

TRANSPORT ECONOMICS AND PROJECT APPRAISAL

Offering Branches	CE	Credits:	3
Course Category:	HONOURS	Lecture-Tutorial-Practical:	3-0-0
Course Type:	Theory	Continuous Evaluation:	30
Prerequisites:	20CE3502 - Highway Engineering 20CE4705C – Urban Transportation Planning	Semester End Evaluation:	70
		Total Marks:	100

Course Outcomes

Upon successful completion of the course, the student will be able to:

CO1	Differentiate macro and microeconomic principles.	K2
CO2	Estimate benefits and costs of transport projects and carry out economic analysis.	K4
CO3	Evaluate transport projects.	K4
CO4	Estimate the life cycle cost of transport projects.	K4
CO5	Appraise various financial models for the development of transport infrastructure.	K4

Contribution of Course Outcomes towards achievement of Program Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	2	2		2		2			2		2	2	
CO2	2	2	2		2		2			2		2	2	
CO3	3	3	3		3		3			3		3	3	
CO4	2	2	2		2		3			3		3	2	
CO5	2	2	2		2		3			3		3	2	
Avg.	2	2	2		2		2			2		2	2	

1- Low

2-Medium

3-High

Course Content

UNIT-1	Transport Economics: Population, Review of Engineering Economics and Microeconomics, Welfare Theory and Equilibrium Conditions, Goals and Objectives, Principles of Economic Analysis.	CO1
UNIT-2	Methods of Economic Analysis: Discounted Cash Flows: Analysis of User Costs and Benefits, Fixed, variable, marginal, and average cost, opportunity cost, shadow price, the value of time, social cost of transportation, congestion as well as pollution cost.	CO2
UNIT-3	System Selection and Evaluation: Framework of Evaluation, Measures of effectiveness of economic analysis, Other Evaluation Procedures - Traditional Economic Analysis, the concept of consumer surplus, equity issues in investment.	CO3
UNIT-4	Life Cycle Cost Analysis: Factors considered for Life Cycle Cost Analysis; data requirements for highway project feasibility analysis, the establishment of technical/ economic/ financial feasibility of a highway project, social benefits.	CO4
UNIT-5	Financial Analysis – Private Sector Participation: BOT, BOOT, BOLT Projects, Project Planning, Project System Management, Project Implementation, financial analysis in the public and private sector, revenue generation enhancement techniques, Budgetary and Control.	CO5

Learning Resources

Text Books	<ol style="list-style-type: none"> Economic Analysis for Transportation: A Guide for Decision Makers, Robley E. Winfrey, International Textbook Co., Northwestern University, 1971 (Digitized in 2011). Theory and Applications of Economics in Highway and Transport Planning, Maitri, V., Sarkar, P.K., Standard Publishers Distributors, 2010, First Edition. Transport Economics (Critical Concepts in Economics), Hensher, D.A., Routledge 2011, First Edition.
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Reference Books	<ol style="list-style-type: none">1. Manual on Economic Evaluation of Highway Projects in India, IRC: SP30, Indian Roads Congress, New Delhi, 2019.2. Transportation Planning: Principles, Practices and Policies, Sarkar, P.K., Maitri, V., Joshi, G.J., PHI Learning, 2017, Second Edition.3. Urban Transport: Planning and Management, Jain A.K., APH Publishing Corporation, 2008.
e- Resources & other digital material	<ol style="list-style-type: none">1. https://dspace.mit.edu/bitstream/handle/1721.1/107706/11-540j-fall-2006/contents/lecture-notes/index.htm2. https://nptel.ac.in/courses/105/107/105107067