**17CE32E4 - URBAN TRANSPORTATION PLANNING**

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| **Course Category** | Core Elective | **Credits** | 3 |
| **Course Type** | Theory | **Lecture - Tutorial - Practical** | 3 - 0 - 0 |
| **Prerequisite** | Transportation Engineering – I and II | **Sessional Evaluation** | 40 |
| **Semester End Exam Evaluation** | 60 |
| **Total Marks** | 100 |

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| **Course Objectives** | 1. To discuss transport planning process. 2. To explain different types of transportation surveys. 3. To predict trip generation for transport planning. 4. To present trip distribution concepts. 5. To discuss methods of traffic assignment and also model split. 6. To discuss evaluation of different plans and also preparation of transportation plan for small and medium towns. | |
| **Course Outcomes** | CO1 | Understand the basic concepts of transportation planning along with method of traffic forecast analysis. |
| CO2 | Able to conduct transportation surveys which are essential in urban transportation planning. |
| CO3 | Explain the basic concepts, factors affecting Trip generation and also use multiple linear regression analysis for Trip generation calculations. |
| CO4 | Understand methods of trip distribution. |
| CO5 | Understand the concepts of assignment techniques and model spilt analysis. |
| CO6 | Perform evaluation of transportation plans and also prepare transportation plan for a small town. |
| **Course**  **Content** | **UNIT – I**  **TRANSPORT PLANNING PROCESS:** Scope of the Subject – Interdependence of the land use and traffic – Systems approach to transport planning – Urban morphology – urbanization and stages in transport planning – Survey and analysis of existing conditions – Forecast analysis of future conditions and plan synthesis – Evaluation – Programme adoption and implementation – Continuing study – Citizen participation – Difficulties in the transport planning process.    **UNIT – II**  **TRANSPORTATION SURVEY:** Introduction – Definition of the study area – Zoning – Type of Surveys – Home interview surveys – Commercial vehicles surveys – Taxi surveys – Roadside interview surveys – Postcard questionnaire – Registration number plate surveys – tags on vehicles – Public transport surveys – Inventory of transport facilities – Inventory of land use and economic activities – Expansion of data from samples.  **UNIT – III**  **TRIP GENERATION:** Introduction and definitions – Trip purpose – Factors governing trip classification –Trip generation and attraction rates – Multiple linear regression analysis – Category analysis – Trip based and activity based approach – Urban transport planning – goals – Objectives and constraints.  **UNIT – IV**  **TRIP DISTRIBUTION:** What is trip distribution – Methods of trip distribution – Growth factor methods - Uniform (Constant) factor method – Average factor method – Synthetic methods – Gravity model.  **UNIT – V**  **TRAFFIC ASSIGNMENT**: Purpose of traffic assignment – General principles – assignment techniques – All-or-nothing assignment – Multiple route assignment – Capacity restraint assignment – Capacity restraint assignment – Diversion curves.  **MODEL SPLIT**: General considerations – Factors affecting model split – Model split in the transport planning process. Recent development in model split analysis.  **UNIT – VI**  **EVALUATION**: Need for Evaluation – Several plans to be formulated – Testing – Considerations in evaluation – Economic evaluation. Land use transportation models- introduction – selection of land use transport model  **TRANSPORT PLANNING FOR SMALL AND MEDIUM SIZED CITIES**: Introduction – Difficulties in transport planning for small and medium cities – Quick response techniques. | |

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| **Textbooks**  **and**  **References** | **TEXTBOOKS:**   1. Traffic Engineering and Transport Planning by L.R. Kadiyali. 2. Transportation Engineering, Vol I and VoII by Vazirani and Chandola. 3. Transportation Engineering Vol I Venkatramaiah. C**.**   **REFERENCE BOOKS:**   1. Transportation Engineering and planning by C.S. papacostas, P. D.Prevedouros. 2. A course in Highway Engineering by S.P. Bindra. 3. Introduction to Traffic Engineering by R Srinivasa kumar. |