Transportation Planning
ENGC 6381

Course Outline

Introduction

This is a master course oriented for the students in civil engineering department-infrastructure. It is intended to give further knowledge and training in the field of Transportation Planning.

Course Description

This course provides an overview of the urban transportation planning process. It involves the elements of situation and problem definition, search for solutions and performance analysis, as well as evaluation and choice of project. The process is useful for describing the effects of a proposed transportation alternative and for explaining the benefits to the traveler of a new transportation system and its impacts on the community. The process includes developing forecasts of travel demand, conducting evaluations based on economic and noneconomic factors, and identifying alternatives for short-, medium-, and long-range purposes.

Course Objectives

Broad Objective

• The objective of this course is to provide an understanding of the nature of travel demand and methods used to plan for future transportation systems.

Learning Outcomes: Students should have an understanding of:

• Factors underlying traveler choices of mode of travel, route choice and destination choice and how these processes can be represented mathematically.

• Steps those are necessary to complete a long-range transportation plan.

• The validity and source of information that comes from a sequence of travel forecasting models.

• How engineers and planners interact with government, citizens and officials to develop and interpret transportation plans.

• Knowledge of data required for transportation planning.

• Ability to make tradeoffs with multiple factors in project planning and design.
Topics:

- The Transportation Planning Process
  - Basic Elements of Transportation Planning
  - Transportation Planning Institutions
  - Urban Transportation Planning
  - Forecasting Travel

- Forecasting Travel Demand
  - Demand Forecasting Approaches
  - Trip Generation
  - Trip Distribution
  - Mode Choice
  - Traffic Assignment
  - Other Methods for Forecasting Demand
  - Traffic Impact Studies

- Evaluating Transportation Alternatives
  - Basic Issues in Evaluation
  - Evaluation Based on Economic Criteria
  - Evaluation Based on Multiple Criteria

- Computer Application
  - TransCad; and
  - Others.

Text books


References:


Grading Policy:

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Good Luck