Design Contest
ME72 Engineering Design Laboratory
Fall Term, 2001
Objectives, Requirements and Functions Assignment

Assigned: Thur, 4-Oct
Due: Tue, 9-Oct

Now that you know the rules and objectives for this years ME72 Design Contest, perform the initial steps of the design process (by yourself, without your teammate) for a team’s contest devices for the contest.

Carefully avoid thinking of final design alternatives to the contest task.

Include:

**Objective Tree:** consider the widest possible array of objectives for a team’s contest devices.

**Function Block Diagram or Flow Chart:** showing each function and subfunction inside a box (device domain) with suitable inputs and outputs. Consider the most general functions that the team’s devices must perform, without considering how the functions might be accomplished.

**Requirements, Specifications and Constraints:** how fast?, how high?, how durable?, etc. (put numbers here) Justify your requirements and specifications.

Think carefully about the real requirements, specifications and constraints. Do not “parrot” back the details of the rules, but if there are one or more rules that you feel are important to amplify, as they relate to requirements and constraints, feel free to do so.

It might also be useful to include an additional list of Wishes.

**Morphology Chart:** try to consider a wide array of alternative embodiments to accomplish the various functions and subfunctions listed above. Present these alternatives in a graphical chart form. Include a discussion of the pros and cons of the alternatives. A broad range of alternatives (a large design space) here will provide you with many alternatives as you proceed through design, fabrication, and testing of your device.

Keep a copy of this assignment so you can expand on it, together with your teammate, in the next assignment.