

CIV 407 - Transportation Economics

Current Catalog Description: Microeconomics principles applied in the transportation field. Transportation demand and supply. Transportation costs (fixed costs, variable costs) and externalities. Economic and social benefits of transportation. Economics principles for transport pricing, e.g. toll pricing. Cost benefit analysis of a transportation project. History government regulation of transportation.

Prerequisite: CIV 305
EST 392 or ECO 108

Corequisite: None

Textbooks and/or Required Texts:
Other Required Material: McCarthy, P.S. (2001). Transportation Economics, Theory and Practice: A Case Study Approach. Blackwell Publishers.

This course is: Not Required;
Technical Elective Option

- Topics Covered:**
1. Introduction to transportation economics
 2. Review of microeconomics theory and statistics
 - a. Transportation supply and demand
 - b. Cost functions
 - c. Price elasticity
 - d. Utility functions and estimation
 - e. Discrete choice models
 3. Transportation Demand
 - a. Travel demand forecasting
 - b. Divisible and discrete good cases
 - c. Aggregate and disaggregate models
 4. Transportation Costs
 - a. Fixed and variable costs
 - b. Short term vs. long term costs
 - c. Scale economies
 - d. User costs and generalized costs
 - e. Externalities
 5. Transportation Pricing
 - a. Public and private pricing
 - b. Revenues
 - c. Marginal pricing
 6. Road pricing
 - a. Congestion pricing
 - b. Value of time
 7. Transportation Benefits
 - a. Local and regional economies
 - b. Industry competitiveness
 - c. Social welfare
 - d. Job creation
 8. Cost-Benefit Analysis for Transportation
 - a. Transportation supply and demand
 - b. Goal achievement matrix
 - c. Net present value analysis
 - d. Indirect benefits
 9. Public and private sector role in transportation investments
 - a. Regulation
 - b. Deregulation and privatization in transportation
 - c. Financing of transportation projects

Course Learning Objectives:

Apply existing transportation demand forecasting models
Understand the concept of transportation costs (fixed costs, variable costs) and externalities
Grasp the economics principles for transport pricing
Describe the economic and social benefits of transportation
Conduct a cost benefit analysis of a transportation project
Understand the history government regulation of transportation

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