

Assignment 04:
Pro/ENGINEER Drawing of a Complex Winch-and-Cart Component

*Last Updated 2/12/2009
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Due: Monday, February 23, 2009 @ 2pm

This assignment is to be submitted digitally on your MEEN 2250 jump drive.

In class on 2/9/2009, each Group Project 01 Team was given a working winch-and-cart device build by students in MEEN 1110.

In groups, disassemble the winch-and-cart to the greatest extent possible without breaking any of the individual pieces and while assuring reassembly can occur. Be sure to keep track of how the winch-and-cart was put together as each team must completely and correctly reassemble these artifacts at the end of Group Project 01 or the project grade will be 0.

Select N complex parts (where N is the number of members in your group) from the disassembled winch-and-cart. It is up to each team to define "complex parts", but these components should have irregular features and require at least three views for correct representation; for example, the bracket on which the winch transmission is mounted. Each individual is to draw a unique complex part from the winch-and-cart (if two identical parts are available DO NOT draw them both, assign a different part to the second team member).

Each team member must use engineering measurement tools like calipers and micrometers to measure key dimensions of their complex part. This process must be documented with a photograph appended to the Assignment 04 submission, or credit will not be given.

With key dimensions identified, draw a 3-D model of the complex winch-and-cart component using Pro/ENGINEER. Enough information must be provided for a machinist to correctly build the part from raw materials. The drawing must include dimensions. Save the part to your jump drive as *assignment04* for evaluation.

Note that for Group Project 01, all the individual digitized winch-and-cart parts must be combined into an assembly drawing of the winch-and-cart. Thus, it is important for team members to communicate about critical dimensions and tolerances to assure all digitized parts can be easily assembled on Pro/E.

Each student will receive an individual grade on Assignment 04 based on the quality of his/her individual work.