

## Innovative Strategies for Integrating Sustainable Transportation Competencies into Varied Programs of Study

A career pathway in sustainable transportation involves attaining competencies within various planning and transportation programs of study. In addition to acquiring technical preparedness in GIS, AutoCAD, Project Management and American Institute of Certified Planners (AICP) certification, students and incumbent workers on a sustainable transportation career pathway will pursue experiential learning, on-the-job training and other work-based or real-world learning experiences focused on community engagement around transportation, planning and shared-use mobility. Examples of effective integration models are listed that provide curricular and co-curricular value to career preparedness:

### Co-Curricular

#### **University Research Partnerships**

Research partnerships between university faculty and community and regional entities are proven resources in planning, program development, and professional development when they: 1) are implemented over the long-term; and 2) actively involve faculty and both undergraduate and graduate multi-disciplinary students in the implementation of sustainable transportation and/or professional planning research project development. The Bachelor of Urban Planning at the University of Cincinnati is an excellent example of such a program, offering courses and [specialized certificates](#), [study abroad](#) and [co-op or professional practice](#) opportunities.

#### **Work-Based Learning**

In sustainable transportation and planning programs, many institutions either require or strongly encourage work-based learning experiences for their students through internships and co-ops. Industry and education institutions can work together to ensure that students have access to and develop skills that are important components of these sustainable transportation fields. By enrolling in the American Institute of Certified Planners [AICP Candidate Pilot Program](#) candidates can take the AICP exam prior to earning professional planning experience. Many cities, towns and regional planning commissions offer internships that can address sustainable transportation issues.

### Curricular

#### **Engaged Scholarship**

Most universities provide mechanisms to incorporate community projects into student coursework, either through senior design, capstone, or service learning courses. Engagement of transportation organizations with universities to provide community outreach, shared mobility and sustainable transportation course-based projects can serve as a powerful student exposure and recruitment tool to bike share career pathways.

### **Transportation-Focused Course-Based Learning**

Integration of transportation topics and experiential learning into the classroom can be accomplished in various ways, including incorporation of transportation-focused case studies and fieldwork into required coursework; and implementation of assignments that demonstrate understanding of sustainable transportation principles and processes.

### **Competency-Based Curriculum**

A curriculum that meets academic and quality standards, designed and organized by competencies required for jobs and cross-walked with industry skill standards and certifications, can be designed for sustainable transportation. The existence of some industry-driven professional certifications can be used to facilitate this process. Programs of this kind may award credit for prior learning, allowing incumbent workers to achieve credentials by demonstrating knowledge and skills developed on-the-job.

### **Asynchronous Learning**

Provide education and training for students and incumbent workers at times and locations convenient to students and employers, rather than instructors or institutions. This may include evenings or weekends, blended or "hybrid" delivery models, and delivery at off-campus locations.

### **Problem-Based Learning**

Problem-based learning provides students with opportunities to solve real life problems, often in environments that replicate the workplace (e.g. design within constraints, working on multidisciplinary teams, etc.). Industry engagement with educators to provide real world problem examples and guidance on project constraints enhances student experience.

### **Work-Based and Experiential Learning**

Incorporate opportunities for "learning-by-doing", including internships, co-op work experience, fieldwork, and studio teaching by practice that add a dimension of professional practice to the student's academic studies.