

Design Process for ME328 Machine Design

We will be loosely follow the Rapid Learning Cycle Process developed by Katherine Radeka (*The Shortest Distance Between You and Your New Product*).

The design process can at a high-level consist of answering three sets of questions:

1. What and/or why – what is the problem and/or why is it a problem?
2. What decisions need to be made, what knowledge do I need to make them, and how do I gain that knowledge?
3. What is an answer to the question and why do I believe it is a good answer?

Notice, this follows the standard problem-solving format:

1. Problem statement (given/find)
2. Assumptions, solution
3. Answer and evaluation of the answer

These questions can be asked at a very high level (conceptual level of design) and they can be asked at a detailed level as well; design is iterative. The Rapid Learning Cycle process focuses on the second set of questions (these are identified by Radeka as “Key Decisions” and “Knowledge Gaps”).

Since design process can be lengthy and complex, we need to have some sort of plan. Planning requires significant forethought as to what problems will need to be solved before the project is complete. Students with little experience working on large design projects will not be able to do identify what tasks need accomplished at the beginning of a project. However, it is worth some time attempting to do so. As Yogi Bera says “If you don't know where you are going, you'll end up someplace else.” We don't want that to happen.

We'll modify Katherine Radeka's idea of using green post-its to identify/record “key decisions” and yellow ones to identify/record “knowledge gaps”. We won't attempt to distinguish between these two things, so we'll use only one color post-it notes to identify “things we need to do”. After we are finished identifying what need doing, we'll identify importance (high (H), moderate (M), low(L)). Then we'll put them in chronological order (identify which ones need done first, etc.). Will eventually assign each of these to an individual who will be responsible for its completion (the “owner”). That's are plan, we'll give it try. Here is what the post-it notes should eventually include:

Brief description of one thing that needs doing.		ID #
Owner's name	H/M/L	