



# **Distance Learning: The Users Perspective**

ITSA Annual Meeting

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Miami, FL



## **A unique consortium...**

of universities and industry partners dedicated to providing ITS training and education in a manner that is convenient to both existing practitioners and graduate students.

**CITE**

consortium for ITS training & education

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## **Partners**

- I-95 Corridor Coalition
- Participating Universities
- ITS America
- Federal Highway Administration
- National Highway Institute
- Federal Transit Administration
- National Transit Institute

## **Why is CITE unique?**

All of its courses have been developed in an interactive web-based format.

## Benefits of Web-based Courses

- **Flexibility** – Take the course anytime and from anywhere.
- **Just-in-time delivery.** The course is there when you need it.
- **Interactivity.** Include a stimulating mix of participatory activities used to support and reinforce the text-based information.

## **“Interactive” Means Courses Include...**

- Simulations
- Self Study Quizzes and Exercises
- Drag and Drop Pages
- Crossword Puzzles
- Jeopardy Games

## CITE's Courses

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Fundamentals of ITS and Traffic Management

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Applied Systems Engineering for Advanced Transp. Projects

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Introduction to ITS

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Traffic Flow Theory as Applied to ITS

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Introduction to Telecommunications Technology

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Introduction to Information Technology

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Transportation Management

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The Tools of ATMS (VMS, HAR, sensors, displays, controllers)

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Incident Management and Emergency management

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Corridor Management including Ramp Metering and Traffic Control Centers

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Dynamic Route Guidance and In-vehicle Systems

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Traffic Signal Systems – Fundamentals

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Interoperability: ITS System Architecture and Standards

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# Sample Page with Graphics



## Multiplexing Page 31



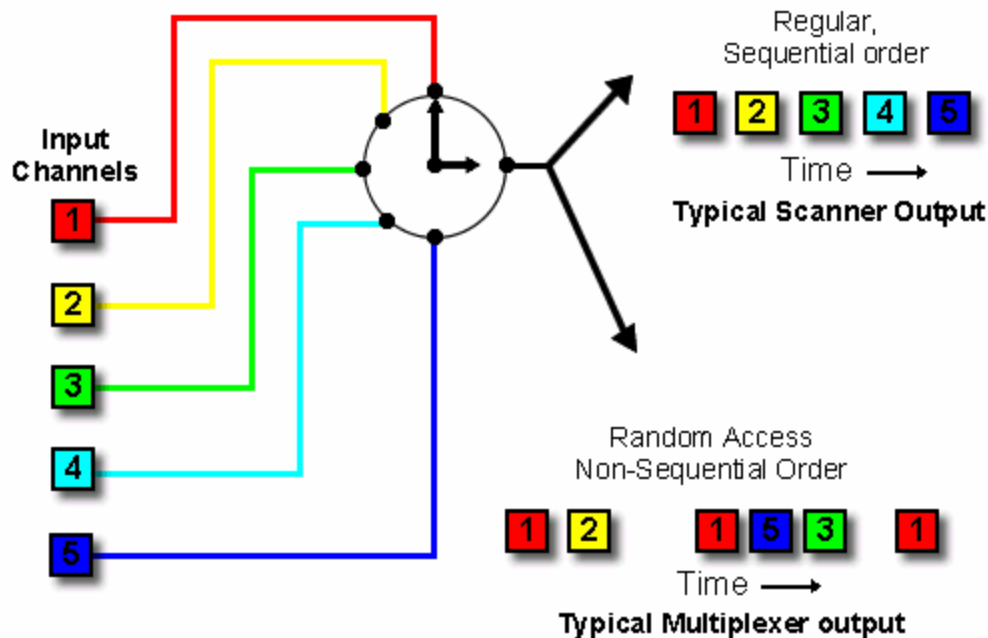
There are two main multiplexing techniques: Frequency Division Multiplexing (FDM) and Time Division Multiplexing (TDM).



In TDM, stations are allocated the entire bandwidth of frequencies but only for a small portion of time.



In FDM, portions of the frequency spectrum are allocated to each transmitter and all transmitted signals must remain within the allocated frequency band.



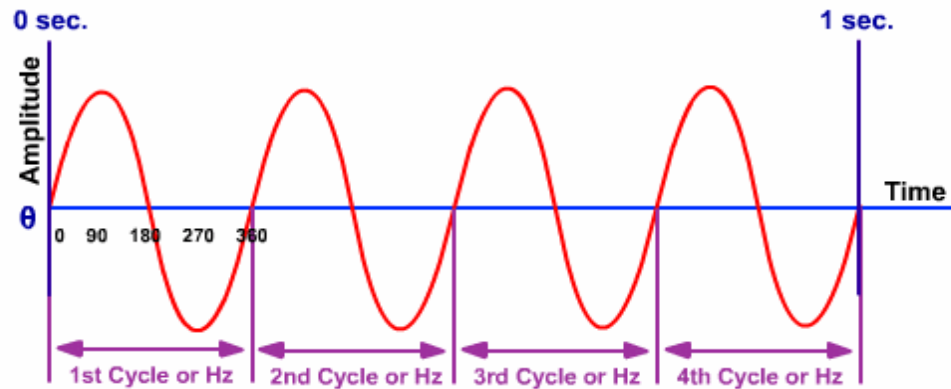


# Sample Interaction



## Signal Properties (cont'd) Page 15

Move your cursor over the words below the graphic.



● Cycle

The number of complete identical cycles per unit time.

● Period

● Frequency

In the example above there are 4 cycles in one second or 4 Hz.

● Phase

# Self-Study Quizzes Test Student's Knowledge

**1 Existing freeway HOV lanes carry the person-equivalent of two to five conventional lanes, and do so at a higher level of service than the conventional lanes.**

- True
- False
- Don't know

**2 What is the total minimum width recommended for single-lane HOV facilities?**

- a. 8.2m (28ft)
- b. 6.1m (20ft)
- c. 7.3m (25ft)
- None of the above

**3 Which type of ramp connection to the HOV is the easiest and least expensive to build?**

- 1. Fly-over ramp
- 2. Slip-ramp
- 3. At grade ramp
- 4. Grade Separated Interchange
- None of the above

# Crosswords...Self Study Without the Feel of a Quiz

**CITE** Introduction to Telecommunications

**Crossword Puzzle** Page 48

**Across**

2. The shape of a cellular network cell
3. Difference between the highest and the lowest frequencies a channel can pass through
5. Location housing telecommunication devices needed to access the network
6. An analog signal

**Down**

1. Collection of electronic devices or circuits capturing the transmitted signal and converting it to useable form
2. Serves as the focal point for communications between remote sites and their operations center
4. Wire medium used for short distance connections
7. Signal encoding information at ...

## Number of Students

- CITE has trained 72 students
  - June 30, 2000 - May 31, 2001
- Universities have educated approximately 180 students over the same period.

# Calculation Methodology

- 1. Strongly agree
- 2. Agree
- 3. Neutral
- 4. Disagree
- 5. Strongly Disagree

- Yes = Strongly Agree + Agree
- No = Strongly Disagree + Disagree
- Percentage = Total number of yes/total

## Question 1

This course had value to you:

- 1. Strongly agree
- 2. Agree
- 3. Neutral
- 4. Disagree
- 5. Strongly Disagree

**100% said yes**

## Question 2

You can go back to your office and use the information learned in the course?

- 1. Strongly agree
- 2. Agree
- 3. Neutral
- 4. Disagree
- 5. Strongly disagree

**90% said yes**

## Question 3

Compared to classroom type classes, do you think distance learning classes are better?

- 1. Strongly Agree
- 2. Agree
- 3. Neutral
- 4. Disagree
- 5. Strongly Disagree

**40% said Yes**



## **Comments: Prefer On-line Courses**

- I would prefer on-line because of the convenience that it provides. The environment also allows the reader to go back and review topics that haven't been understood the first go-around.
- Probably distance learning since I virtually have no time to even consider a classroom environment.
- I like taking the course on-line. I couldn't attend this course if it was only offered in a classroom unless it was offered where I live.

## **Comments: Prefer On-line Courses**

- On-line because if someone had to talk to me about these technical terms, I might get bored; whereas I had to read the material myself, I kept interested and focused
- Distance learning is far superior due to convenience factors.
- The on-line is better for me because I do not get release time for the course and the method maximizes the time spent for learning.

## **Comments: Liked Classroom Better**

- Classroom environment! Pedagogically speaking, I don't believe studying on-line is as sound as in a classroom environment. I believe that quality of instruction suffers for the sake of convenience.
  - Liked Most: Flexibility - I was able to study at my own pace, where and when I wanted. Very convenient.
  - Would take another CITE course and would recommend to others

## **Comments: Liked Classroom Better**

- Classroom. I like the more traditional teaching learning approach of sitting in a classroom, listening to lectures, asking questions, and listening to others' questions.
  - Liked most: I had very limited time during the course of this class, but it was so flexible that I was able to fit it into my schedule.
  - Would take another CITE course and would recommend to others

## **Comments: Benefits to Both**

- The classroom environment allows interaction with the teacher; however the on-line class can be taken when time allows. They both have their good points.
- It's a trade-off. I prefer the classroom environment because it gives more opportunity to ask questions on concepts you don't understand or want more information on. However, I probably would not have traveled to Univ. of MD and taken the course.

## Question 4

You would recommend this course to others:

- 1. Strongly agree
- 2. Agree
- 3. Neutral
- 4. Disagree
- 5. Strongly disagree

**90% said Yes**

## Question 5

You would take another CITE distance learning course:

- 1. Strongly agree
- 2. Agree
- 3. Neutral
- 4. Disagree
- 5. Strongly Disagree

**85% said Yes**

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