IPRO 341
Design and Analysis of a Tool Product

Sponsored by:
Versatility Tool Works & Manufacturing
Industrial cabinet
Team organization

Faculty Advisors
William Maurer
Sheldon Mostovoy

VTW SPONSOR
Coordinator / Secretary
Hyejin Park

Testing Team
Saad Sarvana (leader)
Raihan Rahman
Jae Lee
Shahmeer Khaliqdina
Mark Ende
Jeffrey Bart

Design Team
Sara Cantonwine (leader)
Erica Pauley
Arence Gowe
Thomas Hotz
Andrew Kitaka
Project objective

TESTING TEAM

- Capacity to sustain 550 lbs
- 20,000 cycle life
Testing machine
1st Test result

- 1st Test failed after 632 cycles
  - 88 Rockwell B Guide & Frame
  - 550 LBS loading
  - Frame pivots due to the locking mechanism.
  - Deformation in the Frame
Future plan

- Testing without locking mechanism
- FEA
  - Find high stress area
  - Possible improvement
- Redesign the frame
Design Team

Features

- Rotating/detachable cabinet
- Locking system
- Push-to-open drawers
- Lighting system
- Pull-out work bench
- Integrated computer and tracking system
- Detachable toolbox
Tracking System
Aluminum Bar Coding
Challenges

- Functional and competitive
- Space within tool cabinet
- Customer Feedback
- Feasibility
Design Team Future Plan

- Research and design
- Communication with Versatility Tool Works
- CAD
- Stress analysis and dynamic simulation in CAD software
- Integrate tracking system within the design
Ethical Issues

- Non-Disclosure Agreement