

Senior Design Projects 2006

Tool Changer

Students: Lee Carey, Anthony Williamson

Design of a tool changer for a small cnc routing machine.

Bar Stool Racer

Students: Brian Miller, Greg Allgaier, D.J. Schenk

Design of a bar stool racer. This includes wheels, steering, and a gasoline powered motor designed into, yes, a bar stool.

Nozzle Grinding Cell

Students: Dustin Musselman, Brandon Wagner

Design of a nozzle grinding cell for grinding jet engine parts. It includes design of a laminated tool fixture, assisting in design of the machines and designing the PLC logic to control the machines

Clutch Test Stand

Students: Justin Baker, Dan Davis, Robert Schneider

Design of a clutch test stand for testing clutches as they are manufactured. This includes the overall structure, operator interface, and PLC control of the test stand.

Interfacing Process Control Trainer to the Web

Students: Derrick Tucker, Nathan Webb

Students are rewiring the trainer to interface to a data acquisition card. They are interfacing the trainer through Labview so the trainer can be controlled and monitored via a TCP/IP interface.

Tool Nipper Station with Vision Camera

Students: John Gengler, Tim Painter, Craig Otto

Students are designing an automatic nipper to cutslag off a part. They are interfacing this with a vision system to determine alignment of the part.

Design of a Snow Remover Blade for Ford Trucks

Students: Jeremiah Chmielowiec, Todd Oswalt, Brian White

Students are using Finite Elements to design a snow remover blade.

High Pressure Cleaning Station

Students: Mihai Bradacs, Joel White

Students are designing a spray wash system to remove bird dung from hospital carts that are stored outdoors.

Test Bridge for Statics Course

Students: Kim Barr, Graham Grayson

Students are designing a bridge for use in Engineering Technology labs to verify bridge truss equations.

Water Tank Design for Caron Corp

Students: Derrick Ice, Don Schwendeman, Matt Dill

Students are instrumenting and re-designing a water tank.

First Robotics

Students: Don Becker, Paula Doliboa, Chris Haussler, Zach Shelton

BendArch Engineering is a Senior Design Team comprised of the students listed. They are partnered with Lakota East Robotics for their robotics competition this year. They are using their Miami University experience in helping to mentor thirty-three high school students, who are in sophomore through senior status, build and compete with a championship robot in the First Robotics competition at both the Regional and National level.

Motoman Standard Design for a Torch Tip Changing Box

Students: Adam Tarter, Dan Goforth, Matthew Foister, Jason Collins

This design needed to encompass all of the standard new NX100 ArcWorld product lines offered by the company. Reach study analyses had to be performed for all systems, AutoCAD drawings, BOM's (Bill of Materials), cost effective solutions for saleability, and two alternate designs. One design was a simple torch tip change function, and the other incorporated more of an automatic tip change function with minor operator interaction. We will have video documentation reflecting the actual functionality as part of our final presentation.