

## HSS204: Economics for Engineers

Programme: B.Tech.  
Course: HSS/Core

Year: II  
Credits: 3

Semester: IV  
Hours: 40

### Course Context and Overview (100 words):

The course seeks to acquaint the students with standard concepts of micro as well as macro-economics specifically dealing with demand and supply analysis, theory of production and cost analysis, investment analysis, market structures and macroeconomic issues that they are likely to be useful in their futuristic job. It will also create awareness about the status of the current economic indicators in the Indian economy. The emphasis will be on thinking like an economist and applying the economic concepts to analyse real-life situations.

**Prerequisite Courses:** Not required

### Course Outcomes (COs):

| <b>On completion of this course, the students will have the ability to:</b>   |
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| <b>CO1:</b> analyse the basic principles and methodology in economics, demand and supply aspects, production function and forms of business organisation, types of cost and revenue and structure of markets.                   |
| <b>CO2:</b> assess the costs and benefits of engineering investments.   |
| <b>CO3:</b> able to analyse the macro-economic issues and their implications on decision making namely, national income, business cycle, unemployment, inflation, Government taxation, Government expenditure, monetary policy. |
| <b>CO4:</b> develop the economic reasoning to understand economic issues in day-to-day life.  |

### Course Topics:

| Topics   | Lecture Hours |
|--|---------------|
| <b>UNIT - I</b>  |               |
| <b>1. Introduction to Micro Economics</b>                  |               |
| 1.1 Meaning, Logic of economics, Economic systems.         | 6             |
| 1.2 Basic economic problems, Production possibility curve. |               |
| 1.3 Importance of economics in engineering.                |               |
| <b>UNIT - II</b>   |               |
| <b>2. Demand &amp; Supply Analysis</b>                     |               |
| 2.1 Determinants of demand, Law of demand                  | 9             |

|   |  |   |
|---|--|---|
| 2.2 Elasticity of demand - Price, Income and Cross elasticity.  |  |   |
| 2.3 Supply - Factors affecting supply, Law of supply, Market equilibrium.   |  |   |
| <b>UNIT - III</b>   |  |   |
| <b>3. Production Analysis</b>   |  |   |
| 3.1 Production function and technological change.   |  | 5 |
| 3.2 Law of diminishing returns and Law of returns to scale.   |  |   |
| 3.2 Types of business organizations (firms).  |  |   |
| <b>UNIT - IV</b>  |  |   |
| <b>4. Cost &amp; Investment Analysis</b>  |  |   |
| 4.1 Cost & Revenue concepts, Cost-output relationship in the short run and long run.  |  | 9 |
| 4.2 ICT revolution & cost, Break even analysis.   |  |   |
| 4.3 Investment Analysis for a project – NPV, ROI, IRR, Payback Period, Depreciation, Time value of money.   |  |   |
| <b>UNIT - IV</b>  |  |   |
| <b>5. Market Structure</b>  |  |   |
| 5.1 Perfect competition, Monopoly, Monopolistic, Oligopoly and duopoly.   |  | 6 |
| 5.2 Technological change and imperfect competition, Labour market.  |  |   |
| 5.3 Market failure & externalities.   |  |   |
| <b>UNIT - IV</b>  |  |   |
| <b>6. Macro Economics</b>   |  |   |
| 6.1 Circular flow of income.  |  | 5 |
| 6.2 Basic macro-economic concepts - National income, Business cycle, Inflation, Unemployment, Fiscal policy - Government taxation, Government expenditure, Monetary policy. |  |   |
| 6.3 Indian economy: An overview.  |  |   |

### Textbook/References:

#### Text Books:

1. Dwivedi, D.N, *Microeconomics: Theory and applications*, New Delhi, Pearson Education, 2006.
2. Misra, S. K. & V. K. Puri, *Indian Economy*, 34<sup>th</sup> edition, Mumbai, Himalaya Publishing House, 2016.
3. Mukherjee, Sampat, Mukherjee Mallinath, Ghose Amitava, *Microeconomics*, New Delhi, PHI Learning Private Limited, 2003.
4. Panneerselvam, R, *Engineering Economics*, 2<sup>nd</sup> edition, New Delhi, PHI Learning Private Limited, 2014.

**Reference Books:**

1. Lipsey, R.G. and K.A. Chrystal, *Principles of Economics*, 12th Edition, Oxford, Oxford University Press, 1999.
2. Mankiw, N. Gregory, *Economics: Principles and Applications*, 4th edition, New Delhi, Cengage Learning India Private Limited, 2007.
3. Samuelson, Paul A, Nordhaus, Anindya Sen & Sudip Chaudhuri, *Economics*, 19<sup>th</sup> Edition, New Delhi, Tata McGraw Hill Publishing Company Limited, 2010.

**Additional Resources:** Will be updated later.

**Evaluation Methods:**

| <b>Item</b>       | <b>Weightage (%)</b> |
|-------------------|----------------------|
| Assignment/Quiz   | 20                   |
| Midterm           | 30                   |
| Final Examination | 50                   |

**Prepared By:**

**Last Update:** April, 2017