Program of Study: Computer Engineering

NNTW National Network for the Transportation Workforce

Professional Engineering License

Computer engineers who have worked under a licensed engineer for four years qualify to take the PE exam to obtain their license. The average salary increase for those with a PE license is 5%. Students must obtain engineering degrees from an ABET accredited institution to be eligible for professional licensure.

Year 5-6

Master's of Science in Computer Engineering

Year 6: Students choose electives either from their chosen concentration. Students also work to complete either their Master's project or Master's thesis.

Year 5: During the first year, students take core courses and choose a concentration if applicable.

Computer Engineering Core Courses
Linear Systems Analysis
Random Signals & Noise
Linear Programming
Dynamic Programming
Stochastic Processes
Decision Analysis

Concentration Courses
Image Processing
Information Theory
Multimedia Info Process
Artificial Intelligence
Modern Microprocessors
Computer Vision

Year 3-4

Bachelor's Degree in Computer Engineering

Year 4: Students take senior-level courses and fulfill internship and field-work requirements. Programs not requiring an internship recommended engaging a career exploration counselor to find an internship.

Year 3: Students take specialized courses such as graphic communication tools, systems design, data analysis, methods, planning and processing.

GE Courses
General Chemistry
Social Sciences Synthesis
Humanities & Synthesis
Calculus 2 / 3
Differential Equations

Computer Engineering Courses
Logic Design of Digital Systems
Probability and Random Variables
Data Structures
Signals and Systems
Fundamental Algorithms
Systems Programming

Elective Courses
Intro to Computer Networks
Computer Systems Architecture
Electric Energy Systems Components
Intro to VSLI
Communication System Design
Electromagnetic Compatibility
Power Electronic Circuits

Year 1-2

Associate's Degree / Pursuing Bachelor's Degree

Year 2: Students should continue to complete their GE courses and begin taking lower-division requirement courses. Pre-requisite courses provide students with a basic understanding of theoretical and practical skills.

Year 1: Students are required to take general education courses, but it is also recommended they work to fulfill their degree prerequisite requirements.

GE Courses
Analytical Reading, Expository Writing
Critical Thinking
Oral Communication
Psychology
Physics
Sociology

Computer Engineering-Related Courses
Electric Circuits 1 / 2
C++ for Technicians
Microcontroller System Design
Computer Networks and Systems

Lower-Division / Major Prerequisites
Algebra and Trig 1 / 2
Pre-Calculus / Calculus I

Year 0

High School Diploma

Transportation-related career academies.

U.S. Department of Transportation Federal Highway Administration

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