



## PE – Professional Engineer

While each state licensing board has its own laws regarding engineering licensure, there is a general three-step process for licensure candidates. PE candidates must possess a degree accredited by EAC or ABET. They must take two exams, the Fundamentals of Engineering (FE) exam and the Principles and Practice of Engineering (PE) exam. Most states require four years of acceptable, progressive, and verifiable work experience in the industry. Once students pass the FE exam, they earn an Engineering in Training certificate or an Engineering Intern (EI) certificate depending on the certifying organization.

Year 5-6



## Master's Degree in Civil Engineering (Infrastructure or Asset Management Emphasis)

**Year 6:** Students choose specific maintenance, sustainability or management electives to round out their skill set. Examples include public works administration, environmental impacts, engineering, and public health.

**Year 5:** During the first year, students take core courses.

### Asset Management Courses

Strategic Asset Management  
Asset Maintenance Technologies  
Maintainability Eng. & Management  
Work Planning & Scheduling  
Condition Monitoring & Diagnostics  
Maintenance Analysis & Optimization  
Research Methods  
Health, Safety and the Environment  
Reliability Centered Maintenance

### Project Management

Total Quality Management  
Federal, State and Local Governments  
Public Works Final Project  
Life Cycle Cost Analysis  
Transportation Policy and Economics

Experiential learning includes internships, externships, co-ops and fieldwork

Year 3-4



## Bachelor's Degree in Civil Engineering

**Year 3 & 4:** Students fulfill internship or co-op and fieldwork requirements. Elective courses complement the highway maintenance focus such as construction management, vegetation, sustainability, resilience, public policy, invasive species, solar technology, public health.

**Year 1 & 2:** Students take a number of engineering course to build a strong technical background.

### GE Courses

Calculus, Differential Equations, Statistics, Liberal Arts, and Communications

### Civil Engineering Required Courses

Fluid Mechanics  
Structural Analysis  
Civil Engineering Graphics  
Environmental Impacts  
Fieldwork/Internship  
Senior Capstone Design

### HME-Related Courses

Hydroscience & Soil Mechanics  
Transportation Engineering  
Materials for Constructed Facilities  
Construction Project Management  
Introduction to Asset Management  
Advanced Pavement Design  
Highway Bridges  
Reliability Centered Maintenance  
Engineering Economics

Experiential learning includes internships, externships, co-ops and fieldwork

Year 1-2



## Associate's Degree in Civil Engineering Technology

**Year 2:** Students continue to take general education courses and technical courses that can prepare them for a position as a technologist. Those intending to transfer to a 4-year program will take additional mathematics courses.

**Year 1:** Students are required to take general education courses interspersed with technical coursework. Certifications are built into the curriculum.

### GE Courses

English Composition and Oral Comm.  
Intro to Psychology/Business Ethics  
Trig/Algebra w/ Physics, Statics  
American, State and Local Governments

### Highway Maintenance-Related Courses

Introduction to Asset Management  
Highway Safety  
Surveying-Intro, Station, Highway  
Soils & Storm Water Management  
GPS and GIS Fundamentals

Cemented Aggregate Mixtures  
Construction Estimating & Management  
Inspection  
Sustainability & Resilience  
Pollinators & Invasive Species  
Technology in Transportation Systems  
Civil Engineering Project Capstone

Year 0



## High School Diploma

Transportation-related career academies.