

Experiential Learning Programs for ITS/Signal Maintenance Technicians

In addition to academic and technical preparedness, on-the-job training and other work-based learning experiences are critical components of worker readiness programs. These national programs provide co-curricular value to student career preparedness:

US DOT Intelligent Transportation Systems Joint Program Office (ITSJPO)

The ITSJPO offers numerous resources to extend learning outside of traditional classroom boundaries. The ITSJPO website features free webinars and training programs, information on industry hot topics, links to exciting research innovations and its pilot programs, and a free e-newsletter that keeps subscribers informed of important news and upcoming events. The ITS Professional Capacity Building Program features additional resources and training designed for students, including a series of ITS case studies.

TransportationTech

TransportationTech.com provides online, on-demand educational curricula for Intelligent Transportation Systems and Connected Vehicle technology. Transportation Tech content is designed and developed to encourage students to choose careers in ITS as well as train current ITS and CV technicians in the field. The site features a free ITS Boot Camp for students, as well as an informative online magazine (The Accelerator) focused on innovations in transportation technology.

National Highway Institute (NHI)

The NHI provides training and education for highway professionals, including offering several free or low cost online ITS training courses. The site also archives completion information for a users' courses, and creates an unofficial transcript of training completed.

Intelligent Transportation Society of America (ITS America)

ITS America is the leading ITS professional organization and is dedicated to advancing research and deployment of intelligent transportation technologies. ITS America offers memberships to students through student chapters at institutes of higher education, and provides focused learning and networking opportunities for students considering ITS careers through webinars, white papers, articles on specific technologies, and meetings at the state, national, and international levels.

State Departments of Transportation

DOTs offer internships for community college, university and graduate students. Internships or co-ops are available in a number of occupations relating to ITS technicians. Some DOTs also employ college students to assist in the completion of seasonal work related to highway maintenance, crash system input and analysis, maintenance at roadside rest facilities, and flagging. Some training is provided on the job. DOTs offer rotational programs to entry-level engineers so that they experience different business areas within the organization before

selecting a permanent assignment.

National Operations Center of Excellence (NOCoe)

The National Operations Center of Excellence's site has a multitude of resources for students and professionals in traffic operations. Resources include a searchable Knowledge Center with publications, tools, case studies, on-demand learning, and research. Students can also get involved in experiential learning through the annual Transportation Technology Tournament and TRB ePortfolio Contest.

Summer Transportation Internship Program for Diverse Groups (STIPDG)

The U.S. Department of Transportation (U.S. DOT), Federal Highway Administration's (FHWA) Office of Innovative Program Delivery offers internships to college students of various backgrounds. The objective of the STIPDG is to provide college/university students with hands-on experience and on-the-job training while working on current transportation-related topics and issues. The STIPDG is open to all qualified applicants but is designed to provide qualified women, persons with disabilities, and members of diverse groups with summer opportunities in transportation where these groups have been under-represented.

International Municipal Signal Association (IMSA)

IMSA is dedicated to providing quality certification programs for the safe installation, operation and maintenance of public safety systems; delivering value for members by providing the latest information and education in the industry. Members get special access to not only the IMSA Journal, but also discounted certification opportunities, discounted annual conference prices, the career center, and more. IMSA offers student memberships that provide access to discounted education and certification opportunities, a subscription to the IMSA Journal, and online tracking of continuing education credits.

Association for Unmanned Vehicle Systems International (AUVSI)

The Association for Unmanned Vehicle Systems International is the world's largest nonprofit organization dedicated to the advancement of unmanned systems and robotics. AUVSI members work in the defense, civil and commercial markets. AUVSI members gain access to the world's largest unmanned systems community. From exclusive networking events to exciting business development opportunities. Membership is available for both professionals and students to take advantage of numerous opportunities to get connected, get informed and get involved all year long.

Innovative Learning Strategies for ITS/Traffic Signal Maintenance Technicians

To establish curricular lessons and activities that incorporate the latest strategies for increasing student learning effectiveness and retention, a review of practices deployed by workforce and CTE practitioners reveals several approaches that would benefit students within ITS/signal maintenance programs of study. These learning strategies include:

Competency-Based Curriculum

Curriculum that meets academic and quality standards that is designed and organized by competencies required for jobs and cross-walked with industry skill standards and certifications, where applicable. Job profiling and the use of "SMEs" should be considered to meet the competency needs of business.

Modularized Curriculum

Structure and sequence curriculum in modules tied to jobs with multiple entry/exit points, with multiple levels of industry recognized credentials built into the sequenced pathway.

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

Instruction that helps students who benefit from hands-on learning foster team-building skills while solving real-life problems.

Experiential Learning

Incorporate opportunities for "learning-by-doing", including internships, co-op work experience, simulations, and team class projects that are assignments from local employers.

Context-Based Learning

By interpreting new information in the context or place of where and when it occurs and relating it to what we already know, we come to understand its relevance and meaning. To design effective strategies for learning requires an understanding of how context shapes learning.

Individual Learning

Learners are different and innovative learning environments reflect the various experiences and prior knowledge that each student brings to class. It's important that practices and processes help teachers engage each student where they are.

Online "Micro-Learning"

This approach provides short, content-rich exploration of career opportunities and training modules that lead to a new form of stackable credentialing through badges and other forms of recognition, typically subject to the agency hosting the content.

Industry Academies

Employers develop their own internal programs that are offered to candidates immediately following high school graduation. No formal post-secondary education or training is required for these students to enter a job, and candidates who successfully complete these employer-based programs are immediately hired.