7CE164 Transportation Systems and Planning

L-T-P-Cr: 3-0-0-3

Objective: To introduce the planning process and travel demand analysis.

Theory: 1. Transportation planning process and concepts: Role of transportation, Transportation problems, Urban travel characteristics, Concept of travel demand, Demand function, Demand estimation 8 Lectures

2. Trip Generation Analysis: Zoning, types and sources of data, expansion factors, Accuracy checks, Trip generation models (Zonal models, Household models, Category analysis, Trip attraction of work centers) 9 Lectures

3. Trip Distribution Analysis: Trip distribution models, Growth factor models, Gravity models, Opportunity models 8 Lectures

4. Model Split Analysis: Model split models, Mode choice behavior, Competing models, Mode split curves, Probabilistic models 8 Lectures

5. Traffic Assignment: Route split analysis, Elements of transportation networks, Nodes and links, Minimum path trees, All-or-nothing assignment, Multiple assignment, Capacity restraint 9 Lectures

Scheme of Examination: Class test I/Assignment : 5Marks Class test II/Assignment : 5Marks Mid Semester Examination : 20Marks

End Semester Examination : 70 Marks Text Books: 1. Kadiyali, L. R.,’Traffic engineering and transport planning’,6thedition,Khanna publishers 2. Khisty C.J &LallB.K.,Transportation Engineering, Prentice Hall of India 3. Papacostas, C. S., Fundamentals of Transportation Engineering, Prentice Hall of India, New Delhi Reference Books: 1. PrakashRao and Sundaram, Regional Development Planning in India, Vikas Publishing House. 2. B.G. Hutchinson, Introduction to Urban Transportation Systems Planning, McGraw Hill. 3. Vukan R. Vuchic, Urban Public Transportation Systems and Technology, Prentice Hall Inc., N.J. 4. G.E. Gray and L.A. Hoel, Public Transportation Planning Operations and Management, Prentice Hall Inc.

Expected Outcome: The students will be able to forecast travel demand and analyze the trip route distribution, modal split and traffic assignment.