

Course Number and Name												
BBA007 & Engineering Economics and Cost Analysis												
Credits and Contact Hours												
3 & 45												
Course Coordinator's Name												
Dr.R.Ramamorthy												
Text Books and References												
Text Books:												
1. Panneer Selvam, R, Engineering Economics, Prentice Hall of India Ltd, New Delhi, 2001.												
References:												
1. Chan S.Park, Contemporary Engineering Economics, Prentice Hall of India, 2002.												
2. Donald.G. Newman, Jerome.P.Lavelle, "Engineering Economics and analysis" Engg. Press, Texas, 2002												
3. Degarmo, E.P., Sullivan, W.G and Canada, J.R, Engineering Economy, Macmillan, New York, 1984.												
4. Grant.E.L., Ireson.W.G., and Leavenworth, R.S, Principles of Engineering Economy, Ronald Press, New York,1976.												
Smith, G.W., Engineering Economy, Iowa State Press, Iowa, 1973												
Course Description												
To know about engineering economics and cost analysis.												
Prerequisites						Co-requisites						
Professional Course						Nil						
required, elective, or selected elective (as per Table 5-1)												
Required												
Course Outcomes (COs)												
CO1: To learn about the introduction to economics												
CO2: To learn about the value engineering												
CO3: To learn about the cash flow												
CO4: To learn about the Replacement and Maintenance analysis												
CO5: To learn about the depreciation and Evaluation of public alternatives												
CO6: To learn about the Break-even analysis												
Student Outcomes (SOs) from Criterion 3 covered by this Course												
COs/SOs	a	b	c	d	e	f	g	h	I	j	k	l
CO1			H				M				M	
CO2					H			M				H
CO3		H				M			M			
CO4							H					M

CO5	M								H			
CO6				M				M			H	

List of Topics Covered

UNIT I INTRODUCTION TO ECONOMICS 8

Introduction to Economics- Flow in an economy, Law of supply and demand, Concept of Engineering Economics – Engineering efficiency, Economic efficiency, Scope of engineering economics- Element of costs, Marginal cost, Marginal Revenue, Sunk cost, Opportunity cost, Break-even analysis- V ratio, Elementary economic Analysis – Material selection for product Design selection for a product, Process planning.

UNIT II VALUE ENGINEERING 10

Make or buy decision, Value engineering – Function, aims, Value engineering procedure. Interest formulae and their applications –Time value of money, Single payment compound amount factor, Single payment present worth factor, Equal payment series sinking fund factor, Equal payment series payment Present worth factor- equal payment series capital recovery factor-Uniform gradient series annual equivalent factor, Effective interest rate, Examples in all the methods.

UNIT III CASH FLOW 9

Methods of comparison of alternatives – present worth method (Revenue dominated cash flow diagram), Future worth method (Revenue dominated cash flow diagram, cost dominated cash flow diagram), Annual equivalent method (Revenue dominated cash flow diagram, cost dominated cash flow diagram), rate of return method, Examples in all the methods.

UNIT IV REPLACEMENT AND MAINTENANCE ANALYSIS 9

Replacement and Maintenance analysis – Types of maintenance, types of replacement problem, determination of economic life of an asset, Replacement of an asset with a new asset – capital recovery with return and concept of challenger and defender, Simple probabilistic model for items which fail completely.

UNIT V DEPRECIATION 9

Depreciation- Introduction, Straight line method of depreciation, declining balance method of depreciation-Sum of the years digits method of depreciation, sinking fund method of depreciation/ Annuity method of depreciation, service output method of depreciation-Evaluation of public alternatives- introduction, Examples, Inflation adjusted decisions – procedure to adjust inflation, Examples on comparison of alternatives and determination of economic life of asset.