Urban Mass Transit

Code	Credit Hours
URP 904	3-0

Course Description

The objective of the course is to understand the urban transportation problems which now have been compounded by recent challenges such as climate change and energy consumption and importance and need of quick commuter movement / urban public transit facilities.

Reference Books:

1. Vukan R. Vuchic (2001) Urban Transit (Operations, Planning and Economics).
2. Rober C.Past Urban Mass Transit (The Life Story of a Technology) (2001)
3. Vukan R.Vuchic Urban Transit (Systems and Technologies) (2001)
4. Wolfgang, S. Home bunger & James H. Kell, Fundamental of Traffic Engineering (10th Edition)
5. Jon D. Frocker & Robert K. White Ford, Fundamental of Transportation (A Multiple Systems Approach)
6. A Multiple Systems Approach. (A Multiple Systems Approach)

Prerequisites

Nil

Assessment System for Theory

Quizzes	10-15%
Assignments	5-10%
Mid Terms	25-30%
ESE	45-50%
Term Project	10-15%

Teaching Plan

Week no	Topic	Learning outcome
1-3	Introduction to the Public Mass Transportation	Introduction to the course objectives, outline and grading policy. Public mass transportation system technologies, design, operation, and planning including vehicle characteristic, bus transit, light rail and rail rapid transit, schedules and networks, capacity, passenger characteristics, and paratransit.
4-6	Role of Public Transportation in Urban Development	What is the history and role of public transportation in urban development, urban Passenger transport modes, vehicle Motion and performance, transit system performance (capacity, productivity, efficiency and utilization).
7-8	Highway Transit	Defining highway transit. Use of highways. Importance of highways. Modes of highway transit like Bus, Trolley Bus and Bus Rapid Transit.
9	**MID SEMESTER EXAM**	
10-11	Rail Transit	What is Rail transit? Types, importance and use of rail transit. Technical considerations in the design of rail transit systems like street cars/tram ways, light rail, rapid transit and regional rail.
12	Unconventional Concepts and Systems	Automated guided transit and monorails, Specialized technology systems like Artificial Intelligence, cloud computing, and networking, paratransit, characteristics and comparisons of transit modes.
13-14	Transit Systems, Operation and networks	How to conduct management of vehicles, personnel, and resources to ensure efficient movement of goods and passengers. Coordination among the interconnected infrastructure of roads, railways, air routes, and maritime routes. How to plan and adapt transport networks to enhance efficiency and minimize costs.
15	Transit agency economics and organization	How transit agencies manage day to day operations, secure funding and subsidies, organizational structures of the agency and how agencies deal with economic challenges.
16-17	Transit Systems planning and mode selection	How to do transportation need assessment for a community, mode evaluation on factors like capacity, cost, environmental impact, and accessibility. Planning for multimodal integeration.
18	**END SEMESTER EXAM**	