

GUJARAT TECHNOLOGICAL UNIVERSITY

CIVIL (TRANSPORTATION ENGINEERING) (13) ECONOMIC EVALUATION OF TRANSPORTATION PROJECTS

SUBJECT CODE: 2721307

M.E. 2nd SEMESTER

Type of course : Core Course

Prerequisite : Nil

Rationale :

Expanding investment in Infrastructure can play an important counter cyclical role. Indian's rate of urbanization is very high. There is need for sound infrastructure becomes paramount. The aim of a good transportation system is to provide a efficient, quick and safe transportation to its users. And this is counted as the benefit of transportation. The subject includes the study of laws of demand and supply. It also includes the study of various methods of estimating National Income. In the study, various methods of economic evaluations are covered. It also discusses the present road scenario, its future growth and financing strategies for highway projects with reference to Indian context.

Teaching and Examination Scheme:

Teaching Scheme			Credits C	Examination Marks						Total Mar ks
L	T	P		Theory Marks		Practical Marks				
			ESE (E)	PA (M)	ESE(V)		PA (I)			
					ESE	OEP	PA	RP		
3	2 [#]	0	4	70	30	30	0	10	10	150

Content:

Sr.No.	Topics	Teaching Hrs.	Module Weightage
1	Introductions – Demand and Utility.	3	5%
2	Laws of Demand, Utility analysis, Ordinal analysis, Income effect, Price effect, Demand curves, Elasticity of supply.	3	10%
3	National Income, GNP, GDP, Methods of Estimating National Income.	3	10%
4	Project Appraisal – Total Cost, Principles of analysis, Road Users Cost – Factors, Benefits.	5	10%
5	Economic Evaluation – Different Methods, Sensitivity analysis.	5	20%
6	Maintenance Cost – Factors, Methods.	5	5%
7	Traffic System Evaluation.	3	5%
8	Financing Mechanism - Taxes, Tolls, Private Financing.	5	10%
9	Transport Cost – Types, Factors, Cost analysis for Mass Transit System,	5	5%
10	Pricing – Marginal Cost Pricing, National Policy, Fares, Subsidy.	3	10%
11	Economic analysis of transportation projects ownership and financing of transport, economic function of transportation road user and transportation costs, highway finance and taxation, case studies of analysis and evaluation of transportation projects.	5	10%

References:

1. D.M.Mithani, Economic Analysis – (Himalaya)
2. IRC– 30, Manual on Economic Evaluation of Highways In India.
3. Fair and Williams, Economics of Transportation, Harper and Brothers, Publishers, New York, 1959.
4. R.Winfrey, Economic Analysis for Highway International Textbook Co., Pennsylvania. USA,1969
5. G.Harrl Clell, A Manual for the Economic Appraisal of Transport Projects, World Bank Report, Washington D.C.1980.

Group work:

Prepare brief report on any recent case study of economic evaluation of transportation project. Give presentation on it with group discussion.

Course Outcomes:

1. To give basic idea of economic analysis and related terms.
2. To make the students aware of using different methods for economic evaluation.
3. To make the students conversant with economic and financial analysis of transportation projects.

List of Tutorials:

1. Problems based on demand and supply, elasticity analysis.
2. Problems based on estimation of National Income.
3. Problems based on different methods for economic evaluation, like B/C ratio, NPV, IRR etc.
4. Problems based on deriving transport cost.
5. Cost analysis for mass transit system.
6. Problems based on toll fixation.
7. Computer applications for the above problems.

Review Presentation (RP): The concerned faculty member shall provide the list of peer reviewed Journals and Tier-I and Tier-II Conferences relating to the subject (or relating to the area of thesis for seminar) to the students in the beginning of the semester. The same list will be uploaded on GTU website during the first two weeks of the start of the semester. Every student or a group of students shall critically study 2 papers, integrate the details and make presentation in the last two weeks of the semester. The GTU marks entry portal will allow entry of marks only after uploading of the best 3 presentations. A unique id number will be generated only after uploading the presentations. Thereafter the entry of marks will be allowed. The best 3 presentations of each college will be uploaded on GTU website