Kaden Mosley

Entry Level Mechanical HVAC and Plumbing Engineer

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STRENGTHS

Design Documentation
Clear drawings and documented assumptions helped faculty reviewers follow design decisions and identify coordination issues early.

Calculation Discipline
During laboratory work, traceable spreadsheet checks made pressure, flow, temperature, and energy results easier to review.

Team Coordination
Student design teammates relied on organized task follow up when milestone submissions required several disciplines to align.

Technical Communication
Client style presentations turned calculations and equipment choices into practical explanations for audiences without design software experience.

Quality Focus
Reviewing floor plans, ceiling constraints, and drawing interfaces before submission helped prevent avoidable design conflicts.

SKILLS

HVAC design | Plumbing design | Thermodynamics | Fluid mechanics | Heat transfer | Air distribution | Hydronic systems | Load calculations | Design documentation | Spreadsheets | Computer aided design | Technical writing | Client communication

SUMMARY

Early career mechanical engineering candidate with supervised academic experience supporting HVAC and plumbing design for municipal and industrial facility scenarios. Completed load analysis, air distribution studies, equipment comparisons, plumbing layouts, piping calculations, and coordinated design documentation. Applied thermodynamics, fluid mechanics, heat transfer, and building systems principles through capstone work, industrial facility studies, and laboratory exercises. Used spreadsheets and **computer aided design** tools to document assumptions, check calculations, organize files, and prepare clear technical deliverables. Worked with student design teams, classmates, faculty reviewers, and client style audiences to resolve coordination issues and communicate design decisions. Brings a positive, **team focused** approach to **quality** work delivered within scope, **schedule**, and budget expectations.

EDUCATION

Bachelor's Degree in Mechanical Engineering

University of Wisconsin Madison | GPA: 0 | 2026 | Madison, WI

Coursework: *Thermodynamics, Fluid Mechanics, Heat Transfer, HVAC Design*

TECHNICAL SKILLS

- **HVAC Design:** Heating loads, cooling loads, ventilation
- **Plumbing Design:** Domestic water, sanitary piping, fixture layouts
- **Mechanical Calculations:** Airflow, pressure loss, equipment sizing
- **Building Systems:** Air distribution, hydronic systems, building services
- **Engineering Software:** Revit, computer aided design, design documentation
- **Spreadsheet Analysis:** Calculation worksheets, traceable formulas, data analysis
- **Thermal Sciences:** Thermodynamics, heat transfer, energy relationships
- **Fluid Systems:** Fluid mechanics, pump behavior, flow analysis
- **Technical Documentation:** Technical reports, design drawings, documented assumptions
- **Project Delivery:** Quality checks, milestone submissions, schedule coordination
- **Facility Design:** Municipal facilities, industrial facilities, building layouts
- **Communication Tools:** Technical presentations, client communication, faculty reviews

EXPERIENCE

Mechanical HVAC and Plumbing Design Student

Capstone Project | September 2025 - May 2026 | Madison, WI

Supported a supervised capstone design for a simulated municipal operations building. Developed coordinated HVAC and plumbing concepts, performed **engineering calculations**, prepared **design documentation**, and presented technical decisions for faculty review.

- Developed **municipal** HVAC concepts using occupancy, ventilation, and fixture requirements for coordinated **building systems**.
- Calculated heating and cooling loads with documented assumptions for faculty **equipment selection** review.
- Prepared supply, return, and exhaust layouts after checking floor plans and ceiling constraints.
- Created **domestic water** and sanitary layouts, then sized representative piping segments for submission.
- Integrated mechanical drawings with structural and electrical information, resolving coordination issues before final delivery.
- Presented calculations, drawings, selections, and design rationale to faculty reviewers for project feedback.

Industrial Building Systems Design Student

University Project | January 2025 - May 2025 | Madison, WI

Interpersonal skills

Multidisciplinary teamwork

LANGUAGES

English — Native

Spanish — Intermediate

MY CAREER

- Mechanical HVAC and Plumbing Design Student at Capstone Project (8 Months)
- Industrial Building Systems Design Student at University Project (4 Months)
- Mechanical Systems Laboratory Student at Student Lab (3 Months)

Completed a supervised industrial facility design study focused on HVAC requirements, preliminary plumbing layouts, engineering calculations, and client style communication. Coordinated student team tasks through milestone submissions while considering constructability, operating needs, schedule, and budget.

- Evaluated **industrial** HVAC requirements using process heat gains, ventilation needs, and variable occupancy.
- Applied thermodynamics, **fluid mechanics**, and **heat transfer** to compare air side and hydronic approaches.
- Built calculation worksheets for airflow, **pressure loss**, and preliminary **equipment sizing** with quality checks.
- Drafted schematic mechanical and **plumbing layouts** using computer based design tools and organized project files.
- Coordinated technical tasks with student designers, completing milestone submissions on schedule for faculty review.
- Explained design choices in a client style presentation addressing constructability, operations, schedule, and budget.

Mechanical Systems Laboratory Student

Student Lab | September 2024 - December 2024 | Madison, WI

Performed supervised mechanical systems laboratory work involving airflow, pumps, heat transfer, instrumentation, spreadsheets, and technical reporting. Collaborated with classmates during setup and data collection, then compared measured results with calculated expectations.

- Tested **airflow**, pump, and heat transfer behavior during supervised **building systems** laboratory exercises.
- Collected instrument readings and compared measured behavior with calculated performance expectations for experiments.
- Used **spreadsheets** to analyze pressure, flow, temperature, and energy relationships with traceable **calculations**.
- Prepared technical reports describing methods, observations, limitations, and conclusions for mechanical experiments.
- Coordinated laboratory setup and data collection with classmates while following prescribed procedures.
- Presented findings to peers and instructors, building concise technical **communication** through laboratory reviews.

PROJECTS

Municipal Facility Systems Study 2026

Good design starts with questions others might overlook. Studied HVAC loads, domestic water needs, sanitary drainage, air distribution, equipment selection, and multidisciplinary coordination for a simulated municipal facility.

Industrial Energy and Airflow Analysis 2025

A spreadsheet can reveal a design decision before a drawing does. Compared industrial HVAC approaches through heat gain estimates, airflow calculations, pressure loss review, and preliminary equipment sizing.

LEADERSHIP & AWARDS

- Mechanical Engineering Senior Design Recognition, 2026
- Dean's List, 2025
- Campus Engineering Design Showcase Student Presenter, 2026

CERTIFICATIONS

- Autodesk Design Academy, Revit for Mechanical Design 2026
- University Continuing Education, HVAC Fundamentals 2025

PROFESSIONAL AFFILIATIONS

- Mechanical Engineering Peer Study Group Coordinator, 2025 to 2026
- Campus Engineering Design Showcase Student Presenter, 2026

ADDITIONAL INFORMATION

Work Status : Authorized to work in United States. No sponsorship required.

REFERENCES

AVAILABLE ON REQUEST