ME450: Checklist for Assignment #3: Alpha-Prototype

The  $\alpha$ -Prototype is due for each Design Team before Thanksgiving Recess. Each team should prepare the following:

1- A formal 10-minute demonstration of the α-Prototype. This will be followed by a brief Question and Answer period. The presentations may need to take place in various locations to allow each α-Prototype to be viewed by the section instructor and other persons who are in attendance. Arrangements should be made with the instructor prior to the viewing of the α-Prototype so that the class knows where and when each viewing will be held. Think of this as a mini Design Expo, just for students, sponsors, and instructors of the course. You should not prepare a poster or slides; just show the α-Prototype, demonstrate the function, and hand in the materials described below in the Checklist.

## NOTES:

THIS MUST TAKE PLACE BEFORE THANKSGIVING BREAK.

Time and location are at the discretion of the Section Instructor.

It is not necessary for the entire lab section to attend each display. Students are encouraged to invite students from their lab section as well as their sponsor, but this is not required. Only members of the Design Team that are presenting their work and the section instructor are required to be present. Each team should prepare materials that are appropriate for their demonstration, such as drawings, raw performance data, photographs, etc. A formal presentation using an LCD projector is not required, and is probably not appropriate in most cases.

## **Checklist:**

\_\_\_\_\_ Formal 10-minute Demonstration (this is sometimes called a *demonstration of concept*)

\_\_\_\_\_ Peer Evaluation form #3, from the web page (to be filled out confidentially by each team member)

Written Report (the Detailed Design of the α-Prototype + functional evaluation), including:

- A quantitative evaluation of the performance of the  $\alpha$ -Prototype. This must include:
  - The Functional Metrics defined in Assignment #1, comparison against the Detailed Design Spec. This is a professional "critique" of your own work. You should try to identify the weaknesses in your design before your instructor does!
- Complete set of 3-view drawings of parts that were made in the shop (using UniGraphics)
- \_\_\_\_\_ Assembly drawings of your design (updated if necessary from Assignment #2).
- At this point, you should provide all electronic drawings (not hand sketches) in at least two formats:
  - (1) The original CAD files using UniGraphics (or other appropriate software & file type)
  - (2) A "universal" file type, such as Adobe PDF, so that someone, including YOU, can look at the images later, even if the original software used to create them is not available.
  - A detailed Bill of Materials (BoM): components and materials in the  $\alpha$ -Prototype. Include:
    - Part or material description; vendor; part #; quantity; cost; alternative sources (if any).
- \_\_\_\_\_ An updated Gantt Chart: show your original, updated, and actual time lines.

Immediately after the review of the  $\alpha$ -Prototype, and using the feedback from their instructors and classmates, each Design Team should begin planning the necessary modifications and redesigns for the  $\beta$ -Prototype.