



Certifications

Professional Engineering licensure may be required for some positions. In gaining the necessary experience to qualify for these positions it is likely that careerists will have acquired a number of key certifications that attest to the attainment of a body of knowledge and capability specific to transportation and related ITS and smart city technologies. In these fields certifications for applied and process work are essential (e.g., GIS, CISCO, IMSA Traffic Signals, AutoCAD Electrical, MUTCD). The USDOT [ITS Professional Capacity Building Program](#) offers an ITS Standards Training series appropriate for students and practitioners.

Years 5-6



Master's Degree, Civil/Transportation Engineering, Urban Planning, or Sustainability

Year 6: Students complete electives and required research thesis or professional paper requirements for the degree.

Year 5: Complete core and elective courses within their concentration while selecting specialized independent research and practice activities.

Core Courses

Sustainability and Systems Thinking
Problem Solving (to Discipline)
Transportation Systems Planning

Research Methods Courses

Dynamic Modeling/Statistical Modeling
GIS for Planners
Survey Research, Multivariate Statistics

Other Courses

Mitigation, Adaptation, & Resilience
Environmental Ethics & Policy
Sustainability & Enterprise Development
Urban Infrastructure
Communications for Pubic Engagement
Project Management
Environmental Impact Assessment
Traffic Engineering and ITS

Experiential learning includes planning studios / labs, internship, and practicum

Years 3-4



Bachelor's Degree, Civil/Transportation Engineering, Urban Planning, or Sustainability

Year 4: Select electives in areas of interest and fulfill internship, fieldwork, or senior capstone. Core transportation & Sustainability/Smart City courses.

Year 3: Take core courses in different areas of Civil Engineering, Urban Planning, or Business, depending on focus.

Year 1-2: In a traditional BS/BA program, students take core distribution courses and select path for Major.

GE Courses

Science, Social Sciences, Humanities, Arts & Foundational Core Courses with emphasis on communications

Sustainability/Smart City Courses

Sustainable Cities
Equity and Sustainability
Dynamic Modeling
Urban Policy and Governance
Sustainable Urbanism

General Transportation Planning & Engineering Courses

Transportation Systems & Planning
Traffic Engineering & ITS
Urban Planning

Other

Required Major courses
Senior Capstone
Internship

Experiential learning includes design labs, internships, clubs, and conferences

Years 1-2



Associate's Degree in Eng/Electrical Tech, Applied Information, Telecom

Year 1 and 2: Course requirements vary by institution. Students will complete institutional The Associate's degree and key certifications will provide students with general education requirements as well as and practical skills and competencies in the chosen field.

General Education Courses

Students will develop writing, communication, math, and critical thinking skills.

Applied Skills Courses

AutoCAD/Engineering Graphics
GIS, Electrical

Specific Field Courses & Certification

Each field has a set curriculum and a set of specific industry or discipline related certificates that can be built into the curriculum.

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

Year 0



High School Diploma or G.E.D.

Computer or Engineering CTE coursework if available.