

Somaiya Vidyavihar University
K J Somaiya College of Engineering, Mumbai -77
(A constituent College of Somaiya Vidyavihar University)

Course Code	Course Title							
116U06G506	Engineering Economics and Financial Management							
	TH		P		TUT		Total	
Teaching Scheme(Hrs.)	02		--		--		02	
Credits Assigned	02		--		--		02	
Examination Scheme	Marks							
	CA		ESE	TW	O	P	P&O	Total
	ISE	IA						
	30	20	--	--	--	-	--	50

Course prerequisite: Nil

Course Objectives:

Objective of the course is to enable students to understand the fundamental economic concepts applicable to engineering and to learn the techniques of incorporating inflation factor in economic decision making. Course is focused on basics of economics, elementary economic analysis and replacement and maintenance analysis. Course also gives introductory knowledge on depreciation and inflation adjusted decisions which will be used for analysis of engineering economics.

Course Outcomes:

At the end of successful completion of the course the student will be able to

CO1: know the basics of economics related to engineering and take economically sound decisions.

CO2: Apply laws of economics and cost analysis in current scenario.

CO3: Understand basic concepts of the cash flow.

CO4: Understand the economics for replacement of a product and machineries in industries.

CO5: Use recent techniques for depreciation analysis

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Module No.	Unit No.	Topics	Hrs.	CO
1		Introduction to Economics	04	CO1
		Introduction to Economics, Law of supply and demand, Types of Efficiency- Engineering and Economic, Element of costs, Marginal cost, Marginal Revenue, Sunk cost, Opportunity cost, Break-even analysis, P – V ratio, Elementary economic Analysis - Material selection for a product, Substitution of raw material, Design selection for a product, Process planning, Process modification.		
2		Financial Management	08	CO2
		Financial planning: Introduction, Budget, types of budgets, advantages of budgeting Time Value of Money: Interest formulae and their applications, 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.		
3		Cash Flow	06	CO3
		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.		
4		Replacement and Maintenance Analysis	06	CO4
		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.		
5		Depreciation	06	CO5
		Depreciation – Introduction, Straight line method, – Declining balance method, Sum of the years digits method, Sinking fund method, Annuity method, Service output method, 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.		
Total			30	

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Recommended Books:

Sr. No.	Name/s of Author/s	Title of Book	Name of Publisher with Country	Edition with Year of Publication
1.	Panneer Selvam, R	<i>Engineering Economics</i>	Prentice Hall of India Ltd, New Delhi	2001
2.	Suma Damodaran	<i>Managerial economics</i>	Oxford university press	2006
3.	Chan S.Park	<i>Contemporary Engineering Economics</i>	Prentice Hall of India Ltd, New Delhi	2002
4.	Truett & Truett	<i>Managerial economics- Analysis, problems & cases</i>	Wiley India	Eighth Edition, 2004
5.	James L. Riggs; David D. Bedworth Sabah U. Randhawa	<i>Engineering Economics</i>	McGraw Hill Education (India) Pvt. Ltd, Chennai	Fourth Edition, 2004