

About Me

Team Wheelders & The Engineering Design Process in ENGI 120



Operations Research Major

Hello,

My name is Connor Gumbs, a freshman from Miami, Florida studying Operations Research, with long-term career goals of attending business school and eventually working in real estate development.

I'm interested in how data-driven decision making, optimization, and planning can shape and create efficient projects. I'm drawn to opportunities that blend analytical thinking with real-world problem solving, and I'm eager to build the skills that will support a future career at the intersection of analytics, finance, and development.

Other interests:

- Real Estate
- Data Analytics

Skills

- Introductory experience with **CAD tools** from past design projects
- Experience with **fabrication methods** such as laser cutting, foam molding, and plastic molding.
- **Basic Coding Experience**, familiar with introductory programming concepts and using tools like Python or Excel for simple data analysis and modeling.

Working in Teams

During the prototyping phase, I researched materials and manufacturing methods while creating sketches to visualize our design concepts. I collaborated with my team to share findings and incorporate their feedback into the designs.

Role & Responsibility

My primary responsibilities included material research and creating detailed sketches that served as visualization tools for our design concepts. I worked closely with team members to ensure our material selections aligned with both performance requirements and budget constraints.

Overcoming Challenges

A challenge I faced was sourcing affordable materials and determining feasibility, which I addressed by consulting with our design mentor before making commitments. This proactive approach helped us avoid costly mistakes and ensure our material choices were both practical and cost-effective.

Engineering Design Skills

I applied design principles by establishing clear criteria for performance, cost, and manufacturing constraints. Through material research, I evaluated options based on durability, weight, and availability to align with our goals.

Key Improvements

This process improved my ability to balance theoretical requirements with practical limitations throughout the project. I learned to make informed decisions that consider not just technical specifications, but also real-world constraints like cost, availability, and manufacturability.

Technical Skills

Throughout this project, I developed expertise in material selection and testing methodologies essential for engineering design:

Material Analysis CAD Sketching Drop Testing Field Simulation Dimensional Drawing Design Communication

I gained experience in material selection by analyzing properties like flexibility, conformability, and wear resistance. I implemented testing methodologies, including drop tests and simulated field trials, to validate our choices. I also created detailed sketches and dimensional drawings that served as communication tools and fabrication references for the team.