

ME476C SENIOR CAPSTONE PROJECT: CNC ROUTER

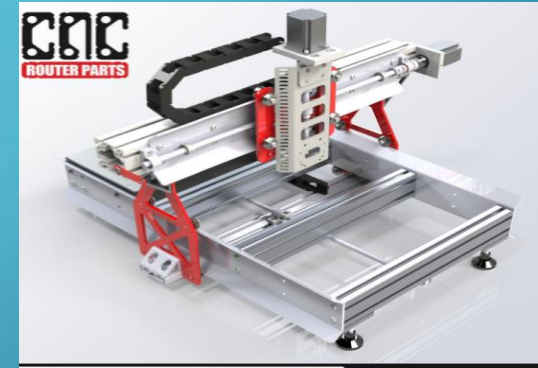
PROJECT DESCRIPTION

- Client: David Willy
- Multiple Use CNC Table
 - Computer Numerical Control (CNC)
 - Uses CAD/CAM
 - Prototyping/Production
 - High accuracy/Repeatable results



BACKGROUND

- Program
- Machine control
- Processing equipments



BENCHMARKING

- VMC vs HMC
- Spindles
- Linear motion
- Bearings
- Software



<http://www.gizmodo.com.au/2012/06/desktop-cnc-machine-lets-you-build-stuff-out-of-more-than-just-plastic/>

CUSTOMER REQUIREMENTS



- Robust Table
- Travel: Approx. 12x12x3 inches
- Uses standard 120V 60Hz
- Open source software
- Safety

Customer Needs and Weightings

| Customer Need | Weighting |
|-----------------|-----------|
| Safety | 19% |
| Cutting ability | 19% |
| Cost | 19% |
| Tolerance | 15% |
| Open Source | 8% |
| Multiple Usage | 12% |
| Size | 5% |
| Portability | 2% |

SCHEDULE

- House of Quality (HOQ)
 - Engineering Requirements (ER)
 - Customer needs to ER correlation
 - Absolute Technical Importance
 - Relative Technical Importance
 - Design generation

BUDGET



- Current build budget of \$1500
- Possible crowdfunding



Questions?

References

"Mechanical Engineering," *David-Willy*, 01-Jan-2016. [Online]. Available: <https://nau.edu/cefns/engineering/mechanical/faculty-staff/directory/david-willy/>. [Accessed: 24-Sep-2016].

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