ITS PCB Program Resources (8:45-10:00 am)

- ITS PCB Program Background
- ITS Case Studies
- T3 Webinars
- T3e Webinars
- ITS Curriculum Webpage
- ITS Standards and Transit Standards
- ITS ePrimer
- CITE Courses & Products
- NHI Courses

The USDOT Offers Free ITS Training

The USDOT's Professional Capacity Building (PCB) Program:

- Established by congressional legislation to build and sustain a capable and technically proficient ITS workforce
- Provides comprehensive, accessible, flexible ITS learning for the transportation industry
- Focused on transportation professionals - develop their knowledge, skills, and abilities while furthering career paths

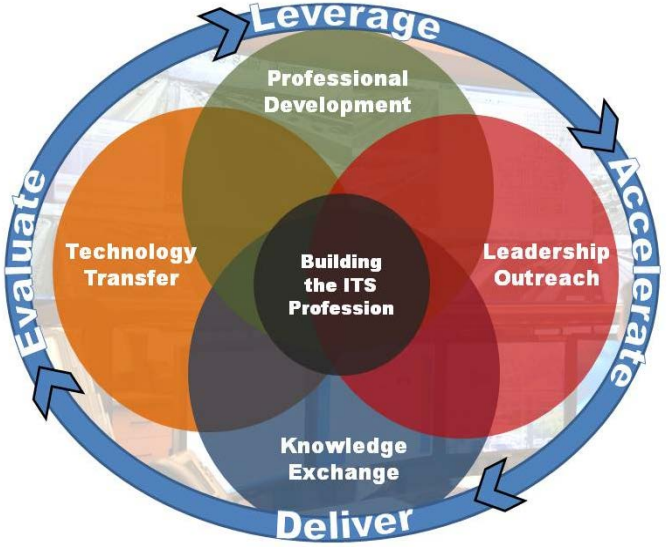
- ✓ **Increase your knowledge of ITS technologies**
- ✓ **Excel at your career**
- ✓ **Advance the mission of your organization**

Source: ThinkStock

Achieve your ITS learning goals. Visit: www.pcb.its.dot.gov/training.aspx

ITS PCB Program Background

- Part of U.S. DOT ITS Joint Program Office (ITS JPO)
- Authorized by Congress in 1996 to develop the workforce competencies to transform the transportation infrastructure through ITS
- Reauthorized by the 2012 Moving Ahead for Progress in the 21st Century (MAP-21) & reaffirmed by the 2016 Fixing America's Surface Transportation Act (FAST Act)



- In 2010 embarked on new strategic direction:
  - Develop new ITS content and fill gaps in existing content.
  - Build partnerships to direct learning to the right audiences.
  - Move to cost-effective, engaging delivery methods.
- Ever increasing effort to expand coordination with wider (non-Federal) partners: Academia & Professional Associations

ITS PCB Partners

University of Maryland

World Road Association Mondiale de la Route

CITE

FUTURE PARTNERS

- SAE International
- IEEE
- NACo
- AMPO
- MARAD
- International Road Federation
- Transportation Workforce Centers
- USDOT FMCSA

Office of the Assistant Secretary for Research and Technology
University Transportation Centers

ite
Institute of Transportation Engineers

U.S. Department of Transportation
Federal Highway Administration

FTA
Federal Transit Administration

IMSA
Your Partner in PUBLIC SAFETY

TSI
Transportation Safety Institute
National Traffic Safety Division

NHI
NATIONAL HIGHWAY INSTITUTE
Training Solutions for Transportation Excellence

American Association of State Highway and Transportation Officials
AASHTO
The Voice of Transportation

APTA
American Public Transportation Association

Rutgers
Edward J. Bloustein School of Planning and Public Policy

NTI
National Transit Institute

NOCoE
National Operations Center of Excellence
SHRP2 SOLUTIONS

ITS AMERICA

ITS PCB Program Content

Targeted delivery, through strategic use of partners:

Tier 1: Emerging Technologies	**Tier 2:** Current Research	**Tier 3:** Existing Technologies	**Tier 4:** Foundational/Cross-Cutting Topics

• Connected Vehicle:
  • Vehicle to Vehicle (V2V)
  • Vehicle to Infrastructure (V2I)
  • DSRC (for Transportation
  • Technology
  • Policy
• Automated Vehicles
• Smart Cities
• MOD/ATTRI
	• Short-term Intermodal Research
	• Research Initiatives
	  • ICM
	  • Smart Roadside
	  • AERIS
		• Adaptive Signal Control
		• Arterial Management
		• Freeway Management
		• Crash Prevention & Safety
		• Road Weather Management
		• Driver Assistance
		• And more…
			• Standards
			• ITS Architecture
			• CVRIA
			• Systems Engineering
			• Telecommunications
			• DSRC
			• Data Collection & Mgmt.
			• Security
			• Data Communications
			• Procurement

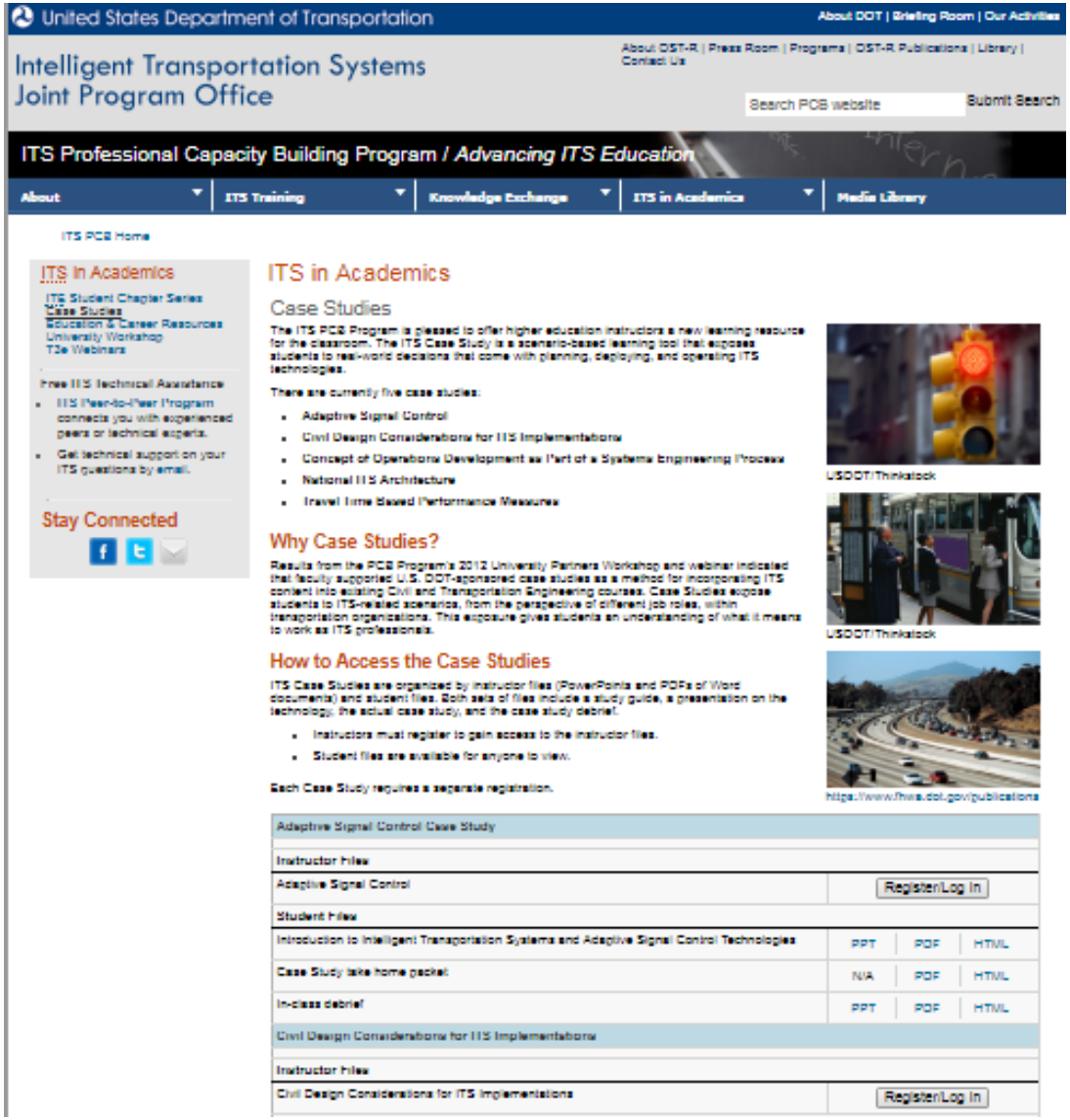
• T3 Webinars • CITE Courses • ITS America State Chapter Workshops • Academic Case Studies	• T3 Webinars • P2P • ePrimer • CITE Courses	• ITS Video Library • ITS Knowledge Resources	• CITE Courses • Standards Modules • NHI Courses

Partnering with Higher Education

The USDOT looks to colleges and universities as partners in educating the next generation of leaders in Connected Vehicles

Priority Audiences Over the Next 1 to 3 Years	Anticipated Audiences Over the Next 3 to 5 Years
• Federal Agencies • Transportation Executives and General Managers • Transportation Practitioners (including Engineers and Planners) • Manufacturing/Industry • IT/Communications • Data Aggregators • Automobile Manufacturers	• Insurance and Privacy Audiences • Public Safety/Law Enforcement • Freight/Commercial Vehicle Owners and Operators • Media • Advocacy Organizations

ITS Case Studies



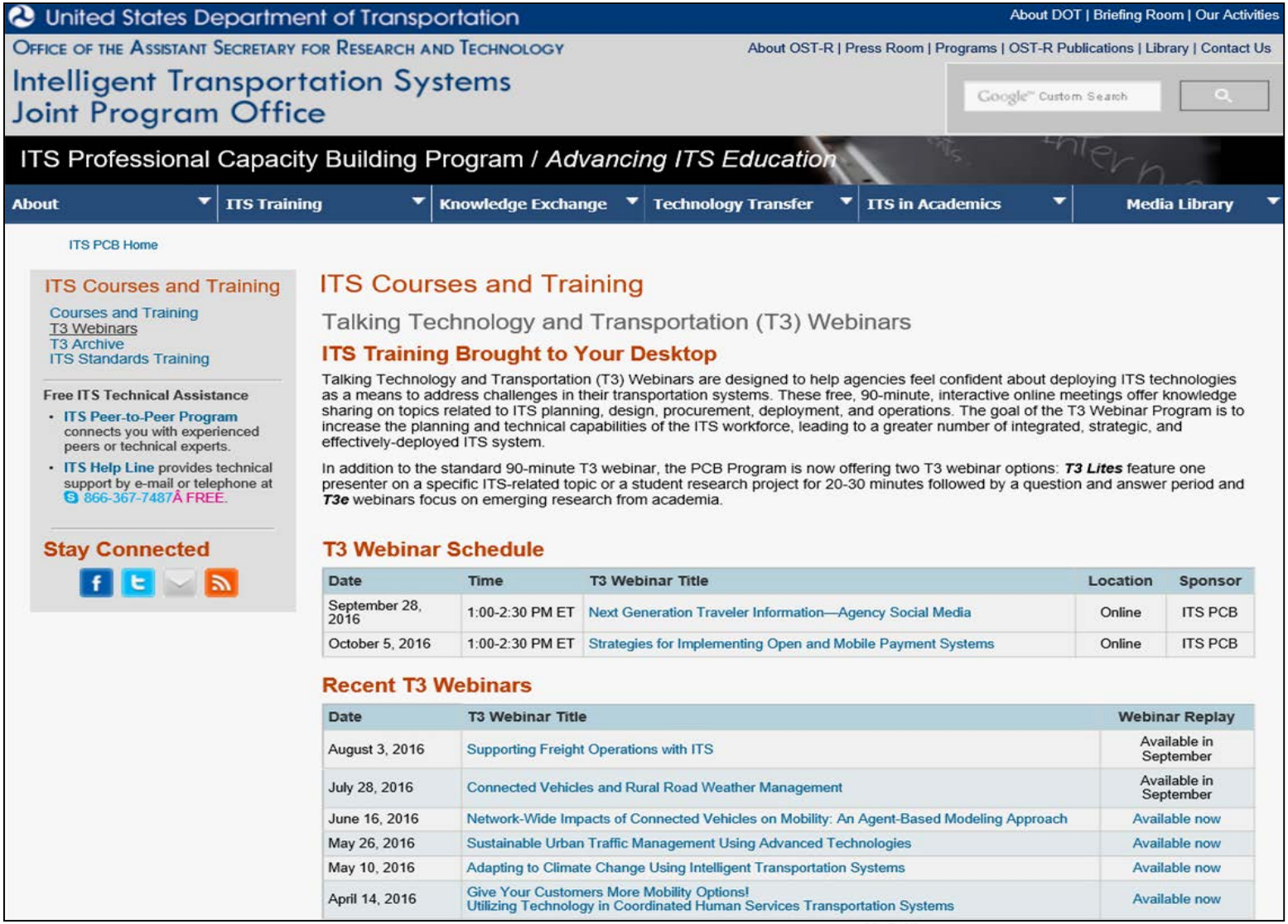
- Case Study developed from input from University Workshops
- 6 Case Studies
  - Adaptive Signal Control
  - National ITS Architecture
  - ITS Concept of Operations
  - Civil Design Considerations for ITS Implementation
  - Travel Time Based Performance Measures
  - Transit Service (online soon)
- Case Studies can be found online at https://www.pcb.its.dot.gov/casestudies/default.aspx

ITS Case Studies – 2016 Pilots

- *Civil Design Considerations for ITS Implementation*
  - Gonzaga University (Undergraduate)
  - Florida International University (Undergraduate & Graduate)

- *ITS Concept of Operations* at University of Massachusetts (Undergraduate)
- *Transit Service and ITS* by TSI at Oklahoma University

Talking Technology and Transportation (T3) Webinars



United States Department of Transportation
About DOT | Briefing Room | Our Activities
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Intelligent Transportation Systems Joint Program Office
Google™ Custom Search
ITS Professional Capacity Building Program / *Advancing ITS Education*
About | ITS Training | Knowledge Exchange | Technology Transfer | ITS in Academics | Media Library
ITS PCB Home

ITS Courses and Training
Courses and Training
T3 Webinars
T3 Archive
ITS Standards Training

Free ITS Technical Assistance
- **ITS Peer-to-Peer Program** connects you with experienced peers or technical experts.
- **ITS Help Line** provides technical support by e-mail or telephone at 866-367-7487Â FREE.

Stay Connected

ITS Courses and Training

Talking Technology and Transportation (T3) Webinars

ITS Training Brought to Your Desktop

Talking Technology and Transportation (T3) Webinars are designed to help agencies feel confident about deploying ITS technologies as a means to address challenges in their transportation systems. These free, 90-minute, interactive online meetings offer knowledge sharing on topics related to ITS planning, design, procurement, deployment, and operations. The goal of the T3 Webinar Program is to increase the planning and technical capabilities of the ITS workforce, leading to a greater number of integrated, strategic, and effectively-deployed ITS system.

In addition to the standard 90-minute T3 webinar, the PCB Program is now offering two T3 webinar options: ***T3 Lites*** feature one presenter on a specific ITS-related topic or a student research project for 20-30 minutes followed by a question and answer period and ***T3e*** webinars focus on emerging research from academia.

T3 Webinar Schedule

Date	Time	T3 Webinar Title	Location	Sponsor
September 28, 2016	1:00-2:30 PM ET	Next Generation Traveler Information—Agency Social Media	Online	ITS PCB
October 5, 2016	1:00-2:30 PM ET	Strategies for Implementing Open and Mobile Payment Systems	Online	ITS PCB

Recent T3 Webinars

Date	T3 Webinar Title	Webinar Replay
August 3, 2016	Supporting Freight Operations with ITS	Available in September
July 28, 2016	Connected Vehicles and Rural Road Weather Management	Available in September
June 16, 2016	Network-Wide Impacts of Connected Vehicles on Mobility: An Agent-Based Modeling Approach	Available now
May 26, 2016	Sustainable Urban Traffic Management Using Advanced Technologies	Available now
May 10, 2016	Adapting to Climate Change Using Intelligent Transportation Systems	Available now
April 14, 2016	Give Your Customers More Mobility Options! Utilizing Technology in Coordinated Human Services Transportation Systems	Available now

(https://www.pcb.its.dot.gov/t3_webinars.aspx)

T3 Webinars and Archive

- Online, 90 minute, interactive seminars
- FREE by ITS PCB Program
- Past webinars available through T3 archive (3-4 weeks after live event)
- Professional Development Hours (PDHs) eligible
- Invite T3 Webinars proposal:
  - Highlight an ITS related case study, problem solving challenge, or topic
- To join announcement list:
  - Send email to T3@dot.gov with the subject line "Add to Email List."

Recent T3s (available now in archive):

- Traffic Incident Management - What's New?
- Variable Speed Limits Systems: Are They for Everyone?

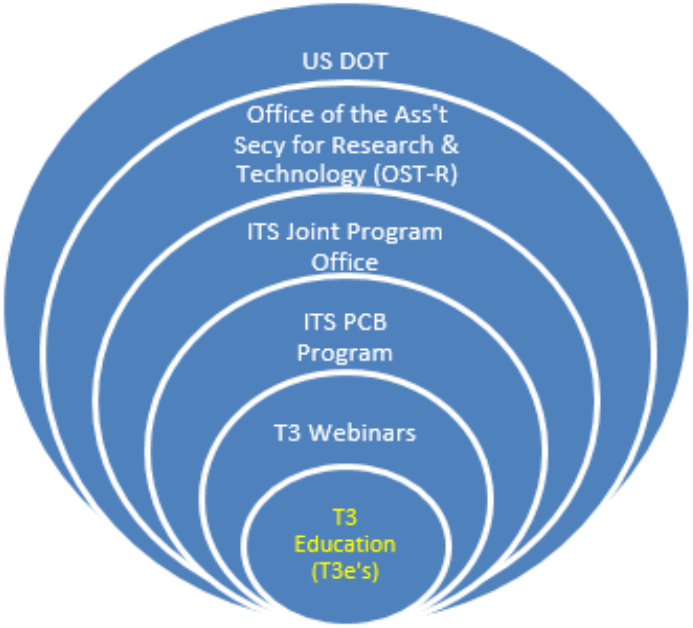
Register at: https://www.pcb.its.dot.gov

T3 Webinar Series:

- Automated Vehicle Awareness Series (2015-2017)
- Open Payment Series (2016-2017)
- Mobility On Demand Series (2017-2019)
- Smart Cities Awareness Series (2017-2020)

Talking Technology and Transportation in Education (T3e) Webinars

Purpose



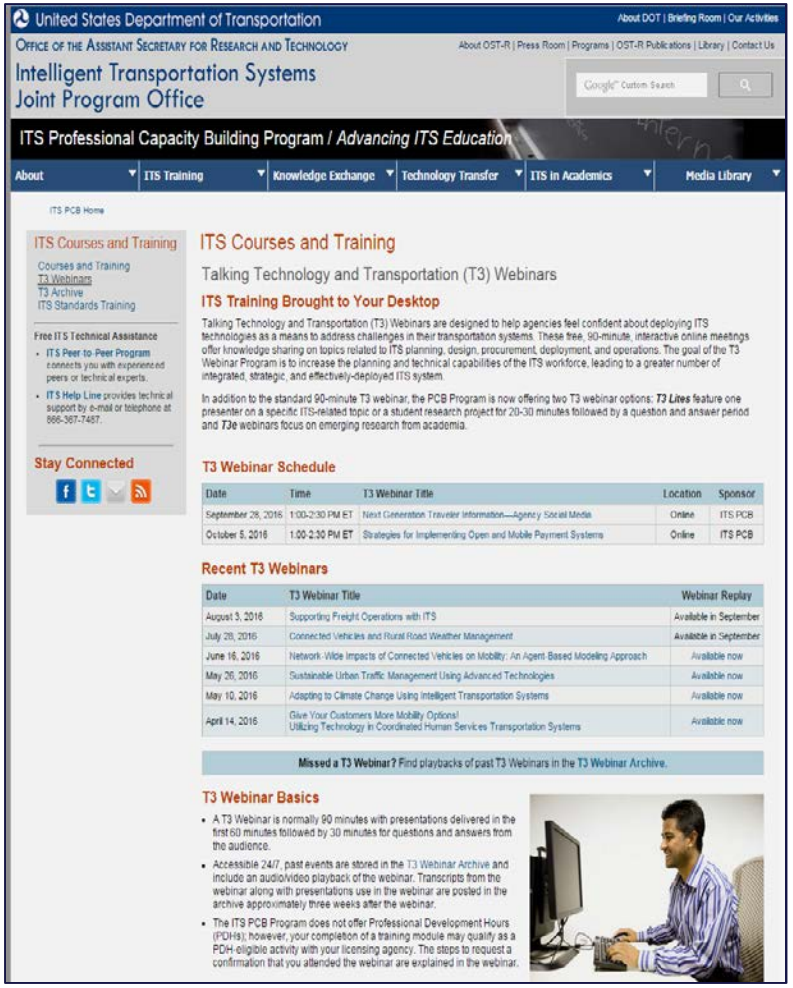
T3e's are envisioned as a forum to bridge academic research with the larger transportation community. The goals are multifaceted and aim to:

- Allow transportation professionals to learn about emerging trends and interact with academia.
- Provide students an opportunity to present their work to the professional community and perfect their presentation skills.
- Offer an opportunity for academic institutions to showcase their programs and labs to a national audience.
- Provide those in all sectors with an opportunity to network and find synergy, potentially forming partnerships for deployment, operations, or new research topics.

T3e (education) Webinars

Format

- Focus on a specific ITS topic, theme, or subject area
- Up to 60-minutes in length--the first 25-40 minutes is devoted to presentations on relevant research, while the remaining time is set aside for an interactive question and answer discussion.
- Presenters may be university students, staff members, researchers, or professors but usually includes multiple presenters.
- T3e's present a unique forum for exchange between academia, government, and industry.



https://www.pcb.its.dot.gov/t3_webinars.aspx?selectedTab=2

T3e (education) Webinars

Process

- Because the T3e's are focused on academic research, unlike other T3 webinars, T3e presenters come exclusively from academia.
- In contrast to traditional T3's which are hosted by a federal DOT staff member, a professor will serve as the host on a T3e webinar.
- The T3e Webinar content is developed by the professor and presenters, who determine the topic(s) and learning objectives.
- All T3e's are produced by the Volpe Center T3 team who works with professors and students throughout.
- All T3e webinars are archived and available for viewing on the T3 website which presenters and can access and share freely.

Spaces are available on the calendar for 2018!

Please speak to Jaime if you are interested.

T3e (education) Webinars

Sample of Past T3e's

- **Network-Wide Impacts of Connected Vehicles on Mobility: An Agent-Based Modeling Approach |** Oregon State University

- **Connected Vehicles and Rural Road Weather Management** | Univ of Wyoming

- **Solar-powered Automated Transit Networks: The Future of Sustainable Urban Transportation** | San Jose State University

Upcoming T3e's

- **Analysis of Freight Crashes along the I-10 Corridor: Potential ITS Countermeasures** | Northern Arizona University – September 26, 2017

- **Title** | University of Tennessee, October 11, 2017

ITS Curriculum Webpage

Purpose

To publish information about ITS courses in order to provide:

- Prospective graduate & undergraduate students interested in ITS with a “one-stop-shop” resource with information on university ITS programs & courses; and
- Educators with a platform to feature their ITS courses and an opportunity to informally network with other educators, exchanging lesson plans and best practices.

You can help develop this into a meaningful resource by providing us with:

- A list of your ITS courses, along with one or two web links to course descriptions/information
- A two-to-three sentence description that sums up ITS-related initiatives at your institution
- A university point of contact, and
- A university logo that we can publish on our website.

ITS Curriculum Webpage

Found at:
www.pcb.its.dot.gov

Within ITS in Academics:
https://www.pcb.its.dot.gov/academics.aspx

The webpage will ultimately feature a comprehensive list of educational institutions that offer coursework in ITS, connected vehicles, automated vehicles, smart cities, or other innovative transportation research, and provide links to curriculum information and ITS-centric programs.

ITS Curriculum Webpage

Texas			
+ Texas A&M, College Station	TX		
+ Texas Southern University, Houston	TX	Graduate	MS Transportation Planning and Management
- University of Texas, Dallas or Austin	TX	Graduate	Thematic Area of Transportation Engineering

Department: Civil Engineering

Program: Thematic Area of Transportation Engineering

Description: The University's proximity to the headquarters of governmental transportation agencies provides ready access to the facilities and records of these organizations by graduate students, in planning, behavioral modeling and demand prediction, geometric and structural design, large-scale infrastructure systems analysis and optimal resource allocations, policy making, and operation of streets, highways, and transit and non-motorized transportation systems. The Center for Transportation Research administers an extensive cooperative research program with the Texas Department of Transportation, the United States Department of Transportation, as well as a spectrum of sponsored projects with other agencies, including the Transportation Research Board, and the National Science Foundation. Equipment for specialized and routine testing of materials used for constructing and maintaining transportation facilities is available. The bituminous materials laboratory includes state-of-the-art asphalt binder and asphalt concrete testing equipment, an environmental control chamber, and mix preparation and aggregate handling facilities. Facilities are provided for studying traffic operations, including traffic volume counters, speed meters, motor-driven movie cameras, video cameras and recorders, projectors, portable delay recorders, and other special measuring and recording equipment. The Transportation Infrastructure and Information Systems Laboratory provides the capability to conduct research in analysis and simulation of large-scale infrastructure systems. The Transportation Equilibrium, Simulation, and Optimized Networks Laboratory allows research on large-scale complex networks with a focus on transportation systems. In addition, the University's high-performance computers and hardware and software in the department's Learning Resources Center are available to support research in transportation networks, infrastructure systems, land uses, and traffic operations.

Links: http://catalog.utexas.edu/graduate/fields-of-study/engineering/civil-engineering/graduate-courses/

Research Center: Center for Transportation Research
ITS Courses: CE 197 – Special Topics in Civil Engineering: Topic 22 Intelligent Transportation Systems. Introduction to Intelligent Transportation Systems (ITS) concepts, evolution, and current initiatives. Program evolution from Mobility 2000, through IVHS and strategic planning activities by the Department of Transportation and ITS America, to current operational tests and deployment projects.
CE 297 – Special Topics in Civil Engineering: Topic 22 Intelligent Transportation Systems. Introduction to Intelligent Transportation Systems (ITS) concepts, evolution, and current initiatives. Program evolution from Mobility 2000, through IVHS and strategic planning activities by the Department of Transportation and ITS America, to current operational tests and deployment projects.
CE 392 – Intelligent Infrastructure Systems: Concepts, frameworks, and models of intelligent infrastructure systems, with emphasis on the application of emerging technologies and advanced modeling techniques. Civil Engineering 392N (Topic 3) and 397 (Topic 37: Intelligent Infrastructure Systems) may not both be counted.
CE 397 – Special Topics in Civil Engineering: Topic 22 Intelligent Transportation Systems. Introduction to Intelligent Transportation Systems (ITS) concepts, evolution, and current initiatives. Program evolution from Mobility 2000, through IVHS and strategic planning activities by the Department of Transportation and ITS America, to current operational tests and deployment projects.

Contact: Dr. Chandra R. Bhat, Director, Center for Transportation Research, Director, Center for Transportation Research, Adnan Abou-Ayyash Centennial Professor in Transportation Engineering, University Distinguished Teaching Professor
Email: bhat@mail.utexas.edu
Phone: 512-471-4535

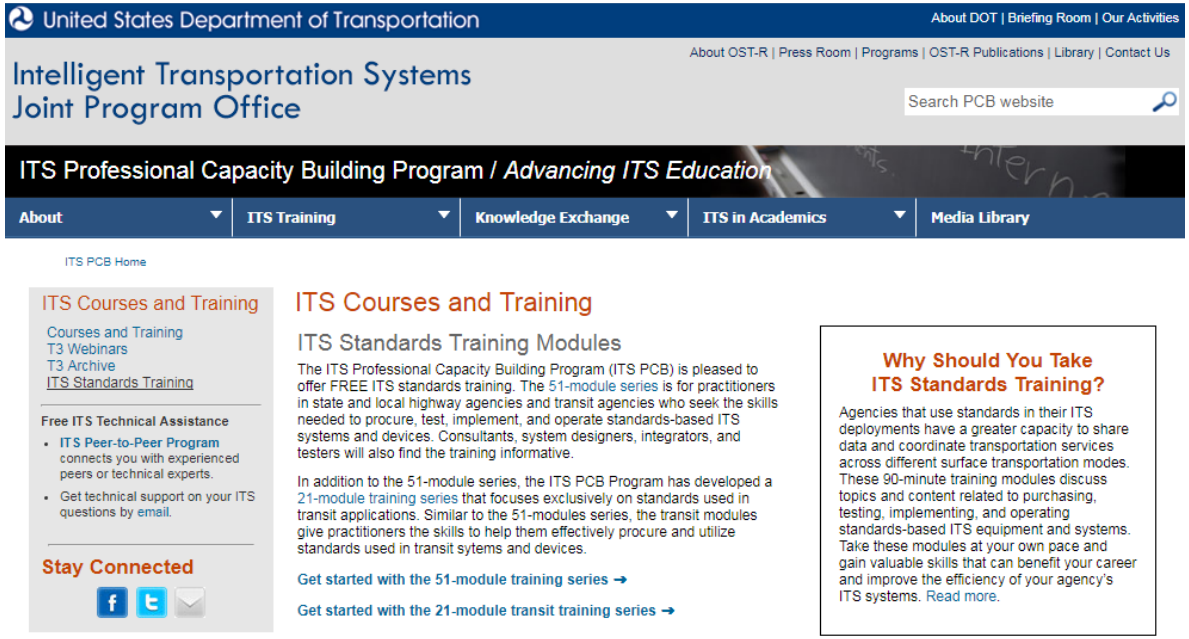
+ University of Texas, Arlington, Arlington	TX	Graduate	

Organized by state, clicking on a school listed expands to show details about the program that offers ITS coursework.

This is envisioned as a resource for all levels of higher education, and aims to incorporate community colleges, tech, and trade schools.

ITS Standards / ITS Transit Standards

- FREE, 1.5-2 hour modules that teach how to procure, implement, and operate ITS standards-based devices
- First posted 2013
- 56 general ITS Standards Training Modules online
- 21 ITS Transit Standards Training online
- New as of this year
  - 8 ITS Standards
  - 10 ITS Transit Standards
  - 8 ITS Standards updated



(https://www.pcb.its.dot.gov/stds_training.aspx)

General ITS Standards Training Modules

#	Module Title
1	Using ITS Standards: An Overview
2	Introduction to Acquiring Standards-based ITS Systems
3	Introduction to User Needs Identification
4	Introduction to ITS Standards Requirements Development
5	Introduction to ITS Standards Testing
6	Details on Acquiring Standards-based ITS Systems
7	Identifying and Writing User Needs When ITS Standards Do Not Have SEP Content
8	Writing Requirements When ITS Standards Do Not Have SEP Content
9	How to Write a Test Plan
10	Understanding User Needs for DMS Systems Based on NTCIP 1203 Standard v03
11	Understanding User Needs for ESS Systems Based on NTCIP 1204 v03 Standard
12	Understanding User Needs for Traffic Management Systems Based on TMDD v03 Standard
13	Overview of Test Design Specifications, Test Cases, and Test Procedures
14	Specifying Requirements for DMS Systems Based on NTCIP 1203 Standard v03
15	Specifying Requirements for ESS Systems Based on NTCIP 1204 v04 Standard
16	Specifying Requirements for Traffic Management Systems Based on TMDD v03 Standard
17	Applying Your Test Plan to the NTCIP 1203 v03 DMS Standard
18	Applying Your Test Plan to the NTCIP 1204 v03 ESS Standard
19	Introduction to the Communications Protocols and Their Uses in ITS Applications
22	Understanding User Needs for Transportation Sensor Systems (TSS) Based on NTCIP 1209 Standard
23	Specifying Requirements for Transportation Sensor Systems (TSS) Based on NTCIP 1209 Standard
24	Understanding User Needs for Field Management Stations - Part 1. Object Definitions for Signal System Masters Based on NTCIP 1210 Standard
25	Specifying Requirements for Field Management Stations - Part 1. Object Definitions for Signal System Masters (SSM) Based on NTCIP 1210 Standard
26	Understanding User Needs for Electrical and Lighting Management Systems Based on NTCIP 1213 ELMS Standard v03
27	Specifying Requirements for Electrical and Lighting Management Systems based on NTCIP 1213 ELMS Standard v03
28	Building an ITS Infrastructure Based on the Advanced Transportation Controller (ATC) 5201 Standard - Part 1 of 2
29	Building an ITS Infrastructure Based on the Advanced Transportation Controller (ATC) 5201 Standard - Part 2 of 2

#	Module Title
30	Applying Your Test Plan to the TMDD Standard
31	Understanding User Needs for Actuated Traffic Signal Controllers (ASC) Based on NTCIP 1202 Standard
32	Understanding Requirements for Actuated Traffic Signal Controllers (ASC) Based on NTCIP 1202 Standard - Part 1 of 2
33	Understanding User Needs for CCTV Systems Based on NTCIP 1205 Standard
34	Understanding Requirements for CCTV Systems Based on NTCIP 1205 Standard
35	Applying Your Test Plan to the NTCIP 1202 ASC Standard
36	Applying Your Test Plan to NTCIP 1205 Standard
37	Using the ATC 5401 Application Programming Interface (API) Standard to Leverage ITS Infrastructures
38	Vehicle-to-Vehicle (V2V) ITS Standards for Project Managers
39	Understanding User Needs for Advanced Transportation Controllers Based on ATC 5201 Standard v06
40	Understanding User Needs for Ramp Meter Control (RMC) Units Based on NTCIP 1207 Standard v02
41	How to Develop Test Cases for an ITS Standards-based Test Plan - Part 1 of 2
42	Understanding Requirements for Actuated Traffic Signal Controllers (ASC) Based on NTCIP 1202 Standard - Part 2 of 2
43	Vehicle-to-Infrastructure (V2I) ITS Standards for Project Managers
44	Understanding Requirements for Advanced Transportation Controllers Based on ATC 5201 Standard v06
45	Understanding Requirements for Ramp Meter Control (RMC) Units Based on NTCIP 1207 Standard v02
46	How to Develop Test Cases for an ITS Standards-based Test Plan - Part 2 of 2
47	How to Develop Test Procedures for ITS Standards-based Test Plan - Part 1 of 2
48	How to Develop Test Procedures for ITS Standards-based Test Plan - Part 2 of 2
49	Applying Your Test Plan to a Transportation Sensor System (TSS) Based on the NTCIP 1209 Standard v02
50	Applying Your Test Plan to Ramp Meter Control (RMC) Units Based on the NTCIP 1207 Standard v02
51	Using the ISO TS 19091 Standard to Implement V2I Intersection Applications Introduction
52	Applying Your Test Plan to the Electrical and Lighting Management Systems based on NTCIP 1213 ELMS Standard v03
53	Center-to-Center (C2C) Reference Implementation (RI) Introduction

STANDARDS ITS TRAINING

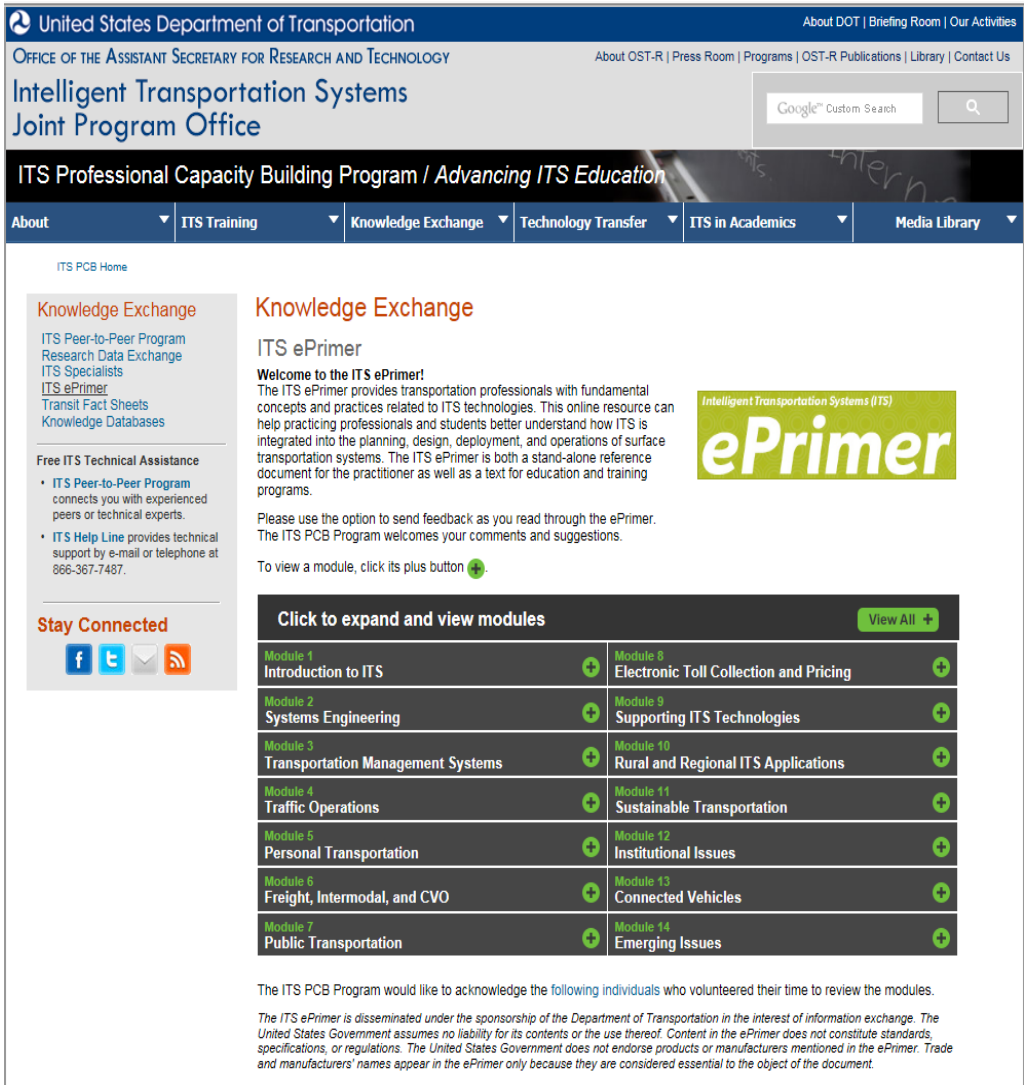
ITS Transit Standards Training Modules

Module #	Module Title
1	Introduction to ITS Transit Standards
2	Transit Management Standards - Part 1 of 2
3	Transit Communications Interface Profiles (TCIP) - Part 1 of 2: Introduction to the Standard and Transit Architectures
4	Transit Communications Interface Profiles (TCIP) - Part 2 of 2: Structure and Elements of TCIP—Accessing TCIP via TIRCE and TCIP Tools
5	Transit Management Standards - Part 2 of 2
6	Traveler Information - Part 1 of 2
7	Traveler Information - Part 2 of 2
8	Arterial Management and Transit Signal Priority: Understanding User Needs for Signal Control Priority (SCP) Based on NTCIP 1211 Standard - Part 1 of 2
9	Arterial Management and Transit Signal Priority: Specifying Requirements for Signal Control Priority (SCP) Based on NTCIP 1211 Standard - Part 2 of 2
10	Electronic Fare Payment Systems
11	Transit and the Connected Vehicle Environment/Emerging Technologies, Applications, and Future Platforms
12	Electronic Fare Payment/Advanced Payment Systems: Open Payments Acceptance
13	An Introduction to Integrated Corridor Management (ICM)
14 - Part 1	Applying General Transit Feed Specifications (GTFS) to Your Agency - Part 1 of 2
14 - Part 2	Applying General Transit Feed Specifications (GTFS) to Your Agency - Part 2 of 2
15	Emerging Evacuation Standards of Communication/Incident Management (ISO 19083)
16	Introduction to Transit Enterprise Architecture and Its Benefits for Transit
17	Accessible Transportation Technologies Research Initiative (ATTRI)
18	Transit and the Connected/Automated Vehicle Environment/Emerging Technologies, Applications, and Future Platforms
19	On-Board Transit Management Systems
20	Application of Arterial Management/Transit Signal Priority Standards

STANDARDS ITS TRAINING

ITS ePrimer

- Collaboration among ITE, APTA and ITS America
- 14 online modules, with multi-medial examples
- Key elements include:
  - Technical content
  - Navigation to individual modules
  - Links to video and interactive material
  - Training and resource links
  - Feedback links
- Posted 2014
- Updates 2018



Intelligent Transportation Systems (ITS) ePrimer

ITS ePrimer

Module 1 Introduction to ITS	Module 8 Electronic Toll Collection and Pricing
Module 2 Systems Engineering 2018 Update	Module 9 Supporting ITS Technologies 2018 Update
Module 3 Transportation Management Systems 2018 Update	Module 10 Rural and Regional ITS Applications 2018 Update
Module 4 Traffic Operations 2018 Update	Module 11 Sustainable Transportation 2018 Update
Module 5 Personal Transportation	Module 12 Institutional Issues 2018 Update
Module 6 Freight, Intermodal, and CVO	Module 13 Connected Vehicles
Module 7 Public Transportation	Module 14 Emerging Issues

(https://www.pcb.its.dot.gov/eprimer.aspx)

Intelligent Transportation Systems (ITS) ePrimer

What is CITE?

- Consortium for ITS Training and Education
- A unique consortium of over 100 university and industry partners
- Provide interactive online advanced transportation courses
- Types of offerings
  - Certificate Programs
  - Independent Study Courses
  - Blended Courses
  - Full Semester Courses

CITE'S AUDIENCE

- College/University Students
  - Courses taken from University Partners
  - College credit given for completion through partners
- Industry professionals
  - Courses taken directly through CITE
  - CEU's given for completion

NEWEST COURSES AVAILABLE

- Archived Data for Planning, Operations and Safety
- Connected Vehicles 101
- Cyber Security
- Performance Measurement
  - Intro to Operations Performance Measures and Management
  - Nuts and Bolts of Operations Performance Measurement
  - Operations Performance Management: Real-time Operations to Long Term Planning
- Travel Time (Vehicle Probe Data)

National Highway Institute (NHI) Courses

Background

- Established by Congress in 1970
- Training and education arm of the Federal Highway Administration (FHWA)
- Hundreds of trainings in more than 18 transportation industry-related program areas

Course Offerings

- Instructor-led training from short, 1-day courses to multi-week sessions
- Web-Conference trainings—live, online learning taught by remote instructors
- Web-based trainings that are available online 24/7 (over 160 in catalog)

NATIONAL HIGHWAY INSTITUTE

National Highway Institute (NHI) Courses

Course Topic Areas

- Asset Management
- Communications
- Construction and Maintenance
- Freight and Transportation Logistics
- Geotechnical
- Highway Safety
- Hydraulics
- Intelligent Transportation Systems
- Structures
- Transportation Performance Management
- Transportation Planning

Search courses at:
https://www.nhi.fhwa.dot.gov/home.aspx

NATIONAL HIGHWAY INSTITUTE