\sim ME450: Checklist for Assignment #1: Design Specification

The Design Specification is due for each Design Team during their laboratory on or immediately following September 25th. Each team should prepare the following:

- 1- A formal 10-minute presentation for their laboratory section. This should be followed by a 10-15 minute Question and Answer period. The formal presentation should include about 5-10 slides or overheads, covering the important aspects of their Project. These include the statement of the Design problem or Opportunity, Background (research or previous or competing designs), a presentation of at least 5 design concepts, a QFD chart, and the definition of the functional metrics by which the design will be evaluated later in the term.
- 2- The Detailed Design Specification; this is a brief written document (see checklist below).

The ME450 web page contains several handouts that will help you with the items that are due. You should review these materials.

Checklist:

- ____ Formal 10-minute Presentation
- _____ Peer Evaluation form #1, from the web page (to be filled out confidentially by each team member)

Written Report (the Detailed Design Specification), including:

- _____ Definition of the Design Problem or Opportunity (~1/3 of a page or 1 paragraph)
- _____ Brief Design Specification (~1 page or less) detailing what the design must accomplish
- (note, this is *not* a detailed design, it is a description of what the design must conform to)
- 5 alternative design concepts (sketch, briefly describe, compare using Pugh Chart)
- _____ Pugh Chart showing the relative merits of each Design Concept: reduce to 1 or 2 "best" concepts.
- _____ A detailed QFD Chart, showing Benchmarks (competing designs) and your "best" design concepts
- _____ Definition of the Functional Metrics that will be used to evaluate the success or failure of your design.
- _____ A Gantt Chart: the timeline that you will attempt to follow for the remainder of the term

Notes: Do not stress over the QFD chart. Make a good attempt, but these are sometimes difficult to fill out completely. You may, however, find that the Pugh chart is a simple and very useful design tool. You will probably end up with several Pugh charts. The first one will include many rough design concepts. You compare them and eliminate the least desirable concepts *but* in so doing you make an attempt to take the good Ideas from the bad concepts, and migrate them to your remaining concepts. What should happen is that your best concepts evolve into fewer, more refined concepts that incorporate the maximum number of good Ideas from all previous concepts. Thus, you will naturally have two or more Pugh charts. You may show the first and last Pugh charts in your Oral Presentation.