Due: 12/01/2008

The design project for MT 475-477 requires that you, individually or in groups of two or three, select a welding project that involves the design and fabrication of an engineering component or product. You must use sound engineering planning and design to develop that project. The objective of the project must be clearly stated, and the procedure should follow basic principles and practices discussed and presented in class and lab. Even though not a requirement, you are encouraged to execute the project and actually fabricate your project. Group size can be larger than the number given earlier if actual fabrication is involved. The project will be graded based on the following points:

- Originality and creativity in problem selection and solution.
- Proposed joint design, including “simple” consideration of material properties (strength, fatigue resistance, corrosion and/or wear resistance, etc.) and joining process characteristics.
- Completeness of engineering drawing (technical details - appropriate dimensions, welding symbols and other engineering notations).
- Adequacy of the proposed material if you were to actually fabricate your product.
- Adequacy of the proposed welding process as well as the specification of filler metal, flux, shielding gas, backing strip, etc.
- Completeness of the outline of fabrication procedure.
- Proposed quality assurance and inspection procedure.
- Demonstration of economic feasibility.
- Demonstration of health and safety impact.

The written report should be brief and concise, yet containing sufficient data and information to allow a manager (with technical background, however, not necessarily in welding) to evaluate your proposal for the financing of the project. The text should be limited to one thousand five hundred words. The numbers of figures and tables are not limited.

Suggested topics:

Workbench
Steel frame desk
Picnic table
Portable grill
Playground equipment
Laboratory setup
Offshore Platform*

A team of students from Fall 2003 constructed a barbecue grill as the class project.
A team of students from Fall 2005 built a set of anchored shelves for welding laboratory storage.

* Just kidding!