



ENTERPRISE CROSS FUNCTIONAL

2025 SUMMER CORPORATE INTERN - ENGINEERING

LOCATION	CHILLICOTHE, ILLINOIS, UNITED STATES OF AMERICA
DATE POSTED	MONDAY, JULY 1, 2024
APPLY BY	MONDAY, MARCH 31, 2025
CONTRACT TYPE	FULL TIME
JOB TYPE	INTERN - TEMPORARY
REQUISITION ID	R0000262765

Career Area:

Enterprise Cross Functional

Job Description:

Your Work Shapes the World at Caterpillar Inc.

When you join Caterpillar, you're joining a global team who cares not just about the work we do – but also about each other. We are the makers, problem solvers, and future world builders who are creating stronger, more sustainable communities. We don't just talk about progress and innovation here – we make it happen, with our customers, where we work and live. Together, we are building a better world, so we can all enjoy living in it.



engineering professionals to learn and apply themselves to project work within their teams.

Interns will have assignments that provide them with experience and significant learning opportunities. In addition to this work, Interns can network with management throughout the company to learn about Caterpillar areas outside their assigned team.

Students can deepen their business skills in their assignments through team and business partner interactions, develop their skills, conduct presentations, and measure their success through the performance and evaluation process.

What You Will Do

You'll join a team with diverse project responsibilities and have valuable networking opportunities with all levels of Caterpillar employees. The internship is a 40-hour-per-week assignment lasting 12 weeks.

You can focus on building technical abilities in roles including (but not limited to):

- **Product Design:** Engineer components & systems for Caterpillar products to meet our customers' needs. Deliver solutions by leading collaboration with cross functional teams throughout our value chain starting from initial concept through to production.
- **Simulation/Performance Analysis:** CFD - Computational Fluid Dynamics (ANSYS), FEA - Finite Element Analysis, 3D modelling, root cause investigation; system/subsystem/component design optimization, structural dynamics, development and optimization of Engine, Aftertreatment, Battery, Fuel Cell, Powertrain, and/or Machine System performance.
- **Test/Validation/Hands on:** Apply strong mechanical engineering understanding in a test/validation (hands-on) environment, troubleshooting issues, and collaborating with others for optimal results.
- **Controls Development:** Develop/Implement control system algorithms using Matlab/Simulink for various control systems including but not limited to engine controllers, machine implement controllers as well as powertrain controllers. Will be responsible for understanding the feature requirement, implementing it as well as testing it prior to a production roll out.
- **Electronic Components:** Will be responsible for designing and testing various electronic control modules as well as various electronic components. Will work with various internal Caterpillar clients to understand controller/component requirements, help design Printed Circuit Board layouts as well as perform digital/analog/power circuit analysis and testing. Other duties may include working with suppliers, testing the controllers/components in various environments, ensuring that FMEAs [Failure Mode and Effects Analysis] are conducted and documented to meet stringent Caterpillar quality requirements.
- **Embedded Software Development:** Develop embedded software in C, C# and/or C++ for various electronic control modules. Some examples of embedded software development applications include Datalink communications, Inputs and Outputs [Sensors and actuators], speed calculation, Injection/spark timing, memory management, CPU optimization, multi core design and implementation etc. In addition, some areas of work include developing scripts in Python/Visual Basic for automation.
- **Software Validation/Verification for Electronic Systems:** Verify functionality of a feature or control system algorithm on a HIL [Hardware in the Loop] simulator bench or a SIL [Software in the loop] system. Understand requirements of the feature and/or the schematics of the controller / control system, verify functionality and debug/report anomalies to the development team and help validate fixes.
- **Engineering Data Analytics:** Ability to write and understand computer code; Python; analytics/data science experience; exposure to machine learning concepts/tools; engineering and statistics fundamentals.
- **Process Engineering:** Process Engineering: Apply mechanical, manufacturing, systems and/or industrial engineering knowledge to analyze and optimize an engineering process or processes. Will have the opportunity to leverage problem-solving and communication skills.

What You Have – Skills and Experiences

In this role, you will have the opportunity to contribute your unique skills and experiences. Below are some of the most critical skills.

- Analytical skills, initiating ideas, troubleshooting, root cause analysis, problem-solving, and critical thinking capabilities
- Knowledge of engineering principles, theory, and engineering experience gained through projects, internships, and/or relevant work experiences
- Fundamental understanding of engineering for a manufacturing environment, ability to design and implement materials, structures, machines, devices, systems and processes that safely realize a desired objective or invention
- Organize and manage multiple projects simultaneously, ability to quickly gain, and effectively apply new skills & knowledge
- Success in collaborating with others of diverse cultures, interpersonal styles, and abilities
- Strong written, and verbal communication skills
- Participate in, and build on our inclusive, constructive, and productive work environment
- Ensure all team member's contributions are recognized and valued



2025 Summer Corporate Intern - Engineering
Decatur, Illinois,United States of America

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