

Jyoti Nivas College Autonomous
ECONOMICS
V SEMESTER, PAPER - VI (B)
MATHEMATICAL METHODS IN ECONOMICS(Elective)

TOTAL HOURS: 60

OBJECTIVES

- To develop basic skills in mathematical economics.
- To develop analytical, reasoning and graphical presentation skills.
- To develop critical thinking & problem-solving skills.
- To provide a mathematical foundation for students in economics.

LEARNING OUTCOMES

- To acquire basic mathematical skills used in economics and to be able to apply basic mathematics to specific areas of study in economics.
- To be able to formulate and solve problems.
- To be able to apply differentiation and perform basic integration needed in economics.
- To use Lagrangian multiplier method to solve constrained optimisation.
- To be able to convey information graphically and logically.

MODULE-1 -INTRODUCTION - REVIEW OF BASIC CONCEPTS10 HRS

Mathematical economics- meaning & importance.(1) Basic concepts- Number system, algebra, functions & graphs (constant, linear, quadratic, cubic, exponential & logarithmic)(2). Solution of Linear & quadratic equations (Formula, factorization), system of linear equations (Elimination method)(2). Application in Economics- demand, supply- graph and slope (2). Market Equilibrium-effect of taxes and subsidies on equilibrium quantity and prices (2). Simple linear macro models. Interest compounding and exponential functions(1).

MODULE – 2- DIFFERENTIAL CALCULUS – I

10 HRS

Simple rules of differentiation-Constant function, power, addition, subtraction, multiplication & division(1). Application of differentiation & partial differentiation in Economics(2)-concept of slope- calculation of Marginal Cost, Marginal Revenue, Marginal Utility. Partial Derivatives- Marginal Utility and Marginal Product(2). Averages - cost & revenue(1). Elasticity- theorems. Types- Price, Income and Cross elasticity (substitutes & complements)(2). Stability of Equilibrium- Marshall & Walras.(2)

MODULE – 3- DIFFERENTIAL CALCULUS - II

11 HRS

Maxima and Minima of Functions-single variable; convexity & concavity(1). Production- Total product, Average and Marginal Product & law of variable proportions;(2) Homogenous production function, Cobb-Douglas Production Function and Euler's theorem.(2) Cost: Average Cost, Marginal Cost, relation between AC and MC. AC & MC-Cost minimization-single variable.(3)
Revenue-Total Revenue, Average Revenue, Marginal Revenue, Revenue curves under perfect & imperfect competition. Relation between AR, MR and price elasticity(2), Revenue Maximization-single output.(1)

MODULE – 4 -MAXIMIZATION OF PROFITS 10 HRS

Maximization of profits- single variable & two variables.(1) Markets: Derivation of necessary & sufficient condition of a firm's equilibrium under Perfect Competition & Monopoly(2). Numerical problems on profit maximizing output, price under perfect competition, monopoly & price discrimination (5). Effect of tax on monopolist. (1)

MODULE – 5 - CONSTRAINED OPTIMIZATION-CONSUMER'S EQUILIBRIUM 09 HRS

Necessary and Sufficient conditions for consumer equilibrium(3); numerical problems on utility maximization(3); Derivation of ordinary and compensated Demand functions.(2).

MODULE – 6 - INTEGRAL CALCULUS & MATRICES 10 HRS

Integration-Definite integral; Simple rules of integration(2)-calculation of TR and TC from their respective MR and MC; Consumer's and Producer's surplus.(3)

Types of Matrices- Elementary operations on Matrices(2). Inverse matrix, Method of solving simultaneous equations using matrices(2). Determinants and their uses in solving simultaneous equation.(2)

PRACTICAL COMPONENT

1. Problem solving.
2. Problems from competitive exams.
3. Case study.

BOOKS FOR REFERENCE

1. Agarwal, D.R. Quantitative Methods: Mathematics and statistics, Vrinda Publications, 2004.
2. Bose, D.-Introduction to Mathematical Methods, 3rd Edition, Himalaya Publications, 2004.
3. Dowling, Edward T- Introduction to Mathematical Economics, Schaum's outline series McGraw-Hill, Inc, 1980.
4. Koutsoyiannis, A- Modern Microeconomics, 1979, Macmillan Press, 1979.
5. Mehta & Madhani- Elementary Mathematics and Economics, 2010, Laxminarayan Agarwal Publications, 2010.
6. Veerachamy, R. - Quantitative Methods for Economists, New Age International Publishers, 2002.
7. Weber, Jean. Mathematical Analysis for Business and Economics.

ADDITIONAL READING LIST

1. Allen, R.G.D- Mathematical Analysis for Economists, 1974, Macmillan Press.
2. Chiang, Alpha- Fundamental methods of mathematical economics, McGraw-Hill International Edition.

Jyoti Nivas College Autonomous
ECONOMICS
V SEMESTER, PAPER VI (C)
ENTREPRENEURSHIP DEVELOPMENT PROGRAMME(Elective)

TOTAL HOURS: 60

OBJECTIVES

- To empower the students with knowledge of entrepreneurship skills.
- To acquaint the student with the procedures for starting a venture.
- To encourage the students to set up their own enterprises.
- To apply the principles of entrepreneurial competence in business.

LEARNING OUTCOMES

- To scan the environment for business opportunities and ideas and apply SWOT analysis.
- To apply the knowledge of product and its various components and market research techniques for a successful business venture.
- To write a comprehensive business plan using the understanding of feasibility analysis.
- To understand the various rules, regulations and guidelines to start a small scale industry and various financial institutions supporting MSME.

MODULE -1 – INTRODUCTION TO ENTREPRENEURSHIP 12 HRS

Meaning and importance of entrepreneur[2], Entrepreneurship - Factors influencing entrepreneurship[2], Pros and Cons of being an entrepreneur[2] , Women entrepreneurs-problems and promotion[2], Types of Entrepreneurs[1] , Characteristics of a successful entrepreneur [1], Competency requirement for entrepreneurs - Awareness of self competency and its development[1], Intrapreneurship- meaning and role[1].

MODULE- 2 - PRODUCT SELECTION AND MARKET RESEARCH 10 HRS

Product - Definition, types[2], criteria in the selection of a product[3].

Market research- definition, techniques[3].

SWOT Analysis- definition, scope, importance[2].

MODULE- 3 - MARKETING STRATEGY

08 HRS

Branding- meaning, benefits[3]; Packaging-meaning and importance[2]; Advertisement-meaning types, importance[2] ; Labeling[concept][1]

MODULE-4 – BUSINESS ENTERPRISE14 HRS

Business enterprise – definition, steps involved in starting a business venture –formalities, licensing and registration procedures [2]. Financial, technical and social feasibility of the project [2].

MSME[Micro, medium and small enterprises]- definition, role played by SSI in the development of the Indian economy[3] - Problems faced by SSI [1] and the steps taken to solve the problems - Policies governing SSI's[2].

Sickness in SSI's- definition of a sick industry - Causes of industrial sickness- Preventive and remedial measures for sick industries[3]. Industrial estates – role and types[1].

MODULE 5 – BUSINESS PLAN

08 HRS

Business Plan- Definition, importance[1]- Preparing Business Plan - Financial aspects of the Business Plan -Marketing aspects of the Business Plan - Human Resource aspects of the Business Plan - Technical aspects of the Business Plan - Social aspects of the Business Plan[6], Problems in writing a business plan[1].

MODULE-6 – FINANCE AND ENTERPRENURSHIP

08 HRS

Implementation of the project - Financial assistance through SFC's, SIDBI, Commercial banks, KSIDC, KSSIC, IFCI[4].

Non financial assistance from DIC, SISI, EDI, SIDO, AWAKE, TCO, TECKSOK, KVIC[4].

PRACTICAL COMPONENT

1. Role of Women entrepreneurs.
2. Writing a Business Plan for starting a venture.
3. Success stories of Entrepreneurs.
4. Identification of business opportunities.

BOOKS FOR REFERENCE

1. Desai, V. - Dynamics of Entrepreneurial Development and Management, Himalaya Publishing House, 2013.
2. Gupta, Sunil - Entrepreneurial Development, the ICFAI University Press, 2004.
3. Dr. Khanka, S.S.- Entrepreneurial Development, S.Chand Publication,2006.
4. Dr. Vijayashree, P.T; Alagammai, M.- Entrepreneurship and Small Business Management, Margham Publications, 2016.

ADDITIONAL READING LIST

1. Roy, Rajeev- Entrepreneurship, Oxford University Press, 2008.
2. Bhide, A.V.- The Origin and Evolution of New Business, Oxford University Press, 2000.