

# ZaydKirk

## HVAC Engineering Intern

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### SUMMARY

Mechanical Engineering student with supervised academic experience developing **HVAC layouts**, selecting equipment, reviewing specifications, preparing bid package content, and drafting commissioning plan elements. Coursework in thermodynamics, heat transfer, **fluid mechanics**, and **building mechanical systems** supports practical design decisions grounded in engineering calculations. Classroom and laboratory work includes reading **architectural plans**, coordinating equipment placement, documenting assumptions, checking units, comparing observed results with calculations, and maintaining organized technical records. Faculty and project teammates have relied on clear presentations, traceable design decisions, and thoughtful responses to review comments. Current capstone work adds building systems coordination, design markups, and preliminary equipment evaluation. Ready to contribute as a curious intern who learns from experienced engineers and supports accurate, well organized project delivery.

### EDUCATION

#### Bachelor of Science in Mechanical Engineering

University of Wisconsin Madison 🎓 GPA: 0 📅 2027 📍 Madison, WI

*Coursework: Thermodynamics, heat transfer, fluid mechanics, building mechanical systems*

### TECHNICAL SKILLS

- **HVAC Design:** HVAC layouts, equipment selection, building mechanical systems
- **Engineering Analysis:** Thermodynamics, heat transfer, fluid mechanics
- **Design Documentation:** Equipment schedules, drawing annotations, design criteria
- **Bid Documentation:** Bid packages, specification notes, specification review
- **Commissioning:** Commissioning plans, equipment checks, functional verification
- **Computer Aided Design:** AutoCAD, mechanical drawings, layout development
- **Engineering Calculations:** Load calculations, unit checks, performance calculations
- **Laboratory Testing:** Airflow testing, pressure testing, temperature testing
- **Project Coordination:** Coordination questions, task sequencing, design reviews
- **Technical Reporting:** Technical reports, observations, engineering conclusions

### SKILLS

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|------------------------|--------------------------|----------------------------|-----------------------|
| • HVAC layouts         | • Commissioning concepts | • Fluid mechanics          | • Equipment schedules |
| • Equipment selection  | • Project coordination   | • Engineering calculations | • Drawing annotations |
| • Bid package support  | • Thermodynamics         | • AutoCAD                  | • Load calculations   |
| • Specification review | • Heat transfer          | • Technical documentation  |                       |

### EXPERIENCE

#### HVAC Design Project Student

University Project 📅 January 2026 - Present 📍 Madison, WI

Supervised classroom design role supporting a small commercial HVAC concept through layouts, equipment evaluation, simulated bid documentation, commissioning planning, and faculty review. Maintains traceable calculations and organized project records while coordinating design decisions with project teammates.

- Developed a commercial HVAC layout using calculated loads and coordinated equipment placement for design review.
- Compared equipment options against heating and cooling requirements, documenting selection assumptions for faculty approval.
- Read **architectural plans** and **mechanical criteria**, identifying routing constraints before preparing revised HVAC documentation.
- Prepared specification notes, **equipment schedules**, and **drawing annotations** for a simulated bid package.
- Drafted commissioning plan elements covering equipment checks, design intent, and **functional verification** activities.
- Presented design decisions during reviews and incorporated faculty feedback into revised calculations and documentation.

#### Mechanical Systems Laboratory Student

Student Lab 📅 September 2025 - December 2025 📍 Madison, WI

Supervised laboratory role focused on mechanical systems testing, engineering calculations, equipment documentation, technical reporting, and coordination with lab partners. Converts measured conditions into clear comparisons that support sound technical conclusions and classroom design work.

- Evaluated airflow, pressure, **temperature**, and **heat transfer behavior** during supervised mechanical systems exercises.

- Recorded test conditions and compared observed results with **engineering calculations** for laboratory conclusions.
- Built spreadsheet calculations for equipment performance exercises and checked units before submitting results.
- Reviewed technical instructions and equipment documentation before each supervised laboratory session.
- Prepared **technical reports** covering methods, observations, calculations, and conclusions for instructor review.
- Coordinated task sequencing with lab partners and communicated discrepancies directly to the instructor.

### Building Mechanical Systems Capstone Student

Capstone Project 📅 September 2026 - Present 📍 Madison, WI

Supervised capstone role supporting a building systems concept through HVAC layout coordination, design input tracking, equipment research, drawing markups, and scheduled faculty reviews. Keeps calculations, references, and design decisions traceable throughout iterative development.

- Contributed to a building systems concept integrating **HVAC layouts** with project constraints during faculty reviews.
- Organized design inputs and tracked coordination questions for timely faculty feedback and resolution.
- Reviewed **equipment information** and **design criteria** to support preliminary selections for concept development.
- Developed drawing markups and supporting documentation for scheduled design review sessions.
- Applied review feedback to refine system assumptions and strengthen supporting project documentation.
- Maintained traceable calculations, references, and design decisions throughout capstone development.

### PROJECTS

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#### Commercial HVAC Layout Study 📅 2026

Created a supervised small commercial building layout with calculated loads, coordinated equipment placement, equipment schedules, specification notes, and commissioning concepts. Iterative faculty reviews improved design clarity and documentation quality.

#### Mechanical Systems Testing Study 📅 2025

Investigated airflow, pressure, temperature, and heat transfer through supervised laboratory exercises. Spreadsheet calculations and technical reports connected measured results with engineering concepts and equipment performance.

### LEADERSHIP & AWARDS

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- Dean's List, Spring 2026
- Mechanical Engineering Department Project Showcase Participant, 2026
- Faculty recognized HVAC design work for clear documentation and thoughtful technical review responses.

### CERTIFICATIONS

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- AutoCAD Foundations 📅 2026
- Building HVAC Fundamentals 📅 2026

### PROFESSIONAL AFFILIATIONS

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- Mechanical Engineering Peer Study Group, Session Coordinator, 2026
- Campus Sustainability Design Challenge, Student Participant, 2026

### LANGUAGES

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- English (Native)
- Spanish (Intermediate)

### ADDITIONAL INFORMATION

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

### REFERENCES

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AVAILABLE ON REQUEST