

Major Elective – 3

(Group – 4)

Road Safety and Environment

Course Objectives:

1. To make the students aware of importance of road safety aspects and environmental impacts for commissioning the highway project.
2. The students should know about Road Safety Audit and EIA requirements/guidelines of World Bank and India for Highway projects.
3. To give the idea for mitigation measures for improving traffic safety and environment.

Course Contents:

1. Multidisciplinary approach to planning for traffic safety and injury control; pre crash and post crash models; Roles of vehicle, roadway traffic, driver, and environment, crash and injury causations; Accident analysis, Conflict points at intersections, Pedestrian safety.
2. Road safety Audit: Mixed traffic flow; Transport related pollution; Technology Vision-2020; Urban and non urban traffic noise sources, Noise pollution.
3. Energy related aspects of different transport technologies. Traffic Calming Measures. Road transport related air pollution, sources of air pollution, effects of weather conditions, Vehicular emission parameters, pollution standards, measurement and analysis of vehicular emission; Imitative measures.
4. EIA requirements of Highways projects, Procedure; MOEF World Bank/RC/UK guidelines; EIA practices in India.

Practical work:

1. Collection of road accident data.
2. Accident analysis of collected data.
3. Collection of data regarding black spots on major highways including geometric details.
4. Analysis of black spots data and suggest mitigation measures.
5. Collection of air quality data (emission level) and noise level data on problematic spots of highway.
6. Analysis of collected data and suggest improvement measures.

References:

1. Evans S.K., *Traffic Engineering Handbook*, Institute of Traffic Engineers, USA
2. Wohl M., Martin B.V., *Traffic system analysis of Engineers & Planners*, McGraw Hill, New York.
3. Babkov V.F., *Road conditions & Traffic Safety*, MIR Publishers, Moscow, 1975
4. Kadiyali L.R., *Traffic Engineering & Transport Planning*, Khanna Publishers, 2003
5. Little A.D., *The state of art of Traffic Safety*, Paraeger Publishers, New York, 1970
6. Relevant IRC codes