

Understanding Transit:

Basic course material on Public Transportation

Suggested Course Description: 3 cr. Senior Graduate level. Transit Systems: 3 cr. Procedures for the analysis and planning of public transportation systems. Major investment studies, transit operations decisions, use of performance indicators, transit relationships, cost and demand analysis.

Prerequisites by Topic:

- Understanding of fundamentals of planning and transportation systems.
- Written and Graphical skills
- Mathematical preparation to understand basic algebraic relationships and financial analysis
- Computer preparation including office software. (understanding of geographical information systems is desired)

Course Objectives:

Broad Objectives

- The objective of this course is to create an understanding of public transport by students interested in professional careers in transportation.
- Students should be able to understand differences between public transit planning, design and operations and procedures used for other modes.
- Students should be able to understand the New starts process for planning of major fixed guideway transit systems.
- Students should be familiar with procedures used for transit operating decisions, and for the planning of major new systems or extensions.

Learning Outcomes: At the completion of the material, students should have an understanding of:

- Differences between highway and transit
- Characteristics of transit use and benefits of transit.
- The transit project development process including the development of alternatives analysis and major investment studies
- Use of performance indicators for transit planning and management.
- Alternative technologies for public transportation
- Principles of route location and design
- Procedures to estimate transit demand
- Cost analysis procedures.

Topics Covered:

Background Information

- Glossary of Transit Planning Terms
- A Profile of Public Transit Riders (from APTA)
- The National Transit Database
- Differences Between Highway and Transit Planning
- Transit Benefits

Planning Process for Major Investments and New Starts

- New starts procedures for major investments in Transit
- FTA information on new starts - major capital investments process
- Transit Technology Alternatives
- Environmental Impact Assessment
- Environmental Justice Process
- Transit and Land Use
- Basics of Travel Modeling

Transit Operations Planning

- Transit Operations Decisions
- Transit Performance Evaluation
- Use of Performance Data
- Use of GIS for performance evaluation
- Transit Five Year Plan examples

Transit Route Analysis

- Principles of Route Location
- Fleet Size Calculations
- Transit Scheduling

Demand and Cost Analysis

- Demand Analysis for Transit Operations
- Cost Analysis for Transit Operations

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