ENGR 310

# Functional Analysis Assignment

"A single solution is usually a disaster." This quote from Stuart Pugh, a noted design educator, has been proven true by countless engineering design teams over the years. To avoid this situation, successful design teams first try to understand the problem independent of any given solution. You've already conducted a needs analysis (including stakeholder analysis) and set up an objective tree. Now it is time think about what your final solution must **do** (again, in a solution-independent fashion).

Your next assignment, then, is to present the following for review and discussion with your team advisor:

1. Functional Analysis – A "black box" functional analysis that shows the key inputs to your system, the key outputs, and the functional transformations required to transform inputs into outputs. Remember that a function transforms material, energy or information inputs into outputs. State each as a verb-object pair.

2. Functional Specifications – For each of the main functions, identify the performance range that defines the "zone of interest."

3. Design metrics – A table listing the design attributes to be measured, the metrics, how each will be measured to determine the extent to which a design realizes the objectives, units of measure, and needed accuracy.

Place these items, neatly organized, under the appropriate tab in your team notebook. Also include any calculations or research that support your conclusions.