WORCESTER POLYTECHNIC INSTITUTE
MECHANICAL ENGINEERING DEPARTMENT

FINAL PROJECT – INSTRUCTIONS AND REPORT FORMAT

Due: March 1, 2001

COURSE No.: ES-2501, Term C, 2001
COURSE NAME: Introduction to static systems

DATE: 16 February 2001

NAME: _____

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Additional Course Information:
http://www.wpi.edu/~cfurlong/es2501.html

Project objective: to generate conceptual design and *detailed structural analysis* of either one of the following design projects:

1) 6-1D. Design of a bridge-truss. Page 320, textbook.
2) 6-2D. Design of a cart lift. Page 320, textbook.
3) 6-3D. Design of a pulley system. Page 321, textbook.
4) 8-2D. Design of a device for lifting stainless-steel pipes. Page 433, textbook.

Use of a PC-based, systems of equations solver, is *strongly recommended.* Please consult handout on "Getting Into and Out of MathCAD." In addition, you can also download and example MathCAD file from the Web page for this course.

You may work with one other person on this project. Each person must submit a separate and complete report. Your name and your partner's name must be on the front title page of the project report (see attached sheet).

The final report shall contain, in the order listed, the following information:

1. *Cover page* (see attached sheet)
2. *Table of contents*
3. *Design description*: a short description of the device and its function, materials used, and manufacturing methods
4. *A clear and neat schematic of the structure/device*
5. *Methodology*: a short description of the methods that were utilized during the complete structural analysis
6. *A clear and neat free body diagram of the entire structure/device*
7. *A clear and neat free body diagram of each member of the structure/device*
8. Complete calculations, including MatchCad solutions
9. *Conclusions and recommendations*
10. *List of references*

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REPORT

as a partial requirement
for
the course on

<COURSE NAME>
<COURSE NUMBER, TERM>

FINAL PROJECT:
<**TITLE**, boldface and capitalized>

Submitted by:

<Sign your name. First partner >
_____

<Type your name. First partner – use alphabetical order. E-mail>

<Sign your name. Second partner >
_____

<Type your name. Second partner. E-mail>

Submitted to:

Prof. Cosme Furlong

DEPARTMENT OF MECHANICAL ENGINEERING
WORCESTER POLYTECHNIC INSTITUTE
WORCESTER, MA 01609-2280

<Date of submission>

Project score:

ORGANIZATION AND PRESENTATION:	_____	out of 20 %
DESIGN DESCRIPTION AND METHODOLOGY:	_____	out of 15 %
OVERALL FREE-BODY DIAGRAM:	_____	out of 20 %
DETAILED FREE-BODY DIAGRAMS:	_____	out of 20 %
COMPLETE STRUCTURAL ANALYSIS: (*Including verification of equilibrium conditions*)	_____	out of 25 %
TOTAL:	_____	out of 100 %
EXTRA CREDIT- Use of a SYMBOLIC solver: (MathCAD, Mathematica, etc.)	_____	out of 10 %