Project Report Requirements

The project report is meant to be part journal, part technical report. It should be a working document that team members are adding to throughout the semester. At a minimum, the report must include:

**Before Disassembling the Product**
- Describe the purpose of the product and how it works (your understanding at this point). What types of energy are used and how are they transformed?
- Operate the product, if possible. How does it run? If it doesn’t work? Why do you think it doesn’t work? What type of motion or sounds does the machine make?
- How many components do you think the product is made of?
- How many different types of material are used in the product?

**During Disassembling the Product**
- Record each disassembly step, the tool used, the ease or difficulty involved.

**After Disassembling the Product**
- Record each component, material type, manufacturing process used for each component, model or part number, and any other description necessary (color, texture, etc.).
- Record the function of each component.
- Record the number of components and the types of components encountered (e.g., fasteners, support, housing, gearing, screws, etc.)
- Record why your group thinks each component was made of its type of material.
- Record why your group thinks each component looks the way it does.
- Record a list of design changes/improvements your group thinks could be incorporated into the product at the component level. What features would you change or eliminate to facilitate disassembly or assembly? Are there any parts that can be eliminated or combined?
- Select 3-5 components that are assembled in sequence and develop 3-D CAD diagrams of each component and explain in detail how these components are to be assembled. Any CAD package can be used.

**During Assembling the Product**
- Record each assembly step, the tool used, and the ease or difficult involved.

**After Assembling the Product**
- Clearly explain how your product works now that you have seen its component structure. Does your product run the same as it did before you disassembled it?
- Explain how analyses could be used to design and test your product (or some of its components). What type of basic engineering models could be used? Could you use estimates or would you need very precise models?
- Reflect on the disassembly/assembly processes. Were they the reverse of one another? Why or why not? Were the same set of tools used? Were you able to reassemble the entire product? Why or why not?
• What design changes would your group recommend at the product level (operation, manufacturing, assembly, design, configuration, etc.)? What new features would you recommend? Would you recommend a different shape, configuration, layout, style?
• What recommendations would your group make to the company who designs and makes this product with regard to its design, manufacture, use, maintenance, and recycle?

Project Report

Final written reports are due Friday, December 8, by 4:00PM in 104 Knox Hall (before class). The following format should be used:

− Times New Roman, 12 font, 1 ½ space, 1 inch margins.
− Have a cover page with group number, group member names and signatures, date, and product used.
− Use references, if you have used outside sources of information (use APA referencing style www.apastyle.org).
− Use figures, tables, and pictures to aid in effective communication.
− You must include an executive summary, examples of which are on the class website. This is like an abstract and summarizes the entire report.
− Your report should not read like a book report or essay – it is a technical report and therefore needs sections and subsections. The sections should answer the questions posed regarding the product disassembly, design, manufacturing, and assembly in a coherent, effective manner. It should look like one person wrote it, even though everyone in the group contributed to it.
− Include snapshots of the CAD drawings in the report. Full dimensions are not necessary on the figures, but include a scale or a reference dimension on the figure. Electronic versions of the CAD drawings can be turned in on a disk or CD with the report.

Oral Project Report

Your group will prepare a 6 minute presentation on your product and its design. Include only the highlights of your report and the insights you found to be most interesting. Be sure to include discussion on the design changes your group would recommend. Presentations will occur during the last 2 weeks of class.