Major Elective – 3
(Group – 2)
Environmental Impact Assessment of Transportation Projects

Course Objectives:

1. To provide the basic understanding of environmental impact analysis.
2. To make the students conversant with techniques of prediction and assessment on air, noise and social environment due to transportation projects.
3. To give the concept of decision methods for evaluation of alternative proposals.

Course Contents:

1. Introduction: Concepts of environmental impact analysis, key features of National environmental policy act and its implementation, screening in the EIA process, utility and scope of EIA process, Environmental protection acts EIA at national level. Conceptual approach for environmental impact studies, planning and management of impact studies, matrix and network methodologies for impact identification, description of the affected environmental – environmental indices.
2. Prediction and Assessment of Impact on Air Environment: Basic information on air quality, sources of air pollutants, effects of air pollutants, key legislations and regulations, conceptual approach for addressing air environment impacts, impact prediction approaches, assessment of significance of impacts, identification and incorporation of mitigation measures.
3. Prediction & Assessment of Impact on Noise & Social Environment: Basic information on noise, key legislation and guidelines, conceptual approach for addressing noise environment impacts, impact prediction methods, assessment of significance of impacts, identification and incorporation of mitigation measures, Conceptual approach for addressing socio-economic impacts, traffic and transportation system impacts, visual impacts, scoring methodologies for visual impact analysis
4. Decision Methods for Evaluation of Alternative: Development of decision matrix. Public participation in environmental decision making, Regulatory requirements, environmental impact assessment process, objectives of public participation, techniques for conflict management and dispute resolution, verbal communication in EIA studies.

Tutorials:

1. Problems based on matrix and network methodologies for impact identification.
2. Problems based on prediction and assessment of impact on air environment due to transportation.
3. Problems based on prediction and assessment of impact on noise level due to transportation.
4. Problems based on development of decision matrix.

Group work:

Collect the data for air quality (emission level) and noise level near the problematic spots on road network. Analyze and prepare a brief report with suggestions for improvement. Present the report with group discussion.

References:

1. Canter L.W., *Environmental Impact Assessment*, McGraw-Hill, 1997
2. Betty Bowers Marriott, *Environmental Impact Assessment: A Practical Guide*, McGraw-Hill Professional, 1997.
3. Peter Morris & Riki Therivel, *Methods of Environmental Impact Assessment*, Routledge, 2001.
4. Denver Tolliver, *Highway Impact Assessment*, Greenwood Publishing Group, 1993.
5. R. K. Jain, L. V. Urban, G. S. Stacey, H. E. Balbach, *Environmental Assessment*, McGraw-Hill Professional, 2001.
6. Relevant IRC & CPCB codes.