Course syllabus

Department of Civil Engineering, Indian Institute of Technology Madras

CE5017 - Urban Transport and the Environment

Credit Distribution: C:9 L:3 T:0 P:0 E:0 O:6 TH:9

Course Type: Theory

Description: To recognize the importance of transportation-related environmental problems in the global, national, regional and local context. To provide an understanding of transport, environmental intrusion, its measurement and mitigation. To provide an understanding of the assessment of transport emissions.

Course Content: Introduction to different modes of transport; transport characteristics; traffic flow analysis, quantitative methods, characteristics of public transport systems; road safety; sustainable transportation. Introduction to transport emissions, sources and types of emissions, transport pollution in Indian cities, monitoring and analysis of transport emissions, economic and environmental appraisal of transport activities; policies and norms for emission control, environmental policy, environmental noise pollution, transport emission modelling for sustainability.

Text Books

- Artiola, J.F., Pepper, I.L., and Brusseau, M.L. (2004) Environmental monitoring and characterization, Elsevier Academic Press.
- D. Banister and K. Button, 2003. Transport, the Environment and Sustainable Development, Spon Press, UK.
- Transportation Research Board, 1997, Toward a Sustainable Future-Sustainability and transportation, John D. Fricker and Robert K. Whitford (2004), Fundamentals of Transportation Engineering, Prentice Hall, 5th printing.

Reference Books

- Boubel, R.W., Fox, D.L., Turner, D.B. and Stern, A.C., 1994. Fundamentals of Air Pollution, 3rd Edition, Academic Press, New York.
- Seinfeld, S. N., and Pandis, J. H., 2005. Atmospheric Chemistry and Physics; from air pollution to climate change. Wiley-Inter science.

Prerequisite: NIL