



## 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 (Transportation Geometric Design Emphasis)

**Year 6:** Students choose specific transportation engineering electives to round out their skill set. Examples include traffic operations, intelligent transportation systems, queuing theory, project management, or environmental impacts.

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

### Highway Engineering Courses

Infrastructure Management  
Intelligent Transportation Systems  
Highway Traffic Operations  
Intersection Design  
Environmental Planning & Regulation  
Analysis of Transportation Data  
Transportation Theory and Modeling  
Traffic Safety and Injury Prevention

Transportation and Land Use Planning  
Signals and Systems  
Queueing Theory  
Network Flows and Graphs  
Cost-Benefit Analysis  
Project Management  
Transportation Policy and Economics  
Emergency Response and Evacuation

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

Year 3-4



## Bachelor's Degree in Civil Engineering (Transportation Emphasis)

**Year 3 & 4:** Students fulfill internship or co-op and fieldwork requirements. Elective courses complement highway design, such as construction management, geometric design, pavement materials, traffic operations, and environmental impacts of transportation.

**Year 1 & 2:** Students take several engineering courses to build a strong technical background.

### GE Courses

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

### Civil Engineering Required Courses

Fluid Mechanics, Structural Analysis, Environmental Engineering, Soil Mechanics, Internship, and Senior Capstone Design

### Highway-Related Courses

Construction Management

Geometric Design and Route Planning  
Transportation Systems Engineering  
Materials for Constructed Facilities  
Construction Project Management  
Traffic Operations  
Pavement Design  
Bridge Engineering  
Engineering Economics  
Environmental Impacts of Transportation

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

Year 1-2



## Associate 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/Conflict Resolution  
Trigonometry & Algebra w/Applications  
Physics  
Statics  
Economic

### Highway Design-Related Courses

Intro to Civil Engineering & Architecture  
Building Material & Construction Method  
AutoCAD for Construction Science

Soil and Materials Testing  
Structural Mechanics  
Construction Project Management  
3D CAD: Digital Terrain Modeling  
3D CAD: Building Information Modeling  
Surveying and GPS Fundamentals  
Geographical Information Systems  
Civil Engineering Drafting  
Construction Estimating  
Surveying–Construction/Route/Highway  
3D Modeling and Virtualization  
Sewer & Storm Water Management  
Capstone: CET–Highway Technology

Year 0



## High School Diploma

Transportation-related career academies.