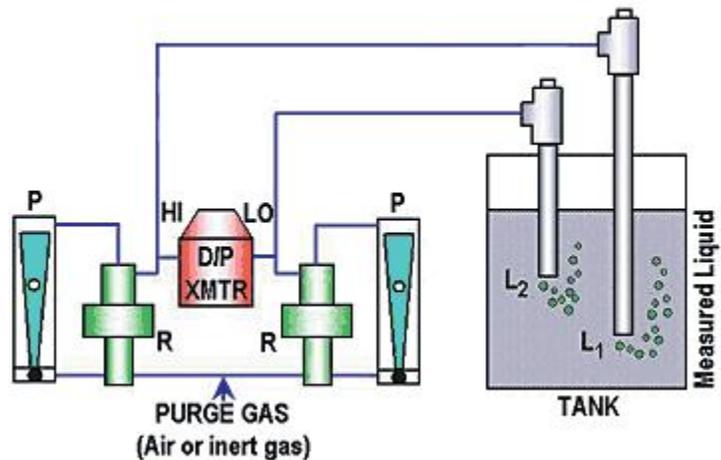
Project Objectives (5 pts)

The objectives for the experiment should be clearly stated in at most a short paragraph. In this paragraph the emphasis is on the output which is to be measured and how this relates to the goal of the project. If you care about the mass flow rate of a system you may do this by measuring the change in the mass of the tank over time. The measurement is mass flow rate. You may want to determine the safety factor for a device used in a surgical suite. You would determine the safety factor of the design which is the end goal but in order to do this you may need to measure applied force and strain.

Apparatus (10 pts)

The focus of this section of the report you will be a schematic drawing of the apparatus being used for the experiment. The measured output should be highlighted and all of the inputs to that calculation must be shown. You need to also explain in simple terms each of the sensors used in the system and the technology used. For example if your instrumentation is an iPhone camera you need to explain frame rate and resolution.

Density Measurement



A really nice system schematic from <http://www.sensormag.com/files/sensor/nodes/2002/1068/fig5.gif>. Yours may not be this nice.

A schematic from: <http://www.projecttopics.info/Electronics/Ultrasonic%20Based%20Distance%20Measurement%20System.png> with the LCD showing distance.

Uncertainty (10 points)

This section covers the uncertainty required for the results. You need to include the data uncertainties for input values which are required to get acceptable results as well as the instrumentation needed to get required data uncertainty. A number of the groups have several complex measurements as a part of their project. Only key elements need to have analysis performed. This requires engineering judgment.

Format, figures and communication (15 points)

The format of the proposal can be either that of a memo or more of a lab report. It is a formal document all sources must be footnoted and figures and tables must be clear. The report should be concise but complete. Length is not an asset.