

Birla Institute of Technology & Science, Pilani
Instruction Division
First Semester 2016-2017
Course Handout (Part II)

Date: 02.8.2016

In addition to Part I (General Handout for all courses appended to the Time Table), this portion gives further specific details regarding the course.

Course No. : CE G537

Course Title : Transportation Economics and Finance

Instructor In-Charge: VISHAKHA SAKHARE

Instructor: A.K. Sarkar

Course Description:

Need for economic evaluation; concept of total transport cost; fixed and variable costs, elasticity of demand, marginal costs; value of travel time, accident costs; methods of economic evaluation; taxation in road transport, user charges: fees and tolls; highway legislation; investment policies and pricing, issues in financing and subsidy policy, public private partnership (PPP) options in transport sector: BOT, BOOT, BOLT; feasibility studies, identification and sharing of risks in PPP projects, operation and management agreements.

Scope and Objective:

The objective of the course is to introduce the concepts of financial and economic evaluation of transportation projects and also to discuss the options of public private partnership (PPP) options.

Text Books:

- T1. IRC; 1993; Manual on Economic Evaluation of Highway Projects in India, Indian Roads Congress, New Delhi.
- T2. Frankena Mark W; 1979; Urban Transportation Economics; Butterworths, Canada.

Reference Books:

- R1 Kadyali L R and Lal N B; 2005; *Principles and Practices of Highway Engineering*; Khanna Publishers, Delhi.
- R2 Morlok Edward; 1978; *Transportation Engineering and Planning*; McGraw-Hill.
- R3 Cole Stuart; 2006 (Third Edition); *Applied Transport Economics*; The Chartered Institute of Logistics and Transport (UK).

Course Plan:

Lecture No.	Learning Objectives	Topics to be covered	Reference* Chap./Sec. # (Book)
1 to 3	Need for economic analysis	Basic concepts of economic analysis; Groups experiencing costs, marginal	Chapter 1 and 2, T1

		and variable costs., invisible costs.	
4 to 8	Time value of money	Future costs and present value; capital recovery factor, treatment of inflation.	Chapter-3, T1
9 to 14	Pricing Policies	Marginal and social cost pricing; congestion charges; pollution charges; Road maintenance charges; parking policy.	Chapter 4, T2
15 to 18	Financing and Subsidy Policies	Conditions for self-financing financing operation; Public transit subsidies;	Chapter 5, T2
19 to 24	Economic Evaluation	Net present Value Method, Benefit/Cost Ratio Method, Internal Rate of Return Method.	Chapter 9, R2
25 to 30	Cost Estimation Methods	Statistical cost models, Engineering Unit Cost Models	Chapter 9, R2
30 to 31	Regulatory policies	Regulation of vehicle emissions, regulation for conserving energy.	Chapter 6, T2
32 to 35	Public Private Partnership (PPP)	Definition, incentives for agencies and private service provides; socio-economic risks, financial risks.	Handout
36 to 41	Different types of partnership arrangements	Design-Bid-Build; Private Contract Fee Service; Design-Build; BOT; Long Term Lease; DBFO; BOO.	Handout

Evaluation Scheme:

EC No.	Evaluation Component	Duration	Weightage	Date, Time & Venue	Nature of Component
1	Mid-term test	90 min	25	<TEST_1>	Open book examination
2	Comprehensive	3 hours	35	<TEST_C>	Close book examination
3	Assignments/ Seminars/ term papers		40		Home assignments, use of softwares, seminars, term papers, projects, Group discussions

Chamber Consultation Hour: *To be announced in the class*

Notices: *Watch Civil Engineering Department Notice Board*

Make-up Policy:

1. Make-up will be granted on a case by case basis only on genuine reasons.
2. For medical cases, a certificate from the concerned physician of the Medical Centre must be produced.

Instructor-in-charge