

Homework #1

Due at Start of Class , Tuesday Oct. 26, 2010

Note: All problems are from Engineering Design by Dieter, 4th Ed. This is a team assignment. Please list your team number and the members on the top right of the first page of your work.

1. Critically review section 1.9 on Societal Considerations in Engineering Design. Then **do problem 1.9**.
2. A. Review Ch 3: Need Identification and Problem Definition. Section 3.5 is optional reading.

Section 3.5 presents the Quality Function Deployment- a methodology used to define the design problem. It is said to lead to a good definition of the design problem, thus minimizing the changes needed later caused by a poor formulation. The design problem formulation approach that we have discussed in class is motivated by the Axiomatic Approach to Design. I believe this approach is more intuitive and easier to use, and will also lead to a good problem definition.

B. Review section 3.6 and the PDS example in table 3.4. Then **Do Problem 3.5**.

Note that the “must-haves” are what we called the “ primary” functional requirements in class, and the “wants” would thus be “ secondary” FR’s.

When you have developed the set of customer needs (or requirements), examine the list for a) solution neutrality, b) independence. Revise the list as necessary, and explain any changes you made. Are all the primary FRs more or less equally important in your opinion? Comment.

3. Review section 6.8 on Axiomatic Design. **Do problem 6.16**.