Urban Transportation Planning

Course Outline
2013

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• **Introduction**
  This course is designed to give students basic knowledge and training in the analysis and planning of urban transportation systems. Relevant areas of concentration include the urban transportation planning process, transportation demand and supply models, data collection, processing, formulation and evaluation of solutions.

• **Objectives:**
  - The course aims at imparting knowledge on understanding of urban transportation problems in planners perspective, definition of the problem, setting clear goals and objectives to serve as guiding factors in the planning process.
  - Identification of the factors influencing the demand for urban travel and development of relationship between the factors and the travel demand.
• Objectives:
  - The course also provides adequate exposure to travel demand forecasting and application of the results of the forecasting to identify the right type of the transportation system needed to cater to the future demand.
  - Understand transportation planning concepts, procedures and techniques
  - Gain basic knowledge and experience of transportation modeling and related software.

• Topics:
  1. Introduction to Urban Transportation Planning  6 hours
    1.1 Definition
    1.2 History of roads, transportation and planning Background
    1.3 Multimodal perspective on transportation planning
    1.4 A changing society and its impact on UTP
    1.5 Road classification
    1.6 Roads and highway network
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• Topics:

2. Characteristics of Urban Transportation System 8 hours
   2.1 Developing of transportation system
   2.2 Fundamental principles
   2.3 Transport modes and characteristics (speed, capacity, LOS, external impacts...)
   2.4 Traffic counts
   2.5 Engineering traffic studies
   2.6 Traffic congestion.

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• Topics:

3. The Transportation Planning Process 6 hours
   3.1 Basic Elements of Transportation Planning
   3.2 Transportation Planning Institutions
   3.3 Transportation and land use.
   3.4 Urban activity system analysis.
   3.5 Data management and use in Decision making.
   3.6 Transportation Planning Problem Definition, Solution Generation, Solution Analysis, Evaluation and Choice.
   3.7 Activities Involved in Transport analysis.
   3.8 Limitations of transport planning
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• Topics:
4. Travel demand forecasting and trip generation  8 hours
   4.1 Urban travel demand (parking, airports...).
   4.2 Transportation supply analysis
   4.3 Mode choice, trip assignment.
   4.4 Forecasting Travel.
   4.5 Trip Production Analysis, Category Analysis, Trip Modeling.
   4.6 Mode Choice Modeling
   4.7 Development of model for local area.

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• Topics:
5. Road safety and road accidents  4 hours
   5.1 Road accident
   5.2 Accident Statistics
   5.3 Factors Contributing to accidents
   5.4 Road Safety Education
   5.5 Issues Involved in Transportation Safety
   5.6 Traffic calming
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• Text Book:

• Text Book:
• References:


• Traffic Planning and Engineering. F. D. Hobbs, Pergamon Press, London


• In addition to a number of journal and Master thesis can help students to increase their knowledge.
• Presentation Methodology:
  • Lectures using LCD or over head projector,
  • discussion classes,
  • projects and
  • field work.

• Grading Policy:
  • Midterm Exam. 25%
  • Course Work. 25%
  • Final Exam. 50%

• Assignments:
  • Web site Exploring
  • Traffic counts
  • Traffic modeling
  • Local studies
Good Luck