

## 7.1. ADVANCED MICROECONOMIC ANALYSIS

**Course Objective:** The course will cover advanced topics in micro economics where, students will learn about utility and production functions, market models, game theory, and welfare economics.

### Course Learning Outcomes:

Upon completion of this course, student shall be able to achieve the following outcomes:

- CO1:** Explain advanced concepts and theories related to consumer behaviour , Indifference Curves , risk and uncertainty
- CO2:** Analyse advanced concepts and theories of production and distinguish between different production functions
- CO3:** Explain different collusive and non-collusive market models.
- CO4:** Examine advanced concepts and theories related to distribution
- CO5:** Analyse various concepts and theories of equilibrium and welfare.

### Unit 1: Consumers Behaviour

- Utility Functions: Direct and Indirect
- Indifference Curves Analysis: Income and substitution effects, Slutsky Theorem, Hicksian Compensated Demand Curve
- Revealed Preference Theory
- Risk and Inter-temporal choice; Decision making under uncertainty: Expected Utility Theory and Prospective Utility Theory in brief

### Unit 2: Production

- Production Functions: Cobb-Douglas, CES, Leontief and VES production functions
- Isoquants, Ridge Lines, Isocosts , Least cost combination of inputs
- Technological Progress and the Production function
- Modern Theory of Costs: Saucer shaped , L-shaped and Inverted 'J' shaped cost curves, ; Multi-production firm.

### Unit 3: Market

- Non-collusive Oligopoly Market Models: Cournot Model, Chamberlin Models
- Collusive Oligopoly Market Models: Cartels, Mergers, Price Leadership
- Basic Game Theory: Prisoners Dilemma and Non-Cooperative Games
- Managerial Firm Model: Baumol's Sales Revenue Maximization and Marris' Growth Maximisation

### Unit 4: Distribution

- Pricing of Factors under Perfect Competition Market
- Pricing of Factors under Imperfect Competition Market
- Euler's Theorem and Product Exhaustion Problem; Hicks-Samuelson Solution to Product Exhaustion Problem in brief
- Pricing of Fixed Factors; Backward Bending Labour Supply Curve, Efficiency Wage Model.

### **Unit 5: General Equilibrium and Welfare Economics**

- Concepts of Partial and General Equilibriums; Pareto Optimality; Market Failures and Externalities
- Fundamental Theorem of Welfare: Social Welfare Function, Kaldor-Hicks Compensation Principle
- Theory of Second Best: Arrow's Impossibility Theorem in brief
- Adverse Selection and Moral Hazard.

### **References:**

1. Sen, A. (1999), *Microeconomics: Theory and Applications*, Oxford University Press, New Delhi. Stigler, G. (1996), *Theory of Price*, (4th Edition), Prentice hall of India, New Delhi.
2. Varian, H. (2000), *Microeconomic Analysis*, W.W. Norton, New York.
3. Mohan, H. (2000), *Microeconomic Analysis*, W. W. Norton, New York.
4. Koutsoyiannis, A. (1979), *Modern Microeconomics*, Macmillan, New Delhi.
5. H.L Ahuja: *Principles of Microeconomics*, S.Chand Publication, New Delhi
6. C. Snyder and W. Nicholson (2010) *Fundamentals of Microeconomics*, Cengage Learning (India), 2010.
7. B. Douglas Bernheim and Michael D. Whinston. (2009) *Microeconomics*, Tata McGrawHill (India),
8. Open-Source Online Materials & Videos: IGNOU, e-PG Pathasala, SWAYM, Khan Academy etc.

### **Suggested Activities:**

Unit 1: Survey to understand consumer preferences and attitudes towards risk, and analyse the results using expected utility theory.

Unit 2: Competitions in diagrammatic explanation of production functions and cost curves

Unit 3: Seminars on different market models

Unit 4: Quiz testing the conceptual understanding of the students relating to pricing of factors.

Unit 5: A group debate on the benefits and drawbacks of government intervention in markets, and analyze the arguments using the concepts of market failures, externalities, and Pareto optimality.

## 7.1 . ADVANCED MACROECONOMIC ANALYSIS

**Course Objective:** This course aims to equip students with knowledge and skills to understand advanced macroeconomic models, consumption and investment theories to analyse their significance in macroeconomic issues and policy responses.

### **Course Learning Outcomes:**

Upon completion of this course, the student shall be able to achieve the following outcomes:

- CO1:** Compare and contrast different macroeconomic models, consumption theories and explain their significance.
- CO2:** Explain various theories of investment and interrelation between inflation interest and investment.
- CO3:** Analyse different post-Keynesian approaches to demand for money
- CO4:** Critically examine the Neo-classical and Keynesian Synthesis
- CO5:** Evaluate the Macroeconomic Crises and related Policy Issues.

### **Unit-1: Macro Economy Models and Consumption**

- Micro-foundations of Macroeconomics
- Classical vs Keynesians; New-Classical Theory and New-Keynesians Theory
- Kuznets 's Consumption Puzzle
- Consumption Expenditure Models: Fisher 's Theory of Optimal Inter-temporal Choice, Rational Expectations and Random-walk

### **Unit-2: Investment**

- Theories of Investment: Neo-classical Theory, Keynes Theory, Tobin's 'Q' Theory Finance
- Cost of Capital: Concept, Importance and Components
- Interrelations between Inflation, Interest Rate and Investment
- Policies affecting Investment.

### **Unit-3: Money and Inflation**

- Post-Keynesian approaches to Demand for Money: Patinkin's Real Balance Effect, Baumol Inventory Model, Tobin's Speculative Model, Friedman's Modern Quantity Theory in brief
- Inflation-Unemployment Debate: Theory of Adaptive Expectations, Expectation-Augmented Phillip's Curve, Rational Expectation Model in brief
- Monetary Policy: Objectives, Instruments and Applications
- Lucas' Supply Function; Policy Ineffective Theorem and Lucas' Critique.

### **Unit-4: Neo-classical and Keynesian Synthesis: IS-LM**

- Neo-classical and Keynesian views on Determination and Effects of Interest Rates
- Neo-classical and Keynesian Synthesis: IS-LM Basic Model

- Extension of IS-LM model with government sector, models with labour market and flexible prices
- Fiscal and Monetary Policy in IS-LM Model; Fiscal Policy and Crowding out Effect.

#### **Unit-5: Macroeconomic Policy and Crises**

- Macroeconomic Policy: Issues, Target Indicators and Instruments
- Important Macroeconomic Policies: Gradualism vs Shock Therapy Economic Policy, Seingorage Policy and Barro-Ricardo Hypothesis Political Economy of Stabilisation and Adjustment
- Analysis of Economic Crises and Solutions: East Asian Crisis, Global Financial Crises, Sovereign Debt Crisis, Bank Failures, COVID-19 Crisis.

#### **References:**

1. D'souza Errol, *Macroeconomics*. Person Publication, New Delhi, 2008.
2. David Romer, *Advanced Macroeconomics. 4th edition*, McGraw-Hill Irwin, 2012.
3. Brian Snowdon and Howard R. Vane, *Modern Macroeconomics: It's Origins, Development and Current State*. Edward Elgar, UK, 2005.
4. Mankiw, N. Gregory, *Principals of Macroeconomics*. Seventh edition, Cengage Learning, 2014.
5. Richard T Froyen, *Macroeconomics - Theories and Policies*, Pearson 2013
6. H.L Ahuja : *Macroeconomics: Theory and Policy Advanced Analysis*, S Chand Publication, New Delhi
7. Open Source Online Materials & Videos: IGNOU, e-PG Pathasala, SWAYM, Khan Academy etc.

#### **Suggested Activities:**

Unit 1: Debate on Classical and Keynesian schools of thought.

Unit 2: Quiz on theories and concepts of investment

Unit 3: Poster presentation on post-Keynesian developments on money

Unit 4: Class room test on shifts in IS-LM curves

Unit 5: Seminars on different economic crises, such as the East Asian Crisis or the Global Financial Crisis

## 7.2. ENVIRONMENTAL ECONOMICS

**Course Objectives:** This course is to equip the skills to analyse and address environmental issues from an economic perspective. Students will learn economic principles and tools to evaluate environmental problems and propose effective policy interventions for environmental sustainability.

### **Course Learning Outcomes:**

Upon completion of this course, the student shall be able to achieve the following outcomes:

- CO1:** Understand the interconnections between the environment and the economy.
- CO2:** Explain various environmental issues in global and Indian context.
- CO3:** Examine the theories that solve the problem of externalities and market failure and ensure optimality in resource allocation
- CO4:** Use various methods of environmental valuation
- CO5:** Evaluate policy framework techniques to real-world environmental problem

### **Unit 1: Introduction to Environmental Economics:**

- Environmental Economics: Definition, Scope and Importance
- Basic Concepts: Nature, Ecology and Environment; Various Environmental Problems
- Environment and Economy linkage; Sustainable Development
- Historical Perspectives of Environmental Economics: Classical, Neo-classical and Modern

### **Unit 2: Environmental Issues: Global and Indian Context**

- Brief review of Literature on Environmental Issues: Silent spring, Limits to Growth
- Environmental Kuznets Curve
- Trade and Environment: Pollution Heavens, Exporting the Pollution
- Environmental Issues in Indian Context

### **Unit 3: Market Failure and Management of Common Resources**

- Pareto Optimality and Market Failures; Externalities
- Types of goods: Public, Private, Club and Common Resources; Tragedy of Commons
- Coase Theorem and Property Rights
- Governing the commons: Production and Management of Common Pool/Property Resources

### **Unit 4: Environmental Valuation**

- Value of Environment: Concept and Types
- Cost Benefit Analysis in Environment Valuation
- Total Economic Valuation Framework; Green Audit
- Techniques of Valuation: Contingent Valuation, Travel Cost Approach, Hedonic Pricing, Replacement Cost method, Benefit Transfer.

## Unit 5: Environmental Regulation and Policy measures

- Environmental Protection Instruments: Environmental Ethics & Moral Suasion, Property Rights and Liability Laws
- Environmental Regulations: Direct Command and Control, Market based Regulation, Pigouvian Tax, Subsidies, Tradable Permits like Quotas & Carbon Trading
- International Treaties on Climate Change: Kyoto Protocol and Paris Agreement in brief; UNFCCC Global Action Plan on Climate Change.
- Environmental Laws and Regulatory Bodies in India; National Action Plan on Climate Change (NAPCC) in India

## Reference Books

1. M. Karpagam (2000), *Environmental Economics*, Sterling Publisher Pvt.Ltd. New Delhi.
2. Bromley, D. W. (Ed.), “Handbook of Environmental Economics”, Blackwell, 1995.
3. Kolstad, C. D., “Intermediate Environmental Economics”, Oxford University Press, 2010.
4. Stern, N., “The Economics of Climate Change: The Stern Review”, CUP, 1st Edition, 2007.
5. Charles D. Kolstad (2000), *Environmental Economics*, Oxford University Press, New York.
6. U. Shankar (2000), *Environmental Economics*, Oxford University Press, New Delhi.
7. Hanley, Nick, Shogren, Jason, White, Ben (2007): *Environmental Economics in Theory & Practice*, Pearson.
8. IPCC, “Climate Change 2014: Synthesis Report”, IPCC, 2014.
9. Documentary (2017) “**Before the Flood**” by National Geographic, starring Leonardo Dicaprio
10. Open Source Online Materials & Videos: IGNOU, e-PG Pathasala, Economic Surveys, SWAYM, Khan Academy etc.
11. Websites of UNFCCC, Ministry of Environment, Govt of India, Environment Regulatory Bodies

## Suggested Activities:

Unit-1: Identification of group project on environmental issues in the surrounding area.

Unit-2: Documentary screening on environmental issues and write up on learnings from it.

Unit-3: Reading exercise of chapters or articles on environmental issues.

Unit-4: Conduct surveys using any one environmental valuation techniques to measure the economic value of ecosystem services or environmental damage

Unit-5: Debates on current environmental issues, such as the effectiveness of carbon taxes

Group discussions on global issues of environmental concern and India’s obligations  
(On COP meetings)

## 7.2. AGRICULTURAL ECONOMICS

**Course Objective:** This course aims to impart knowledge and understanding on applications of economics concepts in agricultural sector, new developments in the policy paradigms related to agricultural sector, the linkage between agriculture and other sectors of the economy.

### **Course Learning Outcomes:**

On successful completion of the course, the student is expected to perform the following:

- C01:** Explain the importance of agriculture in India's economic development with discriminating focus on sub and allied sectors.
- C02:** Discuss issues of productivity, production, crop diversification and sustainability in Indian agriculture
- C03:** Examine the adequacy of credit and marketing infrastructure in Indian agriculture and suggest improvements
- C04:** Justify the need for reforms in agricultural marketing and judge the recent initiatives taken
- C05:** Evaluate the national agricultural policy and various programmes for development of agriculture in India

### **Unit-1: Introduction to Agricultural Economics**

- Agricultural Economics: Meaning, Nature and Scope
- Role of Agriculture in Economic Development; Interdependence between Agriculture and Non-Agricultural Sectors
- Agricultural Sub-sectors: Crop Sector & Allied Sectors and their Growing Importance
- Farming Types; Brief Discussion on Emerging Issues of Agricultural Development in India

### **Unit -2: Agricultural Production in India**

- Production Function Analysis in Agriculture & Supply Response
- Agricultural Inputs & Resource Use Efficiency in Agriculture
- Production, Productivity & Growth of Agriculture and Allied Sectors in India; Crop Diversification and Its Importance
- Prospects for Sustainable Agriculture: Organic Farming, ZBNF, Precision Farming

### **Unit -3: Agricultural Credit & Marketing in India**

- Agricultural Credit: Types, Problems
- Agricultural Credit Institutions: Role of NABARD in Agricultural Development
- Agricultural Marketing in India: Types & Problems; APMCs; Cooperative Marketing: NAFED & MARKFED

- Emerging Trends in Agricultural Marketing: Aggregators, e-NAM, online platforms, Super Bazar

#### **Unit -4: Agrarian Reforms and New Initiatives in India**

- Land Reforms; Green Revolution I, Green Revolution II
- Rainbow Revolution: Green, White, Blue, Yellow, Golden, Silver, Brown, Pink, Grey in brief
- Marketing Reforms: APMCs, e-NAM, Rythu Bazar; Extension Services Reforms;
- Agribusiness; Cooperatives and FPOs.

#### **Unit -5: Agricultural Policy and Programmes, Schemes in India**

- National Agricultural Policy; Agricultural Price Policy & MSP
- Programmes and Schemes for Agricultural Development: Public Investment (RKVY, RAFTAAR), Personal Investment DBT: PM KISAN & Rythu Bharosa in AP)
- Programmes and Schemes for Sustainable Agriculture: (PKVY), Irrigation (PMKSY),
- Programmes and Schemes for Crop Insurance: (PMFBY), Soil Health, Extension Services (ACABC, RBKs in AP)

#### **REFERENCES:**

1. Sadhu A. Singh Amarjit and Jasbhir Singh (2014): Fundamentals of Agricultural Economics, Himalaya Publishing House, Delhi.
2. Bilgrami, S.A.R. (1996), Agricultural Economics, Himalaya Publishing House, Delhi
3. Lekhi R.K & Joginder Singh: Agricultural Economics, An Indian Perspective, Kalyani Publishers, New Delhi
4. OpenSource Online Materials & Videos: IGNOU, e-PG Pathasala, Economic Surveys, SWAYM, Khan Academy etc.
5. Websites: Ministry of Agriculture and Farmers Welfare, Govt. of India; Department of Agriculture, Govt. of A.P

#### **Suggested Activities:**

- Unit-1: Case studies on different aspects of agriculture and allied activities in the local mandal or district.
- Unit-2: Interactive sessions with farming community on practical aspects of theory and policy
- Unit-3: Assignments and Student Seminars on emerging areas of importance in agriculture
- Unit-4: Poster presentations on production and productivity trends in agriculture
- Unit-5: Web Assignments on various revolutions initiated, Debate on Agricultural price policy and scheme

### 7.3. INDUSTRIAL AND INFRASTRUCTURAL ECONOMICS

**Course Objective:** This course aims to impart knowledge and understanding on applications of economics concepts and theories in industrial and infrastructure sector, new developments in the policy paradigms related to industrial and infrastructure sector.

**Course Learning Outcomes:**

After completing the course, the student shall be able to achieve the following outcomes:

**CO1:** Explain the profile of Indian industry in terms of the growth and modernisation

**CO2:** Explain the various theories of industrial location, and labour

**CO3:** Analyse the nature and implications of Investment, product pricing, Finance and Policies in Indian industry

**CO4:** Examine recent trends in infrastructural development and evaluate their impact on rapid economic development

**CO5:** Discuss infrastructural financing models and government policies

**Unit-1: Industry and Economic Development**

- Factors of Industrialization; Strategies of Industrialization in Developing Countries
- Theory of the Firm: Objectives, Size, Growth of the Firm; Optimum Firm, Factors Determining Optimum Firm
- Forms of Industrial Organization; MSMEs
- Role of Modern Technology in Industrial Development and Industry 4.0 & 5.0.

**Unit-2: Theories of Industrial Location and Industrial Labour**

- Theories of Industrial Location: Weber and Sargent Florence
- Factors of Industrial Investment
- Industrial Concentration and Measures to Control
- Problems of Industrial Labour, Labour Reforms and New Labour Codes & Implications in India

**Unit -3: Industrial Pricing, Finance, Policies & Programmes**

- Cost Curves ('U' and 'L' Shape) of Industry and Implications
- New Pricing Strategies of Industry
- Industrial Finance: Types, Sources; Industrial Financial Institutions in India
- New Industrial Policy; National Manufacture Sector Policy in India; Government Programmes for Industrial Development in India

**Unit-4: Infrastructure Development: Concept and Models**

- Concept of Infrastructure; Types of Infrastructure: Economic, Social and Digital
- Infrastructure and Economic Development
- Infrastructure as a Public Good; Special Characteristics of Public Utilities

- Models of Infrastructure Development: SOC and DPA.

#### **Unit -5 Infrastructural Finance, Policies & Programs**

- Infrastructural Finance: Types, Sources and Problems
- PPP Model of Infrastructural Financing: Concept, Importance, Types and Challenges; Special Purpose Vehicle (SPV) Model
- Infrastructural Policies and Programs in India
- Two Case Studies of Best Successful Infrastructural Developmental Projects in India

#### **References:**

1. Barthwal, R.R., *Industrial Economics*, Newage International Publishers., New Delhi.
2. Rojer Clarke, *Industrial Economics*, Oxford Publishers
3. Cherunilam, F.(1994), *Industrial Economics*, Indian Perspective (3rd Edition), Himalaya Publishing House, Mumbai.
4. Economic Surveys
5. Websites of Concern Ministries and Institutions

#### **Suggested Activities:**

Unit-1: Assignments and Student Seminars on theories of Industrial economics

Unit-2: Web Assignments on industrial concentration

Unit-3: Poster presentations on industrial development with focus on core industries and MSMEs

Unit-4: Group projects on growth of industry in the locality/region and its impact on employment and income generation

Unit-5: Visits to local MSMEs and submission of report on observations.

### **7.3. ECONOMICS OF EDUCATION AND HEALTH**

**Course Objective:** This course aims to provide students with understanding of the economic principles, theories, and policy considerations related to the education and health services.

**Course Learning Outcomes:**

Upon completion of this course, the student shall be able to achieve the following outcomes:

**CO1:** Examine the role of social sector in economic development

**CO2:** Evaluate the role of education in economic development

**CO3:** Understand role of health in economic development

**CO4:** Analyse issues in health and education sectors in India

**CO5:** Evaluate the government policies for the development of health and education

#### **Unit -1 Social Sector and Economic Development**

- Social Sector: Meaning and Components
- Social Sector and Economic Development; Human Capital Theory, Social Overhead Capital, Capability Approach
- Development of Social Sector Pre-Condition for Economic Reforms; East Asian Model
- Market Failure and Role of the State in Providing Social goods: Public and Merit Goods; Importance of Health and Education in Human Development and HDI

#### **Unit -2 Economics of Education**

- Status of Education in India: Literacy Rates, Gross Enrolment Ratios, ASER
- Cost-Benefit Analysis in Education: Private, Social Costs; Direct and Indirect Costs and Benefits; Rates of Return on Investment in Education
- Education and Labour Market; Signalling Theory

#### **Unit -3 Economics of Health**

- Status of Health: Indicators and Measurements
- Demand for Healthcare Services, Supply of Healthcare Services
- Measurement of Health Benefits
- Financing Health Care

#### **Unit -4: Issues in Education and Health in India**

- Inequalities in Access to Education and Measures to control
- Resource and Funding problems in Education and Measures; Learning Crisis and Skill Gap in Education and Measures
- Inequalities in Access to Health Services and Measures to control
- Problems of Infrastructure, Out of Pocket Expenditure, Health Insurance, Health Care Delivery and Measures

#### **Unit – 5: Government Policy and Schemes for Social Sector Development**

- Expenditure on Social Sector as Percentage of GDP in India.
- National Education Policy 2020 (NEP 2020): Salient Features and Evaluation
- National Health Policy 2017: Salient Features and Evaluation
- Government programmes and Schemes for Social Sector Development

**References:**

1. Becker, G. S. (2007). 'Health as Human Capital: Synthesis and Extensions' Oxford Economic Papers 59: 379-410, OUP
2. Theodore W. Schultz (1961), Investment in Human Capital the American Economic Review
3. Haldar, S.K., (2008). 'Effect of Health-Human Capital Expenditure on Economic Growth in India: A State-Level Analysis', Asia-Pacific Social Science Review, 8 (2), 79-97.
4. United Nations Development Programme, (2022). Human Development Report, Oxford University Press, New York.
5. Sen Amartya, "Development as Capability Expansion," in L. Griffin & J. Knight (eds), Human Development and the International Development Strategy for the 1990s, London: Macmillan, 1990.
6. Economic Survey 2022-23, Government of India, Ministry of Finance
7. Socio Economic Survey 2022-23
8. IGNOU material on Economics of Health and Education.

**Suggested Activities:**

Unit-1: Article/ chapter reading on human capital and writing insights

Unit-2: Quiz on Concepts of and Indicators from chapter 2

Unit-3: Assignment on various indicators of health

Unit-4: Seminars on Problems of health and education in India

Unit-5: Group Discussion on recent policy measures

(Skill Enhancement Course)

## 7.4. BASIC ECONOMETRICS

**Course Objectives:** The objective of this course is to introduce students to the principles and techniques of econometrics in order to analyse and interpret economic data.

**Learning Outcomes:**

Upon completion of this course, the student shall be able to achieve the following outcomes:

- CO1:** Understand the fundamental Principles of Econometrics
- CO2:** Apply essential Statistical tools for data analysis in Economics
- CO3:** Design/formulate Simple Linear Regression Model
- CO4:** Contrast Two variable Linear Regression Model with Multiple Linear Regression Model
- CO5:** Investigate the remedies in case Violations of Classical Assumptions

### Unit 1: Econometric Model Properties

- Econometrics: Definition, Scope and Methodology
- Mathematical Model vs. Econometric Model: Specification
- Nature and Sources of Data for Econometric analysis: Time Series & Cross Section, Pooled & Panel Data
- Nature of Regression Analysis; Concept of Stochastic Variable

### Unit 2: Statistical Concepts for Econometrics

- Types of distribution: Normal, Binomial and Poisson
- Estimation of Parameters; Properties of Good Estimator
- Testing of Hypotheses: Null and Alternative Hypotheses; Type I and Type II Errors, Power of a Test
- Tests of Significance: t, F, Chi-square Distributions and ANOVA.

### Unit 3: Simple Linear Regression Model

- Simple Linear Regression Model: Two Variable Case and Assumptions, PRF and SRF
- Properties of OLS estimators (BLUE) : Gauss-Markov Theorem ; Goodness of fit: ( $r^2$ )
- Estimation by Method of Ordinary Least Squares (OLS)
- One Tail and Two Tail Tests: Confidence Intervals and Interpretation of Regression Results.

### Unit 4: Multiple Linear Regression Model

- Multiple Linear Regression Model: Three Variable Case; estimation and Properties
- Partial Regression Coefficients; Goodness of Fit ( $R^2$ ) and Adjusted  $R^2$

- Interpretation of Regression Results

#### **Unit- 5: Violations of Classical Assumptions**

- Multicollinearity: Consequences, Detection and Remedies
- Heteroscedasticity: Consequences, Detection and Remedies
- Serial (Auto) correlation: Consequences, Detection and Remedies
- Running Regression model in Excel or SPSS Software and Interpretation.

#### **References:**

1. Damodar, N Gujarati, Dawn C Porter and Sangeetha Gunasekar (2017), *Basic Econometrics*, Tata McGraw-Hills. New Delhi.
2. J. M. Wooldridge ( 2013) , *Introductory Econometrics: A Modern Approach* , Fifth Edition, Cengage Learning,
3. G.M.K. Madnani (2017), *Introduction to Econometrics: Principles and Applications*, Oxford & Ibh Publishing, New Delhi
4. Koutsoyiannis, A, (2001), *Theory of Econometrics*, Palgrave Macmillan, New Delhi.
5. J. Johnston (1996), *Econometric Methods*, McGraw Hill Education, New Delhi.
6. Sarma K.V.S. (2010), *Statistics Made Simple Do it Yourself on PC* , PHI, New Delhi.
7. Kennedy P, (2008), *A Guide to Econometrics*, Wiley and Blackwell.
8. Roberto Pedace ,(2013) , *Econometrics For Dummies*, John Wiley & Sons Inc
9. Dominick Salvatore and Derrick Reagle (2001) *Schaum's Outline of Statistics and Econometrics* , Schaum's Outlines
10. Open-Source Online Materials & Videos: IGNOU, e-PG Pathasala, SWAYM, Khan Academy etc.

#### **Suggested Activities:**

**Unit-1:** Seminars/ Assignments for the application of Econometric models In Economics

**Unit-2 :** Exercise on formulating a hypothesis

**Unit-3:** Model-building exercises: Group Activity on formulating Simple regression Model

Give students a set of economic variables and have them construct a regression model

to explain the relationship between them

**Unit-4:** Reading exercise of research paper with Econometric model.

**Unit-5:** Quiz on concepts of violation of Classical assumptions.

(Skill Enhancement Course)

## 7.4 COMPUTER APPLICATIONS FOR ECONOMIC ANALYSIS

**Course Objectives:** This course aims to equip students with practical skills for conducting economic analysis using computer-based tools and techniques. Course covers a wide range of topics that are essential for any aspiring economist or data analyst.

**Course Learning Outcomes:**

Upon completion of this course, the student shall be able to achieve the following outcomes:

**CO1:** Develop skills in extracting, cleaning and preparing data for analysis

**CO2:** Know Basic Software programs for economic analysis

**CO3:** Build skills in visualizing data using graphs and charts/ interpreting results and drawing conclusions.

**CO4:** Prepare structured reports by using computer-based writing tools

**CO5:** Apply Various Online Tools for Economic Research.

**Unit 1: Data Extraction and Preparation**

- Computer Application in Economics: Importance
- Data: Types, Structures; Data Transformation and Data Merging; Cleaning and Preparing Data for Analysis
- Designing And Conducting Surveys Using Computer-Assisted Methods: Online Surveys
- Accessing Data from Various Sources: Online, Offline; India and World

**Unit 2: Introduction to Software Packages for Data Analysis**

- MS Excel: User Interface, Uses and Limitations
- SPSS: User Interface, Uses and Limitations
- R: User Interface, Uses and Limitations
- Python: User Interface, Uses and Limitations

**Unit 3: Data Visualization and Analysis in Excel**

- Tabulation
- Data Visualization Techniques: Graphs and Charts
- Basic Calculations
- Data Analysis: Statistical Functions, T, F, Chi Square, ANOVA, Correlation and Regression Analysis

#### **Unit 4: Writing and Presenting Results**

- MS Word: Reporting Essentials: Layout, Reference and Review Tab
- Introduction To Latex: Writing and Presenting Economic Analysis Reports
- Power Point: Effective Presentation of Economic Analysis.

#### **Unit 5: Online Tools for Economic Research**

- Google Tools: Advanced Search, Dataset Search, Google Keep, Ngram, Scholar , Lens
- Writing Essentials: Grammar and Paraphrasing Tools
- Copy Right Essentials: Plagiarism Checkers
- Using AI Tools In Academic and Professional Research and Work: Recent Technological Advances and Ethical Considerations

#### **References:**

1. <https://www.octoparse.com/blog/data-mining-vs-data-extraction-whats-the-difference>
2. [https://mis.alagappauniversity.ac.in/siteAdmin/ddeadmin/uploads/4/ PG M.A. Economics%20\(English\).pdf](https://mis.alagappauniversity.ac.in/siteAdmin/ddeadmin/uploads/4/ PG M.A. Economics%20(English).pdf)
3. <https://cran.r-project.org/doc/contrib/Farnsworth-EconometricsInR.pdf>
4. <https://towardsdatascience.com/transitioning-from-social-science-to-data-science-7e22501b5a3b>
5. <http://publish.illinois.edu/commonsknowledge/2019/12/05/stata-vs-r-vs-spss-for-data-analysis/>
6. Kristian Lono , ( 2023) , *Data processing in Sas, Spss, Stata, R and Python. A comparison*, Statistics Norway
7. Dr. Sanatan Nayak, *Application of Computer in Economics Course Material Dept. of Economics*, B.B. Ambedkar University
8. N. Matloff (2011) *The Art of R Programming* No Starch Press Inc.
9. J. Adler, O'Reilly (2012) *R in a Nutshell*
10. Leanpub (2020) *Exploratory Data Analysis with R*

#### **Suggested Activities:**

A Stepwise research project involving the collection, analysis, and visualization of a real-world dataset could be used throughout the course as follows:

**Unit-1:** Exercise on extracting data from websites on a particular topic

**Unit-2:** Assignment / Seminars on uses of Software packages for data Analysis

**Unit-3:** Ask students to prepare graphs and charts for the data collected in Excel

**Unit-4:** A brief report to be submitted for the data collected and to be submitted online

**Unit-5:** Exercise on plagiarism checker and using of paraphrasing tools

(Skill Enhancement Course)  
**7.5 SOCIAL ENTREPRENEURSHIP**

**Course Objective:** This course aims to provide students with a comprehensive understanding of the concepts and practices of social entrepreneurship by acquiring skills and knowledge of social innovation and design thinking necessary for addressing social and environmental challenges through entrepreneurial approaches.

**Course Learning Outcomes:**

Upon completion of this course, the student shall be able to achieve the following outcomes:

- CO1:** Understand various concepts and practices in social entrepreneurship
- CO2:** Know various business models in social entrepreneurship
- CO3:** Analyze social innovation and design thinking related to social entrepreneurship
- CO4:** Examine legal aspects related to social entrepreneurship
- CO5:** Know marketing and communication strategies for social entrepreneurship

**Unit 1: Introduction to Social Entrepreneurship**

- Concept of Social entrepreneurship; Types: Community Social Entrepreneur, Non-Profit Social Entrepreneur, Transformational Social Entrepreneur, Global Social Entrepreneur
- Business Entrepreneurship vs Social Entrepreneurship
- Case studies of successful social enterprises: The Grameen Bank, ME to WE, SELCO, TATA Social Enterprise Challenge.
- Key challenges and opportunities in social entrepreneurship; Ethics and values in social entrepreneurship

**Unit 2: Business Models for Social Entrepreneurship**

- Different Business models: Entrepreneur Support, Market Intermediary, Low Income Client, Service Subsidization.
- Identifying and Securing funding: Equity and Investment, Grants and Donations, Revenue and Fee, Crowdfunding and campaigning
- Evaluating the Social and Financial Impact of Social Enterprises; Scaling and sustaining social enterprises.

**Unit 3: Design Thinking and Social Innovation**

- Design Thinking: Meaning, Stages and Relevance to Social Entrepreneurship
- Social Innovation: Concept and Need for Social Entrepreneurship
- Sources of Social Innovation: Social Organizations, Social Movements, Politics and Government, Markets, Academia, Philanthropy

**Unit 4: Legal and Regulatory Environment for Social Enterprises**

- Social Entrepreneurship in India: Legal and Regulatory Frameworks and Barriers

- Different legal forms of Social Entrepreneurship: Non-profit or public charitable organization, For -profit social enterprise under the Companies Act, 2013
- Intellectual Property Rights and Social Entrepreneurship.

### **Unit 5: Marketing and Communication for Social Enterprises**

- Developing Marketing and Communication Strategies for Social Enterprises
- Identifying and Reaching Target Audiences for Social Enterprises: Branding and Storytelling for Social Enterprises
- Promoting Social Enterprises: Using social media and Other Digital Platforms
- Two Case Studies of Successful Social Entrepreneurships in Local Area.

### **References:**

1. David Bornstein and Susan Davis (2016), *Social Entrepreneurship: What Everyone Needs to Know*, Oxford University press
2. Andrew Shea, Bryan Boyer, Jennifer May, Mariana Amatullo (2021), *Design for Social Innovation Case Studies from Around the World*, Taylor & Francis
3. India Consulate General of Switzerland (2015), *Social Entrepreneurship in India Unveiling the unlimited opportunities*  
<https://www.indembassybern.gov.in/docs/Social-Entrepreneuership-Report.pdf>
4. Debbie Vigar-Ellis, Nigel Chiweshe (2019), *Strategic Marketing for Social Enterprises in Developing Nations* IGI Global
5. Harsh Bhargava (Sai Prameela Konduru (2023), *BITS Of Social Impact : A Social Entrepreneurship Primer with Stories of Founders from BITS Pilani* HarperCollins India
6. Elena G. Popkova, Bruno S. Sergi (2021), *Economic Issues of Social Entrepreneurship* Palgrave Macmillan
7. Samapti Guha, Satyajit Majumdar (2021), *In Search of Business Models in Social Entrepreneurship Concepts and Cases*
8. M Durieux (2010, *Social Entrepreneurship For Dummies* John Wiley & Sons Inc
9. Anirudh Agrawal, Payal Kumar, (2018) *Social Entrepreneurship and Sustainable Business Models The Case of India*, Springer International Publishing
10. Carole Carlson (2022), *Social Entrepreneurship and Innovation*, SAGE Publications

### **Suggested Activities:**

Unit-1: Class room Seminars on case studies of successful social entrepreneurships in India

Unit-2: Group assignment on identifying the funding Sources for Social Entrepreneurship

Unit-3: Group design thinking for a social problem identified

Unit-4: Role plays & games on marketing and communication skills being a social entrepreneur

Unit-5: Field Visit to a local social entrepreneur and report writing of observations

(Skill Enhancement Course)  
**7.5 MARKETING RESEARCH**

**Course Objective:** This course aims to impart knowledge, understanding and basic skills of Market Research.

**Course Learning Outcomes:**

Upon completion of the course, the student shall be able to achieve the following outcomes:

- CO 1: Discuss the importance of marketing research
- CO 2: Evaluate various observation techniques
- CO 3: Capable of designing a questionnaire
- CO 4: Proficient of data analysis and interpretation
- CO 5: Able to prepare a report

**Unit-1: Introduction**

- Importance And Role of Research in Marketing
- The Marketing Research Industry; Approaches to Marketing Intelligence.
- Types of Market Research; Market Research Process
- Problems Encountered by Marketing Research in India
- Marketing Problems and Avenues or SHGs, Women Entrepreneurs, Marginal Farmers, Environmental Goods/Services

**Unit- 2: Marketing Research Design**

- Research Design: Pre-Test, Post-Test, Control Group and Solomon Four Group Design, Causal Research
- Observation Techniques
- Experiments
- Test Markets

**Unit- 3: Data Collection**

- Primary and Secondary Data
- Questionnaire Design
- Comparative and Noncomparative Attitude Measurement Scaling Techniques
- Sampling Design

**Unit-4 : Data Analysis and Interpretation**

- Analysing Qualitative Data Collected Through Interviews and Open-Ended Questions
- Salient Features of Different Methods of Non-Parametric Tests: One Sample Tests (Chi-Square Test); Two Sample Tests (Wilcoxon Matched-Pairs Signed Rank Test); K Sample Tests (Kruskal-Wallis Test);
- Multidimensional Scaling, Discriminant Analysis.

**UNIT-5: Reporting Results**

- Preparing Marketing Research Report and Presentation:
- Graphical Presentation of Reports

- Ethical Issues Related Clients, Respondents, Sampling, Questionnaire Design, Reporting

**References:**

1. Naresh K Malhotra, Satyabhushan Dash, (2009) Marketing Research- An Applied Orientation, 5/e, Pearson Education, New Delhi.
2. Donald S. Tull, Del I. Hawkins, (2009). Marketing research –Measurement & Method, PHI Private Limited, NewDelhi.
3. Donald R. Cooper, Pamela S Schindler, (2007). Marketing Research-Concepts and Cases. Tata McGraw-Hill Publishing Company Limited, NewDelhi.
4. Hair, Bush, Ortinau, (2006). Marketing Research, 3/e, Tata McGraw-Hill Publishing Company
5. Nigel Bradley, (2007). Marketing research –Tools and Techniques. Oxford University Press, New Delhi.

**Suggested Activities:**

Unit-1: Assignment on Marketing Research in India

Unit-2: Seminar on Causal Research

Unit-3: Class Level Workshop on Sampling Design

Unit-4: Invited Lecture on Discriminant Analysis

Unit-5: Webinar on Ethical Issues in Research