

Daniel Cooke

**SENIOR MECHANICAL
ENGINEERING STUDENT**

CONTACT

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EDUCATION

NORTHERN ARIZONA UNIVERSITY
Flagstaff, AZ

B.S MECHANICAL ENGINEERING
Minor: Business
Graduating December 2024
Cumulative GPA: 3.73

IRONWOOD RIDGE HIGH SCHOOL
National Honors Society
Varsity Lacrosse Captain
Cumulative GPA: 4.3

AWARDS

DEAN'S LIST AWARDS

- 2023 May
- 2022 December
- 2022 May
- 2021 December
- 2021 May
- 2020 December

LUMBERJACK SCHOLARSHIP

-2020 May

ELK'S LODGE SCHOLARSHIP

-2020 July

SKILLS

TECHNICAL

- Geometric Dimensioning & Tolerancing (GD&T)
- Computer Aided Design
- Drawing Creation Compliant to ASME Y14.5
- Technical Writing

LEADERSHIP / INTERPERSONAL

- Strong team leadership skills in fast paced environments
- Applied problem-solving and strategic thinking abilities
- Robust written and verbal communication skills
- Exceptional organizational tendencies

EXPERIENCE

Northern Arizona University, Flagstaff AZ

Senior Capstone: Northrop Grumman Sponsored - Robotic Arm (Ongoing)

- Working with a team to design and manufacture an articulating robotic arm capable of locating positions on any cylinder to aid in drilling through various surface conditions.
- Managing stakeholders expectations for arm budget of \$5,000 with the opportunity to increase to \$10,000 pending demonstrated team performance.
- Overseeing all purchases, maintaining contact with front office for budget management, and recording all purchases for budget tracking.
- Managing Design Bill of Materials (BOM) to ensure Commercial Off the Shelf (COTS) and custom parts are within budget.
- Coordinating across design team elements to build in testing and validation opportunities
- Structuring project milestones to support successful execution of PDR and CDR with Northrop Grumman Engineers.
- Documenting project progress by utilizing web development tools in digital environment.
- Utilizing Finite Element Analysis (FEA) within SolidWorks to analytically verify structural elements.

Junior Design Project: Conceptual Delivery Drone Design Project (2022)

- Collaborated with a team of four to design an automated delivery drone that outperformed competitive products.
- Created functional models to quantify and assess performance of multiple design concepts.
- Utilized Quality Function Deployment to assess customer requirements compliance against engineering design constraints criteria.
- Completed engineering analysis of thrust for propeller design and selection.
- Mathematically modeled stress analysis for the material selection of the drone frame.
- Utilized SolidWorks to design parts and create GD&T drawings in accordance with ASME Y14.5 standards.
- Created assembly drawing with comprehensive part view and Bill of Materials.
- Used Failure Modes and effects analysis (FMEA) to predict possible sources of failure within design.
- Assessed manufacturing techniques (EG- 3D printing, laser cutting, etc.) to balance mechanical robustness with profit margin optimization.

TOOLS

- SolidWorks
- AutoCAD
- MATLAB
- Excel

PROCESSES

- Quality Function Deployment
- Failure Modes and Effects Analysis (FMEA)
- Finite Element Analysis (FEA)