Project Portfolio
Antonio Owen

Cell Phone Holder

Project: Cell Phone Holder for EK 520
Objective: Use Pro/E skills acquired in class to design a part
Time Period: Summer 1 2004
Duration: Three Weeks
Approach: Create a unique, functional, original part. Go beyond class requirement and actually build part.
Results: Successful. Part functions well and holds phone.

For full report see back of portfolio
Project: EK 306 Semester Project

Objective: Use the Material Science Lab and available resources to design a project to explore some of the aspects of material science covered in class. Group project, 3 members.

Our project: To regain ductility that was initially lost at the expense of carburization by tempering the Martensitic microstructure; thus, producing a tougher, longer lasting, better material for metal gears.

Time Period: Fall 2003  Duration: 4-5 weeks

Approach: We pack-carburized 1018 sharpe samples and examined their material properties before and after and then tried to regain the loss in ductility by annealing.

Results: By annealing we did gain back our lost ductility but at the expense of our hardness. We ended right back where we started, proving once again, “there is no free lunch in engineering”.

For full report see back of portfolio
**Project Portfolio**

**Antonio Owen**

**The “MUBE”**

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**Project:** EK 156 Semester Project  
**Objective:** Using the EK 156 Machine Shop, design and build something to better understand manufacturing processes.  
**Time Period:** Fall 2002  
**Duration:** 7 weeks  
**Approach:** My personal criteria for this project was to create something that was original, functional and fun. I designed all the mazes on each face from scratch. There is a small metal bearing that travels in the channel from face to face which travels the maze.  
**Results:** Excellent. Works perfectly and is very fun.
Project: EK 305 Bridge Project
Objective: Using 8 lengths (1.85 m x 3.2mm x 9.5mm) of acrylic strips construct the stiffest possible bridge to span a 420mm gap which will be loaded 150mm to the right.

Time Period: Fall 2003
Duration: 4 weeks
Approach: Using MatLab I wrote a computer program to take in an initial design then tweak it until it was as stiff as possible and then return the coordinates for the new design.

Results: My predicted stiffness was among the highest in the class but my bridge failed early at one of the gusset plates
Project: EK 520 Project

Objective: Use Pro/E skills acquired in class to model a John Deere headlight and then design a protective cover.

Time Period: Summer 1 2004

Duration: 3 Weeks.

Approach: I wanted the cover to have few components, easy to manufacture and easy to install.

Results: The model looks great but I would still like to see this part in action someday.

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SAE: Mini-Baja

Project: Society of Automotive Engineers: Mini-Baja Team
Time Period: 2002-2003
Objective: To design, build and race an amphibious off-road vehicle
Results: We took 18th place overall beating such teams as Princeton, Georgia Tech, West Point, UNH. We took 1st place in Land Maneuverability and 2nd in the Mud Bog.
Project: MN 550 Supply Chain Management Semester Project

Time Period: Fall 2004 Semester

Duration: 9 weeks

Objective: Use Value Stream Mapping and other Supply Chain management techniques to do a lead time reduction project on 4 product families at DePuy’s Orthopedic Instruments Center

Approach: Spend time at the facility gathering data and talking to associates, then creating current and future state VSMs to come up with recommendations.

Results: The recommendations we made are under evaluation by the plant’s industrial engineer and a team is being formed for implementation.