

**Consortium for ITS Training and Education (CITE)  
Submission for ITE TEC Award for Innovation in Education**

**What is CITE?**

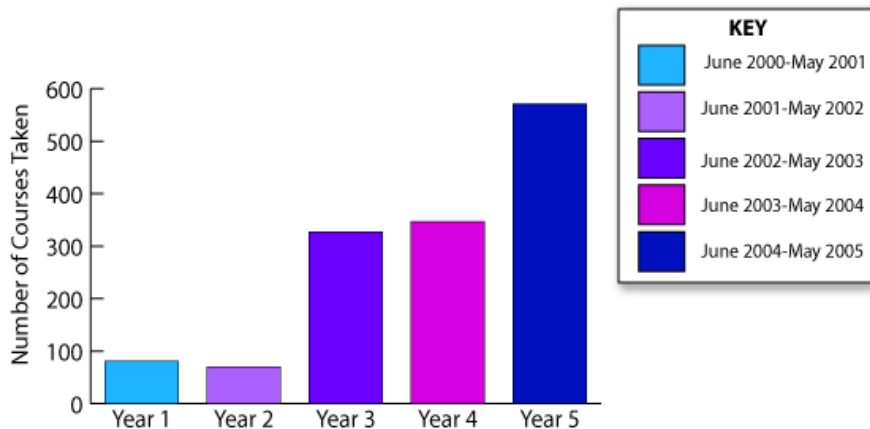
The Consortium for ITS Training and Education (CITE) was formed in late 1998 as a result of the need to provide transportation engineering students and professionals with an integrated curriculum covering the transportation engineering (a branch of civil engineering), computer science, systems engineering, and business knowledge necessary to work in today's advanced transportation field. CITE is a unique organization of over 100 universities (78 from within the US and 27 international) and industry associations focused on providing comprehensive advanced transportation training and education.

CITE courses were all developed in an interactive web-based format and are available 24 hours a day, seven days a week. The courses provide student interactivity through a stimulating mix of participatory activities, such as self-study quizzes, exercises or problems, and drag-and-drop pages. These activities help support and reinforce the text-based information and keep students engaged and active in the learning process.

CITE's audience includes both graduate students and industry professionals. Graduate level for-credit courses developed by CITE are offered through CITE university partners. Training courses for continuing education units are available directly through CITE for an enrollment fee.

In June 2000, CITE was the first organization to provide the transportation community with web-based ITS courses. These courses included one full semester course (Fundamentals of ITS and Traffic Management) and eleven individual short courses (the 11 modules that made up the full semester course). Now, five and a half years later, CITE offers 28 individual short courses, two full semester courses, five courses in Spanish, and three certificate programs made up of six courses each. CITE's curriculum includes courses in the areas of information technology, traffic engineering, project management, systems engineering and ITS technology. CITE has also developed a "Careers in ITS" course to inform freshman and sophomore college students about the advanced transportation field and encourage them to pursue it as their engineering career path.

The number of courses taken by students has also grown over the last five years. If you look at the Figure below, you can see that in the first year CITE provided 81 courses to students. In the fifth year, the number of courses taken grew to 571 courses. There is a huge spike in courses taken in the third year due to the release of two certificates in June 2002 and the pilot offering of CITE's first blended course in November 2002. There is also another large spike in the fifth year that is due to the increased number of blended courses CITE offered to students.



Since CITE began offering courses in June 2000, there have been two significant events. The first was the increased interest in CITE's courses when two certificate programs were released in June 2002. Many students who were taking individual courses wanted to switch over to one of the certificate programs. Most students wanted to put it on their resume and many of them needed to complete it for a raise at their job. The other event was the release of blended courses in summer 2003 (pilot course in November 2002). Blended courses combine the best features of both instructor-led and web-based instruction. These features include: live discussions with the instructor through the use of conference calls; convenient, flexible web-based learning; workshop problems designed to reinforce the

concepts being taught, and promote interaction with other students; a specific time schedule in which to complete the course; and networking and interaction with both students and instructors through the use of class problems posted on a discussion board. CITE found that there was a significant increase in completion rates with blended courses. CITE also asked students who had taken a regular web-based course and a blended course which they preferred and most chose the blended format. In the supporting materials, there is an article called "Premium Blend" that appeared in *Transportation Technology International* in May 2005 about the blended learning concept.

As stated earlier, CITE is able to reach out to graduate and undergraduate university/college students through its University Partners. CITE offers FREE access to all of the courses it develops to any university that is a CITE University Partner and there are no fees to become a partner. The goal is to reach as many university/college students as possible so they have knowledge of the advanced technology aspect of civil engineering BEFORE they reach their first job. William Sproule from Michigan Technological University stated: "At universities with small graduate programs (like ours) it allowed us to offer a course that goes beyond the expertise of our faculty, and is cost effective." Enthusiasm for the course was not limited to faculty, as shown in this quote from a university student who took the Fundamentals of ITS and Traffic Management course: "I was one of the University of Massachusetts students who took the ITS course under the guidance of Dr. Jonathan Upchurch last semester (Spring 2000). I learned a lot through the course and it really encouraged me to go for a career in ITS."

CITE directly reaches out to current practitioners and offers them courses for continuing education units. The funding received from these courses is used to support activities such as registration, marketing, technical assistance, certificates, updates to existing courses, server maintenance, etc. At this time, the costs to develop new courses come from other sources. It is CITE's goal to be completely self sustaining.

CITE's initial funding was received from the I-95 Corridor Coalition (Coalition). The Coalition is an alliance of transportation agencies, toll authorities, and related organizations, including law enforcement, from the State of Maine to the State of Florida, with affiliate members in Canada. The Coalition provides a forum for key decision and policy makers to address transportation management and operations issues of common interest. The Coalition funding recognized two key benefits of CITE. First, distance learning offers a convenient way to provide ITS training to its member's existing employees. Second, CITE facilitates graduate level ITS education for potential new employees and offers the opportunity to attract students to a career in ITS. The Coalition funded the development of the CITE's initial full semester course.

CITE markets its courses through a variety of methods. CITE has had booth displays at the ITE Annual Meeting, TRB, ITS World Congress, and the ITS America Annual meeting. All of CITE's courses are included in the ITE training clearinghouse and the catalog of ITS Distance Learning courses. CITE participates in some way at all of the ITS State Chapter annual meetings by providing giveaways for attendees and gift certificates that are given away through drawings. CITE has also made presentations about its program at ITS State Chapter Annual meetings, ITS America Annual meetings, ITS World congress meetings, FHWA specialists meeting, LTAP regional meeting, etc. CITE has written articles that have been included in various newsletters (I-95 Corridor Coalition, the ITE TEC quarterly newsletter) and magazines (*Transportation Technology International* and *ITS International*). For each blended course that is offered, CITE develops and distributes a press release that goes out to: CITE's existing and potential student database, e-mail list serves for almost all of the ITS America State Chapters, ITS America's web site, Bernie Wagenblast's daily e-newsletter, the FHWA PCB web site and e-mail list, and any others that might be directly related to the topic.

CITE's courses have been well received by both university students and current practitioners. Earlier you were presented with two quotes from the university perspective. Here are some quotes received from practitioners. In order to receive their CEU certificate, CITE requires all students to complete a survey when they have finished a course. The surveys are received anonymously and allows CITE to collect data on the course. Attached is a sample of data received from a blended course offering.

Comments received from practitioners about CITE's courses:

- This course was a good experience and provided me with valuable information. I would recommend it to others with little or no reservation.
- I would recommend this course to others at my agency. I felt it was a good use of my time, and it helped me to see certain project-related issues from the contractor's perspective. Good job, and thanks.
- This has been one of the best values I have seen in continuing education.