URBAN TRANSPORT PLANNING

II Semester

Course Code: 19CE2107	L	P	C
	3	0	3

Prerequisites: Transportation Engineering

Course Outcomes:

At the end of the course, the student will be able to:

CO1 Describe the aspects of transport planning and traffic survey forecasting.

CO2 Apply the concepts of Trip Generation.

CO3 Analyse Trip Distribution methodologies.

CO4 Evaluate various Trip Assignment and Modal Spit methodologies of transportation planning.

CO5 Discuss about Land Use Transport Models, Transport Economics and traffic-Environment Interaction.

UNIT-I: **(10 Lectures)**

TRANSPORT PLANNING PROCESS: Stages of transport planning, Land use transport interaction.

TRAFFIC SURVEYS AND FORECASTING: Survey and analysis of existing conditions –Forecast analysis of future conditions –Transportation surveys, analysis and application.

Learning outcomes:

1. Illustrate stages of transportation planning processes (L4)
2. Discuss about transportation surveys for planning process (L2)
3. Explain the land use transportation interaction (L2)

UNIT-II: **(10 Lectures)**

STAGES IN TRANSPORT PLANNING: Trip generation –theory and modeling techniques –Linear Regression Analysis-Multiple Linear Regression Analysis (MLRA)-Category Analysis

Learning outcomes:

1. Illustrate Trip Generation Methodology (L4)
2. Design regression equations for Trip Generation (L6)
3. Discuss about Category Analysis (L2)

UNIT-III: (10 Lectures)

TRIP DISTRIBUTION: Theory and modelling techniques and methodologies.-Gravity Model, Trip distribution based on growth rates, Other methods.

Learning outcomes:

1. Illustrate Methods of Trip Distribution (L4)
2. Design future trip distribution matrix (L6)
3. Calculate the future trip distribution using Gravity Model (L3)

UNIT-IV: (10 Lectures)

TRIP ASSIGNMENT AND MODAL SPLIT: Trip assignment–theory and modelling techniques and methodologies. Modal split-theory and analytical techniques.

Learning outcomes:

1. Illustrate and Compute Trips Assigned to Network (L4)
2. Discuss about Modal Split theory (L2)
3. Compare various modal split theories (L5)

UNIT-V: (10 Lectures)

LAND USE TRANSPORT MODELS: Lowry & Garin Lowry Models

MASS TRANSIT: Introduction to Metros, BRTS, MonoRails

TRANSPORT ECONOMICS AND ENVIRONMENT: Economic evaluation of transport plans –Vehicle operating costs –Value of travel time savings and accident costs –Fuel crisis and promotion of public transport. Severance and land consumption-air pollution-noise.

Learning outcomes:

1. Illustrate Land Use Transport Models (L4)
2. Visualize Transport Economics and Environment (L2)
3. Discuss about the pollution from traffic (L2)

Text Books:

1. Kadiyali L.R., Traffic Engineering and Transport Planning, 6th Edition, Khanna Publishers, 1999.

2. Michael D. Meyer and Eric J. Miller, Urban Transportation Planning: A Decision Oriented Approach, 2nd Edition, McGraw-Hill Book Company, New York, 1984.

References:

1. David Hensher, Proceedings of Seventh World Conference on Transport Research: Volume 1–Travel Behavior, Volume 2 – Modelling Transport Systems, Volume 3 –Transport Policy, Volume 4 –Transport Management, Pergammon Press, USA, 1996.
2. James H. Banks, “Introduction to Transportation Engineering”, 2nd edition, Tata Mc Graw Hill, 1995.
3. John W. Dickey, “Metropolitan Transportation Planning”, 2nd Edition, Tata McGraw-Hill Publishing Company Ltd, New Delhi, 1980.
4. Thirumurthy A.M., “Environmental Facilities and Urban Development in India – A System Dynamic Model for Developing Countries, Academic Foundations, 1 st Edition, India, 1992.