PATHWAY TO LEARNING ENGINEERING

Manufacturing and Automation

Course Overview

Students use Siemens software and hardware to design, manufacture, and program automation routines aimed at optimizing manufacturing processes.

Students will:

- Work on team-based projects to integrate research, design and develop prototypes to solve real-world manufacturing problems
- Prepare for industry-recognized certification in Siemens' programmable logic controllers (PLC's) and Siemens NX software

Goals

Develop the skills and knowledge to design, automate, and analyze manufacturing processes while integrating advanced tools, and documentation techniques:

- Apply design principles, including tolerance dimensioning and design for manufacturability
- Gain proficiency in CNC machining, PLC programming, and pneumatics for automation systems
- Collaborate effectively on projects, employing research and problem-solving strategies
- Document and communicate design processes comprehensively using professional standards

- Communicate and document design processes professionally, using Engineering Notebooks, technical reports, and data visualization to present solutions effectively

Major units

- Drawing/Design
- Design for manufacturing
- Design for assembly
- CNC
- Programmable Logic Controllers (PLC)
- Pneumatics
- Work cell creation

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