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 Other Required Material:**

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

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<table>
<thead>
<tr>
<th>Course Learning Objectives:</th>
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<tr>
<td>Apply existing transportation demand forecasting models</td>
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<td>Understand the concept of transportation costs (fixed costs, variable costs) and externalities</td>
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<td>Grasp the economics principles for transport pricing</td>
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<td>Describe the economic and social benefits of transportation</td>
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<td>Conduct a cost benefit analysis of a transportation project</td>
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<td>Understand the history government regulation of transportation</td>
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**Prepared by:** Anil Yazici (2019)