

Civil Engineering

The Civil Engineering major focuses on designing, constructing, and maintaining infrastructure and public works that support modern society. Students learn to apply principles of math, physics, and engineering to projects such as bridges, roads, buildings, water systems, and transportation networks. The program emphasizes problem-solving, sustainability, and project management skills to prepare students for real-world challenges. Typical industry sectors include construction, urban development, environmental engineering, transportation, water resources, and government infrastructure projects.

Job Title Examples:

- Civil Engineering Intern
- Structural Design Assistant
- Project Engineer
- Construction Management Assistant
- Transportation Planner
- Environmental Engineering Technician
- Site Engineer
- Water Resources Engineer
- Field Engineer
- Infrastructure Analyst

Hard and Soft Skills Needed:

Hard Skills:

1. AutoCAD and Civil Engineering Software Proficiency
2. Structural Analysis
3. Geotechnical Engineering Knowledge
4. Surveying and Mapping
5. Project Management Tools (e.g., MS Project, Primavera)

Soft Skills:

1. Problem-Solving
2. Communication
3. Attention to Detail
4. Teamwork
5. Time Management

Further Education/Training Required and/or Suggested:

A BS in Civil Engineering typically qualifies students for entry-level roles, but additional steps are often required for career advancement:

To Enter the Field:

1. Engineer-in-Training (EIT) Certification:
 - Pass the Fundamentals of Engineering (FE) exam to start the path toward licensure.
2. Software Proficiency:
 - Training in tools like AutoCAD, Civil 3D, or SAP2000 may be required.

To Advance:

1. Professional Engineer (PE) License:
 - Requires work experience (4 years under a PE), passing the Principles and Practice of Engineering (PE) exam, and is critical for leadership roles.
2. Specialized Certifications:
 - Options include LEED Accreditation, Project Management Professional (PMP), or specific technical certifications like Certified Construction Manager (CCM).

Summary:

Licensure (EIT → PE) is essential for career growth, and specialized training or certifications enhance opportunities in areas like project management or sustainability.

Professional or Student Associations:

- American Society of Civil Engineers
- Society of Women Engineers
- National Society of Black Engineers