ECO111505	HSSM – IV (Economics for Engineers)	L	T	P	C
Version 1.0		3	0	0	3
Pre-requisites/Exposure	Engineering Mathematics – I and Engineering Mathematics – II				
Co-requisites	--				

Course Objectives

1. Prepare engineering students to function in the business and management side of professional engineering practice.
2. Help students in general to analyse, understand and explain the past, present economic conditions of the country.
3. To forecast the future course of changes and development through their knowledge of policies and programmes set by the governments and other development agencies.
4. Evaluate the economic theories, cost concepts and pricing policies.
5. Apply the concepts of financial management for project appraisal.

Course Outcomes

On completion of this course, the students will be able to

CO1. **Understand** the basic economic concepts and make economic analyses in the decision making.

CO2. **Apply** principals of economics to analyze the behaviour of consumers and producers in a well-functioning economy and also in case of market failures.

CO3. **Develop** the ability to account for time value of money using factors and formulas, estimate annual and future worth comparisons for cash flows.

CO4. **Understand** how factor market works, identify the manpower and resources management, need of credit/finance for initiating and accelerating projects.

Catalog Description

This paper introduces students to the terminology and analytic principles used in microeconomics, which is broadly defined as the study of markets, and to the application of these conceptual tools to several policy issues. As the design and manufacturing process become more complex, an engineer is required to make decisions that involve money more than ever before. The competent and successful engineer at present must have an improved understanding of the principles of economics. This paper is concerned the analysis of individual behaviors and market structure, and systematic evaluation of the benefits and costs of projects involving engineering design and analysis.

Course Content

Unit I: Basic Concepts of Economics: 5 lecture hours

Introduction to the Literature of Micro-economic scentering around Decision Making at Individual Level. Some Fundamental Concepts: Maximization, Equilibrium and Efficiency.

Unit II: Theories of Economics: 12 lecture hours

The Theory of Consumer Choice and Demand, the Theory of Supply, market equilibrium, market structure, market failure and environmental issues, Game Theory, concept of yield and

Theories of Term Structure, the Theory of Asset Pricing, decision-making under uncertainty: risk and insurance.

Unit III: Sustainability Study of a Project: 10 lecture hours
Budget plan, estimation of the project cost, prices, fees and cost recovery, financing of recurrent costs, sustainability of the activities generated by the project.

Unit IV: Economic Feasibility Study: 12 lecture hours
Problem of pricing under oligopoly, problem of market stagnation, problem of volatility in open economy, problem of global meltdown, problem of financing a project.

Unit V: Project Report: 6 lecture hours
Facets of project viability – commercial, technical, financial, outline of a model project report, a real life case study.

Text Books:

1. R. Panneersalvam, *Engineering Economics*, 2nd Ed., Prentice Hall of India, 2014.
2. James Riggs, *Engineering Economics*, 4th Ed., McGraw Hill Education, 2004.

Reference Books:

1. Donald G. Newnan, Ted G. Eschenbach and Jerome P. Lavelle, *Engineering Economic Analysis*, 13th Ed., Oxford University Press, 2017.
2. Chan S. Park, *Contemporary Engineering Economics*, 6th Ed., Pearson, 2015.

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination
Examination Scheme:

Components	Mid Term	Attendance	Class Assessment	End Term
Weightage (%)	20	10	30	40

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	**Understand** the basic economic concepts and make economic analyses in the decision making.	**PO2, PO3, PO11, PSO3**
CO2	**Apply** principals of economics to analyze the behaviour of consumers and producers in a well-functioning economy and also in case of market failures.	**PO2, PO4, PO11, PSO1**
CO3	**Develop** the ability to account for time value of money using factors and formulas, estimate annual and future worth comparisons for cash flows.	**PO2, PO3, PO4, PSO1**

1=weakly mapped; 2=moderately mapped: