

Estd: 1966

SARASWATHI NARAYANAN COLLEGE

(An Autonomous Institution Affiliated to Madurai Kamaraj University)

(Reaccredited with Grade 'B' by NAAC)

Perungudi, MADURAI – 625 022.

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DEPARTMENT OF ECONOMICS

Choice Based Credit System (CBCS)

Learning Outcomes-based Curriculum Framework

(LOCF)

M.A. Economics Programme

(For those who join in June 2022)

PRINCIPAL

Dr. M. Kannan M.A., M.Phil., Ph.D.

DEPARTMENT OF ECONOMICS

- 1. Dr. M.Jeyakumar, M.Sc., M.A., M.Phil., P.G.D.P.M., Ph.D**
- Associate Professor and Head
- 2. Dr. M.Meena M.Sc., M.Phil.,Ph.D.** -
Assistant Professor
- 3. Dr. K. Subramanian, M.A., M.B.A. P.G.D.C.A., M.Phil., Ph.D.**
- Assistant Professor
- 4. Dr. R. Gopalasundar, M.A. M.B.A., P.G.D.C.A., M.Phil.,**
B.Ed., P.D.N.T., Ph.D. –
Assistant Professor
- 5. Dr. P. Gnanasoundari, M.A., M.Phil., M.Ed., Ph.D. -**
Assistant Professor

PROFILE OF THE COLLEGE

Thiru. L. Narayanan Chettiar, a renowned philanthropist founded Saraswathi Narayanan College at Perungudi near Madurai Airport in the year 1966. The college is a prestigious academic powerhouse catering to the educational needs of students hailing from economically weaker and socially oppressed section of our society. It imparts education of the highest quality to students irrespective of caste, creed and religion. The guiding principles of our college are duty, devotion and distinction. The institution has proved an innovative leader and a catalyst in the best educational, cultural and economic interests of students. It is committed to make the students morally upright, intellectually resourceful, socially advantaged and globally competent. It is devoted to teaching, research and extension activities with equal importance.

The college set off its academic journey with Pre-University Courses in the year 1966 – 67. The Institution started offering UG programmes from the academic year 1968 – 69. It was upgraded as Post-Graduate Institution in 1979 – 80 and as Research Institution in 1984 – 85. The co-educational system was introduced for M.Phil. programmes in the academic year 2001 – 02 and for PG programmes in the year 2002 – 03 with the noble objective of promoting higher education among girls in rural areas. Girls have been enrolled in UG programmes also since the academic year 2010 – 11.

The green campus of 66 acres has a built-up area of 1,70,059 sq.ft. A new library housed at Silver Jubilee building was built at the cost of Rs.25,00,000/- and it was inaugurated by His Excellency Dr. M. Chenna Reddy, then the Governor of Tamilnadu on 04.04.1994. The library was dedicated to the memory of Achi. The major donor of this building was Tmt. Saraswathi Narayanan, the better half of the Founder President Thiru. L. Narayanan Chettiar. Sri Vidhya Ganapathi Temple was built and consecrated on 27.08.2015.

The Departments of Botany, Mathematics, Commerce, English, Economics and Chemistry have been upgraded as university recognized research centres to carryout M.Phil and Ph.D research programmes in the college. NAAC accredited the college with grade B+ in the year 2005. UGC accorded the status of Autonomy to our institution in the year 2007. NAAC re-accredited the college with grade B (CGPA of 2.78) in the year 2016. UGC extended the Status of Autonomy to the institution for another period of five years from the academic year 2016 – 17.

M.A ECONOMICS COURSE STRUCTURE

S. No	Course	Title of the paper	T/P	Hours/ week	Credits	Course Code
I Semester						
1.	CC1	Advanced Microeconomic Theory I	T	6	5	LPECCT11
2.	CC2	Advanced Macroeconomic Theory I	T	6	5	LPECCT12
3.	CC3	Fiscal Economics	T	6	4	LPECCT13
4.	CC4	Statistics for Economics	T	6	4	LPECCT14
5.	DSE1(a)	1. Indian Financial Market	T	6	4	LPECDS11
	DSE1(b)	2. Energy Economics and Policy				LPECDS12
II Semester						
6.	CC5	Advanced Microeconomic Theory II	T	6	5	LPECCT21
7.	CC6	Advanced Macroeconomic Theory II	T	6	4	LPECCT22
8.	CC7	Mathematical Economics	T	6	4	LPECCT23
9.	CC8	Development Economics	T	5	4	LPECCT24
10.	DSE2(a)	1. Economics of Health and Education	T	5	3	LPECDS21
	DSE2(b)	2. Behavioural Economics				LPECDS22
11.	AEC1(a)	1. Foundations of Data Science	T	2	2	LPECAE21
	AEC1(b)	2. Economics of Information				LPECAE22
12.	SLC1(a)	1. Economics of Crime	T	-	2	LPECSC21
	SLC1(b)	2. Economics of Art and Culture				LPECSC22

III Semester						
13.	CC9	International Economics	T	6	5	LPECCT31
14.	CC10	Applied Econometrics	T	6	4	LPECCT32
15.	CC11	Agricultural Economics	T	6	4	LPECCT33
16.	CC12	Research Methodology and Indian Database	T	5	4	LPECCT34
17.	GEC	1. English for Career Development	T	5	4	LPENNM31
		2. Entrepreneurship				LPCONM31
		3. Mathematics for Competitive Examinations				LPMSNM31
		4. Chemistry for all				LPCHNM31
		5. Applications of Biotechnology				LPBYNM31
18.	AEC2(a)	1. SET /NET Examination for Economics	T	2	2	LPECAE31
	AEC2(b)	2. Time Series Analysis				LPECAE32
19.	SLC2(a)	1. Economics of Family and Gender	T	-	2	LPECSC31
	SLC2(b)	2. Economics of Technology and Innovation				LPECSC32
IV Semester						
20.	CC13	Indian Economic Development and Policy	T	6	5	LPECCT41
21.	CC14	Environmental Economics	T	6	5	LPECCT42
22.	CC15	Industrial Economics	T	6	4	LPECCT43
23.	CC16	Project	-	5	4	LPECJ41
24.	DSE3(a)	1. Economics of Regulation	T	5	3	LPECDS41
	DSE3(b)	2. Institutional Economics				LPECDS42
25.	SEC (a)	1. Data analysis using Excel	P	2	2	LPECSL41
	SEC (b)	2. Data Analysis using SPSS				LPECSL42
		Total			90+4	

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DEPARTMENT OF ECONOMICS – PG – LOCF

Title of the Course: Advanced Microeconomic Theory I

Semester: I

Course Code: LPECCT11

Contact Hours: 6hrs/w

Credits: 5

Course Learning Outcomes

On Completion of the course, the students are able to

- Explain how rationally and efficiently an individual consumer takes economic decisions under certainty and uncertainty conditions.
- Grasp the importance of marginal way of thinking and need for rational approach for decisions relating to production at micro level.
- Demonstrate the production theories and functional forms used in applied production analysis.
- Elucidate the cost and revenue concepts that Economists use in business and public policies.
- Illustrate how firms behave under different market conditions.

Pre- required Knowledge

- Rational behaviour - Monotonic behaviour - Indifference curve – MRS.
- Expected Utility – Risk Aversion – Risk Neutral - Risk loving.
- Different cost concepts - Isoquant – MRTS.
- Competitive and Non-competitive Markets - Firm's Equilibrium - Normal profit and Abnormal profit.
- Role of time element in price determination.

Unit I: Consumer Behaviour Under Certainty

Substitution Effect, Income effect, Price effect: Hicks Method of Breaking Price Effect- Derivation of Demand Curve for Normal, Inferior and Giffen Goods - Difference between Compensated and Ordinary Demand Curve - Revealed Preference Theory - Hicks Logical Ordering - Attribute Theory of Demand - Stone's Utility Function - Linear Expenditure System.

Unit II: Consumer Behaviour Under Uncertainty

St. Petersburg Paradox - Bernoulli's Hypothesis - N-M Utility Index - Friedman - Savage Hypothesis - Markowitz Hypothesis - Investor's Choice Problem.

Unit III: Applied Production Analysis

Primal and Dual approaches in Production Economics – Multi output techniques – Functional forms: Cobb Douglas, CES, VES and Translog – Production function - Efficiency and Productivity analysis – SAC and SMC – Derivation of LAC and LMC.

Unit IV: Firm's Behaviour - I

Perfect competition: Incompatibility of equilibrium with perfect competition - Application of perfect competition – Monopoly: Dead weight loss – Monopoly Power – Price discrimination: Meaning, Types, Equilibrium and its desirability – Bilateral Monopoly.

Unit V: Firm's Behaviour - II

Monopolistic Competition: Group equilibrium and Excess Capacity - Monopolistic screening and uninformed buyers - Non-Collusive Oligopoly; Cournot's Model, Chamberlin's Model and Kinked demand curve – Collusive Oligopoly-Cartel: Market Sharing and Price Leadership Models (Low - Cost Firm, Dominant Firm and Barometric Price Leaderships).

Suggested topics for group discussion/ Presentation

1. There are ways of overcoming problems of aggregation and linearity for estimating Linear Expenditure System (LES) using cross sectional data.

2. The Modern utility theory is the outcome of failure of the traditional utility theory to study consumer choices under risk and uncertainty.
3. Diminishing returns to a single factor of production and constant returns to scale are not inconsistent.
4. Third Degree Price Discrimination requires that Marginal revenue for each group of consumers equals Marginal Cost.
5. OPEC Oil Cartel succeeded in raising prices substantially, while the CIPEC copper cartel did not.

Suggested Readings

i) Text Books

1. Ahuja. H. L, (2017), Modern Microeconomics: Theory and Applications, S. Chand and Sons, New Delhi.
2. Jhingan M.L (2016), Micro Economics, Vrinda Publications, New Delhi.
3. Koutsoyiannis. A, (1993), Modern Microeconomics, Macmillan Education Ltd.

ii) Reference Books

1. Samuelson and D. Nordhaus, (2013), Microeconomics, McGraw Hill.
2. Sen. A, (2012), Microeconomics; Theory and Application, Oxford University press, New Delhi.
3. Dominic Salvatore, (2006), Microeconomic theory, Schaum's Outline series McGraw Hill.
4. Robert Pindyck et al, (2006), Microeconomics, Pearson Education.
5. Henderson Quant, (2003), Microeconomic Theory, McGraw Hill.
6. Paul Heyne (1997), The Economic Way of Thinking, Prentice Hall, Washington.
7. Stigler. J, (1996), Theory of Price, Macmillan Inc.
8. Hicks J.R (1975), Value and Capital, Oxford University Press, London.
9. Green H. A.J (1974), Consumer Theory, 2nd Edition, Macmillan.

10. Tapas Majumdar (1961), The Measurement of Utility, MacMillan and Co, Ltd, New York.

Web Sources

1. https://clooktrack.com/knowledge_base/what-is-consumer-behavior/
2. <https://monopoly.hasbro.com/worldwide>
3. <https://en.wikipedia.org/wiki/Oligopoly>

Title of the Course: Advanced Macroeconomic Theory I Semester: I
Course Code: LPECCT12 Contact Hours: 6hrs/w Credits: 5

Course Learning Outcomes

On completion of the course, the students are able to

- Explain the techniques and the procedures for measurement of output and income at aggregate level and the system of National Income accounting.
- Make a comparative analysis of the behavioural foundations of Macroeconomics.
- Gain deeper understanding of theoretical aspects of investment.
- Illustrate efficiently how and why output and employment levels in an economy fluctuate over time.
- Competently narrate the components of demand for money and money supply with its regulatory system.

Pre- required Knowledge

- Closed economy and Open economy- Aggregate expenditure and its components.
- Short- run vs Long- run consumption function.
- MPC and MEI.
- Real Interest and Nominal Interest.
- Wealth effect and Keynes effect.

Unit I: National Income and Its Accounting

National Income Measurement: Methods and Difficulties -
National Income Accounting: Social Accounting, Input -
Output Accounting, Flow of funds Account and Balance of
Payments Account.

Unit II: Behavioural Foundations of Aggregate Consumption

Fisher's Intertemporal Choice Model – Normal Income Theories: Friedman and Modigliani Endogenous Income theory – Robert Hall Random Walk Hypothesis – David Leviason Behavioural Hypothesis.

Unit III: Behavioural Foundations of Aggregate Investment

Accelerator theory of Investment - Flexible Accelerator Theory - Profit Theory – Duesenberry's financial theory - Jorgenson's Neo- classical theory - Tobin's theory of Investment – Investment under asymmetric information.

Unit IV: Economic Fluctuations

Trade Cycle: Theories of Hawtrey, Samuelson, Hicks, Kaldor and Schumpeter- Real Business Cycle theory of Finn E. Kydland and Edward C. Prescott (Technological Shocks Model).

Unit V: Demand for and Supply of Money

Demand for Money - Keynesian Monetary Theory – Baumol and James Tobin's Portfolio Analysis - Don Patinkin's integration - Real Balance Effect - Milton Friedman's Reformulated Quantity Theory – Buffer Stock model on money demand - Behavioural Model of money supply determination – H Theory of money supply - Determinants of Money Supply - High Powered Money and Money Multiplier - Regulation of money supply and credit.

Suggested topics for group discussion/ Presentation

1. A country does not have to conform exactly with the International Statistical Standards for National Accounts (SNA, 2008), but most countries follow its template more or less.
2. Average Propensity to Consume (APC) remains constant over a long period even though income increases substantially.
3. Firms deviate from optimal investment behaviour for many reasons.

4. The contribution of technological shocks to economic fluctuations needs empirical investigations concerning the extent of imperfect competition, external economies of scale and measurement errors in output and labour input.
5. Behaviours of the public, the commercial banks and the central bank determine money supply process.

Suggested Readings

i) Text Books

1. Ahuja. H. L (2016), Macroeconomics: Theory and Policy, S.Chand And Sons, New Delhi.
2. Roy. M (2010), Macroeconomic Policy Environment, McGraw Hill.
3. Jhingan. M.L (2004), Macroeconomic Theory, Vrinda Publication.

ii) Reference Books

1. Edward Shapiro (2013), Macroeconomic Analysis, Galgotia Publications.
2. Paul. R. Krugman, (2012), The Return of Depression Economics and the Crisis of 2008, Penguin.
3. Robert. J Gardoo, (2011), Macroeconomics, Prentice – Hall, India.
4. N. Gregory Mankiw, (2010), Macroeconomics, Earth Publishers, 7th Edition.
5. Andrew B. Abel and Ben. S. Bernanke (2007), Macroeconomics, Pearson Edition, New Delhi.
6. Dornbush, Fisher and Sterg, (2003) Macroeconomics, McGraw Hill, 11th Edition.
7. Andrew Abel and Ben Bernanke, (2003), Macroeconomics, Pearson Indian Edition.
8. Richard T. Fryer, (2003), Macroeconomics, Pearson Indian Edition.
9. Paul Heyne (1997), The Economic Way of Thinking, Prentice Hall, Washington.

10. Oliver Jean Blanchard, (1996), Lectures on Macroeconomics, Prentice Hall.

Web Sources

1. https://en.wikipedia.org/wiki/measures_of_national_income_and_output
2. https://en.wikipedia.org/wiki/Business_cycle
3. <https://www.economicshelp.org/blog/glossary/demand-for-money/>

Title of the Course: Fiscal Economics	Semester: I
Course Code: LPECCT13	Contact Hours: 6hrs/w
	Credits:4

Course Learning Outcomes

On completion of the course, the students are able to

- Discuss the changing role and political actions of the Government in an economy over time.
- Evaluate the theories of Public Expenditure in terms of increasing State activities, tolerance level of taxation and provision of public goods and explicate the effects of public spending on social welfare.
- Make a critical appraisal of spectrum of issues arising from the operation of stabilization instruments and public debt.
- Demonstrate the policy implications underlying the theories of taxation and tax system.
- Gain knowledge on Fiscal federalism and Budgetary policies to understand the problem of allocation of resources.

Pre- required Knowledge

- Public goods – Free rider – Externalities - Laissez -Faire philosophy.
- Public Expenditure and its Classifications - Social Benefits and Social Sacrifice.
- Tax and Non tax Sources.
- Functional Finance – Public Debt – Deficit financing.
- Division of financial powers.

Unit I: Fiscal Functions and Collective Decision Making

Theory of Market Failure - Fiscal functions: Allocation, distribution and stabilization functions of State – Voting and Public Goods: Median Voter theorem and Logrolling – Economic theory of political action in Democracy – Role of public sector in a mixed economy.

Unit II: Theory of Public Expenditure

Theories of public Expenditure: Lindahl, Wagner, Peacock – Wiseman and Colin Clark theories – Principle of Maximum Social Advantage: Musgrave and Dalton – Pure theory of Public Expenditure (Samuelson).

Unit III: Theory of Taxation

Public Revenue: Meaning and sources – Revenue Receipts – Tax Revenue and Non - Tax Revenue Receipts - Principles of taxation – Theory of optional taxation – Difference between Direct and Indirect taxation – Taxable capacity and Factors determining it - Shifting and Incidence of taxation under different cost conditions.

Unit IV: Fiscal imbalance and Management of Public Debt

Fiscal Imbalance: Meaning and Types - Public Debt: Classification and sources– Burden of public debt – Principles of public debt – Methods of repayment of debt – Compensatory aspects of public debt policy – Fiscal deficit – Deficit financing.

Unit V: Fiscal Federalism and Fiscal Policy

Fiscal Federalism: Decentralisation theorem, Theory of Inter- governmental transfer – Economic efficiency and assignment issues in multi-level government - Fiscal Policy: Objectives and Instruments – Built- in Stabiliser – Discretionary fiscal policy – Supply side fiscal policy – Effectiveness of Fiscal policy - Zero based Budget – Balanced Budget.

Suggested topics for group discussion/ Presentation

1. Majority rule in the provision of public goods is incentive and compatible but not individually rational.

2. The Critical limit hypothesis on Public Expenditure deals with the tolerance level of taxation.
3. Optimal tax problem is a game of imperfect information between tax payees and social planners.
4. Inter - Governmental fiscal transfer is the resolution of horizontal fiscal imbalances.
5. Federal form of Government can be justified economically.

Suggested Readings

i) Text Books

1. Sharma O.P (2013), Public Economics, Vishal Publications Co. Jalandhar, India.
2. Hemalata Rao (2006), Fiscal Federation – Issues and Policies, New Century Publications, New Delhi.
3. Tyagi B. P (1995), Public Finance, Jai Prakash Nat & Co.

ii) Reference Books

1. Amaresh Bagchi (2005), Readings Public Finance, Oxford University Press, USA.
2. Raghbendra Jha (1998), Modern Public Economics, Routledge, London.
3. Jha H (1998), Modern public Economics, Routledge, London.
4. Menntt.P (1996), The Economic Public Choice, Edward Elgar, UK.
5. Shami P (1995), Tax Policy Handbook, Tax Division: Fiscal affairs: Development: International Monetary Fund, Washington D C.
6. Jain Claman.L (1995) Essentials of Monetary and Fiscal Economics; Grace way Publications.
7. Musgrave R. A (1989), The theory of Public Finance, McGraw Hill, Kogakshusa, Tokyo.
8. Atkinson. A. B and Stiglitz (1980), Lectures on Public Economics, Tata McGraw Hill, New York.

9. Alan T. Peacock (1979), *The Economic Analysis of Government and related Themes*, St Martin Press, New York.
10. Buchanan. J.M (1970), *The Public Finance*, Richard D. Irwin, Homewood.

Web Sources

1. <https://www.investopedia.com/terms/m/marketfailure.asp>
2. https://en.wikipedia.org/wiki/Theories_of_taxation
3. https://en.wikipedia.org/wiki/Fiscal_federalism

Title of the Course: Statistics for Economics	Semester: I
Course Code: LPECCT14	Contact Hours:6hrs/w
	Credits: 4

Course Learning Outcomes

On completion of the course, the students are able to

- Understand the salient aspects of Binomial, Poisson and Normal distributions and their applications in Econometric modelling.
- Compute Correlation coefficient and fit Simple linear regression lines.
- Calculate trend values and use them in interpreting the movements of economic variables.
- Acquire the skill of testing a research hypothesis and apply the skill in social science researches.
- Develop the logical reasoning in the applications of parametric and non - parametric tests in social science researches.

Pre- required Knowledge

- Frequency distribution and Theoretical distribution.
- Measures of Central Tendency and Dispersion.
- Time series and Cross sectional data.
- Small sample and large sample.
- Difference between Parametric and non-parametric tests.

Unit I: Probability and Theoretical Distributions

Probability: Meaning, Addition and Multiplication theorems
- Baye's Rule - Mathematical Expectation – Theoretical distributions: Binomial, Poisson and Normal.

Unit II: Statistical Measures of Relationship

Correlation analysis: Meaning, types, methods (Scatter diagram and Karl Pearson's)- Probable error - Rank correlation: Meaning and methods of computing it (Concurrent deviation and Spearman's) – Regression analysis: Meaning and types - Difference between Correlation and Regression - Fitting Simple Linear Regression lines.

Unit III: Analysis of Time Series

Time Series: meaning, components and utility - Methods of Measuring Trend: Semi Average, Moving Average and Least Squares Methods - Methods of Measuring Seasonal Variations: Ratio to Trend, Ratio to Moving Average and Link Relative methods.

Unit IV: Tests of Hypothesis-I

Test of hypothesis: Procedure - Null vs. Alternative hypothesis – Level of significance, Type I and Type II errors: One tailed and two tailed tests – Confidence interval - Test for proportions and large sample test (Z test).

Unit V: Tests of Hypothesis-II

Small Sample Test (t-test): Meaning, assumptions, properties - Degrees of freedom - Paired 't' test – ANOVA: one way and two-way classifications and Non-parametric test (Chi-square test only).

Suggested topics for group discussion/ Presentation

1. The Gaussian distribution is the cornerstone of Modern Statistical theory.
2. Probable error is the measure of reliability of value of correlation coefficient.
3. Least Squares Method is used to determine trend in a time series.

4. Hypothesis testing and confidence interval are used in social science research.
5. F test and t test are used to verify a hypothesis when samples are drawn from Normal populations.

Suggested Readings

i) Text Books

1. Gupta. S.P (2010), Statistics, S.Chand, New Delhi.
2. Sanchetti and Kapoor (2005), Statistics, Sultan Chand and Sons, New Delhi.
3. Murray R. Spiegel and Larry J. Stephens (2000), Theory and Problems of Statistics, Schaum's Outlines, Tata McGraw- Hill Publishing Company Limited, New Delhi.

ii) Reference Books

1. Richard J.Larsen and Morris L.Marx, (2011), An Introduction of Mathematical Statistics and its Application, Prentice Hall.
2. Rao Prakasa B. L. S (2010), A First Course in Probability and Statistics, World Scientific, New Jersey.
3. Shenoy G. V and Madan Pant (2007), Statistical Methods in Business and Social Sciences, MacMillan India Limited, New Delhi.
4. David Freedman, Robert Pisani and Roger Purves (2006), Statistics, W. W Norton and Company, New York.
5. Harry Frank and Steven C. Althoen (2002), Statistics: Concepts and Applications, Cambridge University Press.
6. Monga. G.S (2001), Mathematics and Statistics for Economics; S.Chand publication, New Delhi.
7. Nagar.A.C and R.K. Das, (2001), Basic Statistics, Oxford University Press, New Delhi.
8. Hooda R.P. (2000), Statistics for Business and Economics, MacMillan, New Delhi.
9. Grewal P.S. (1990), Methods of Statistical Analysis, New Delhi.

10. Mansfield, Edwin, (1980), Statistical for Business and Economics, Norton and Co, New York.

Web Sources

1. <https://en.m.wikipedia.org/wiki/Probability>
2. <https://en.wikipedia.org/wiki/Correlation>
3. <https://www.investopedia.com/terms/h/hypothesis-testing.asp>

Title of the Course: Indian Financial Market	Semester: I
Course Code: LPECD511	Contact Hours: 6hrs/w
	Credits: 4

Course Learning Outcomes

On completion of the course, the students are able to

- Evaluate the performance of Indian money market and capital market.
- Gain knowledge on the salient features of instruments of financial market.
- Demonstrate the functions of stock exchanges in India.
- Illustrate the working of Development Finance Institutions (DFIs) in India.
- Describe the reform measures taken for strengthening both money and capital markets in India.

Pre- required Knowledge

- Personal finance and Corporate Finance.
- CRR, SLR, Repo rate, Reverse repo rate and Capital Adequacy.
- Types of investors: Speculators, Hedgers and Arbitrators.
- Working capital and Debt Capital.
- Bull Market, Bear Market, Intraday - Nifty - Demat Account.

Unit I: Instruments of Financial Market

Financial Market: Meaning and Structure - Financial Market Instruments: Bills of Discount, Treasury Bills, Commercial Papers, Shares (Equity, Bonus and Preferential), Debentures and Bonds.

Unit II: Indian Money Market

Money Market: Meaning and features - Organised and Unorganized – Money Market Reform Measures: Basel III norms for Banking Sector – Narasimhan committee reports of 1991 and 1998 – Raghuram Rajan committee report of 2007 – Money Market Mutual Funds.

Unit III: Indian Capital Market

Capital Market: Meaning and Classification - Primary Vs Secondary Market – Players of Capital Market – Defects of Indian Capital Market: Insider trading - Reform Measures.

Unit IV: Development Financial Institutions (DFIs)

DFIs: Meaning – IFCI, IDBI, ICICI, and SIDBI – Reform measures.

Unit V: Stock Exchanges

Stock Exchange: Meaning and Functions - BSE, NSE and OTCEI – Depositories in India – SEBI: Functions and Guidelines.

Suggested topics for group discussion/ Presentation

1. The Negative Correlation between Bond prices and interest rates are logical.
2. Commercial banks in India have not raised to the level of Basel III norms.
3. Indian Capital Market is defective.
4. India has established successful DFIs.
5. SEBI guidelines for the issue of debentures and equity are justifiable but inadequate.

Suggested Readings

i) Text Books

1. Sandeep Goel (2018), Financial Markets, Institutions and Services, PH1 Learning.
2. RuddarDutt and Sundaram, (2018), Indian Economy, S. Chand, New Delhi.
3. Siddhartha Sankar Saha (2017), Indian Financial System and Markets, McGraw Hill Education.

ii) Reference Books

1. Frederic S. Mishkin and Stanley G. Eakins (2017), Financial Markets and Institutions, Pearson Education.
2. eff Modura (2014), Financial Institutions and Markets, Cengage.
3. Bhole. L.M and Mahukud. J (2011), Financial Institutions and Markets, Tata McGraw Hill, 5th Edition.
4. M.Y.Khan (2011), Indian Financial System, Tata McGraw Hill, 7th Edition.
5. Raghunathan. V (2010), Stock Exchanges and investment, Tata McGraw Hill.
6. Mishkin. F.S and Eakins. S.G (2009), Financial Markets and Institutions Pearson Education, 6th Edition.
7. Frank J. Fabozzi (2008), Handbook of Finance Valuation, Financing, Modelling and Quantitative Tools, John Wiley and Sons.
8. Deodhar. S.B and Sabhyankar.A(2008), Indian Financial System, Himalaya Publishing House.
9. Peter Rose and Milton Morquis (2005), Money and Capital Markets: Financial Institutions and Instruments in A Global Market Place, Richard D Irwin.
10. Brain Kettell (2001), Economics for Financial Markets, Butterworth – Heinemann, Elsevier.

Web Sources

1. https://en.m.wikipedia.org/wiki/Financial_instrument
2. <https://scripbox.com/mf/money-market-vs-capital-market/>
3. https://en.m.wikipedia.org/wiki/Stock_exchange

Title of the Course: Energy Economics and Policy

Semester: I

Course Code: LPECDS12 Contact Hours: 6hrs/w

Credits: 4

Course Learning Outcomes

On completion of the course, the students are able to

- Explain theoretically and empirically the demand for and the supply of energy and how they interact in the market.

- Explain what a sustainable energy – environment – economy path means.
- Understand and interpret the issues in power and oil sectors in India.
- Give a good understanding of the need for Government policies in various energy markets and explicate the possibilities and limitations of various policy measures of India.
- Illustrate What energy security means, how it relates to import dependence.

Pre- required Knowledge

- Energy Economics: Meaning, Scope and Nature.
- Feed - in - Law, Feed - in - Tariffs.
- Captive Vs Non- Captive coal mines - Energy efficiency.
- Green Economy - Sustainable energy sources.
- IEA, G8, G20, OPEC and EESL.

Unit I: Energy Demand and Energy Supply

Energy Resources: Classification, Properties and Forms of Energy - Economics of Depletable resources -Economics of energy demand and Economics of renewable and non-renewable energy supply - Energy and Climate Change - Role of Energy in Economic development.

Unit II: Energy Planning and Management

Energy Planning and Energy Conservation: Meaning, Objectives and Importance of sustainable energy planning – Energy Management - Meaning, Objectives, principles and Importance - Energy Auditing –Energy Accounting -Energy Conservation and Energy cost –Energy Pricing and Taxes – Renewable energy pricing: Issues and practices.

Unit III: India's Energy Sector

Indian Energy Sector- Organisational Structure –Energy Supply sources and trends in production- Energy Demand and sectorial Consumption trend- Renewable Energy Sources and Technologies- Oil production and Consumption – Oil import and export – Gas production and Consumption Growth of Installed Capacity of electricity: Thermal, Nuclear, Hydro

and renewable sources – Captive power sector – Electricity generation since 1950 – Trends in Electricity Consumption - Investment in Power Sector.

Unit IV: India's Energy Policy

Energy efficiency policies – Renewable Energy Policies – Ujjawala- UjjwalaDiscom Assurance Yojana (UDAY) – Policy on Rural electrification in India - Need for decentralised renewable energy sector - Policy of energy trading with neighbouring countries - Renewable Energy Programmes in India.

Unit V: Global Energy Policy and Oil Market

International Energy Policies of G-8 Countries- G-20 Countries- OPEC Countries- EU Countries – International Energy Treaties (Rio, Montreal and Kyoto) - Energy Charter Treaty– World oil markets and Energy Security – Role of OPEC, IEA and World Bank.

Suggested topics for group discussion/ Presentation

1. Energy consumption and Social transportation are related.
2. Pradhan Mantri Ujjwala Yojana is an ambitious social welfare scheme.
3. Pre - Ecological energy policy should be developed in the field of renewable energy development to achieve green economy.
4. Energy has strong relationships with all the dimensions of sustainable development.
5. World Bank Group plays a proactive role in promoting energy sector investment in developing countries.

Suggested Readings

i) Text Books

1. Peter Z (2019) Energy Economics, Springer, London.
2. Bhaattachary SC (2011) Energy Economics, Concepts, Issues, Markets and Governance by (London Springer, London.

3. Karpagam, M.(1991) Environmental Economics, Sterling, New Delhi.

ii) Reference Books

1. George Erdmann (2017), Energy Economics : Theory and Applications, Springer.
2. TERI (2015): Test Energy Data Directory, Year Book 2017-18, The Energy Research Institute, New Delhi.
3. Munisinghe, M. and Meter, P (1993): Energy Policies, Cambridge University press, London.
4. Agarwal, R.C. and monga, J.R., (1992) Economic and Commercial Geography, National Publishing House, New Delhi.
5. Peter. M (2017), Energy Economics, Routledge.
6. Kneese, A.V. and Sweeny, J.I (1991), Handbook of Natural Resource and Energy Economics, North Holland.
7. David Pearce et.al.,(1990): Sustainable Development- Economics and Environment in the Third world, Earths Can Publication, London.
8. Common, M (1985) Environmental and Resource Economics, Longman, London.
9. Agarwal, S.K. (1985): Environment and Natural Resources Economics, Scott Foresman & Co., London.
10. Richard Edon (1981): Energy Economics Growth, Resources and Polices, Cambridge University press, London.

Web Sources

https://en.wikipedia.org/wiki/Electricity_sector_in_India

https://en.m.wikipedia.org/wiki/Energy_planning

https://en.m.wikipedia.org/wiki/Energy_policy

Title of the Course: Advanced Microeconomic Theory II Semester: II

Course Code: LPECCT21 Contact Hours: 6hrs/w Credits: 5

Course Learning Outcomes

On completion of the course, the students are able to

- Effectively narrate how goal of a modern business firm is formed.
- Explain why product price does not fall to the level of average cost even in the long-run.
- Describe the applications of game theory in the strategic decisions making behaviour of Oligopolists.
- Understand how a factor is rewarded under different product and factor market conditions.
- Demonstrate welfare concepts and illustrate the unattainability of Pareto optimality.

Pre- required Knowledge

- Marginal cost pricing and Non - price competition.
- Normal profit, competitive price, Scale barrier and price elasticity of demand.
- Pure strategy, mixed strategy, saddle point, Payoff matrix and value of game.
- Functional and Personal Distribution- Neutral and Non-neutral technical changes.
- Positive economics and Normative economics- Edgeworth box- Inter - personal and intra - personal comparison of utility.

Unit I: Modern Theories of Firm

Marginalism - Evaluation - Full Cost Pricing Theory - Baumol's Model - Models of Williamson and Marris - Behavioural Model of Cyert and March.

Unit II: Theories of Limit Pricing

Limit pricing: Meaning, advantages and disadvantages – Theories of Limit Pricing: Bain's Model, Sylos Model, Modigliani's Model, Pashigian model - Bhagwati's Extension of Modigliani's Model - Factors Determining Limit Price.

Unit III: Theories of Games and Strategic Behaviour

Cooperative Vs Non-Cooperative Games -Dominant Strategy, Choice of an Optimal Strategy in the absence of a Dominant Strategy - Nash Equilibrium - N-M Game Theory- Prisoner's Dilemma and Instability of Cartel - Repeated

Games - Tit-for Tat Strategy - Sequential games- Bargaining Strategy - Entry Deterrence.

Unit IV: Theories of Distribution

Marginal Productivity theory, Marshall-Hicks's Version: Euler's Theorem and Product exhaustion Problem - Technological Progress and Income Share - Pricing of Factors in Competitive and Imperfectly Competitive Product and Factor Markets – Role of trade union in wage determination.

Unit V: Theories of Welfare

Welfare Economics - Definition - Role of Value Judgments – Pareto Criterion - Pareto's optimality: conditions and obstacles - Pareto's Optimality and Perfect Competition. Theory of Second Best - New Welfare Economics, Compensation Principle - Constrained Bliss - Rawl's theory of Equity - Social Welfare function - Arrow's Impossibility theorem.

Suggested topics for group discussion/ Presentation

1. Managers of corporate companies are keen on maximising sales rather than profits.
2. The Sylos – Modigliani – Bhagwati Model postulates that the limit price will be higher than the LAC due to scale barriers to entry.
3. Tit - for - tat strategy is rational when Prisoners Dilemma type of game is infinitely repeated.
4. Theory of factor pricing is a special case of general theory of pricing.
5. Kaldor -Hicks and Scitovsky criteria can be considered as an improvement over Pareto's Criterion of Social welfare.

Suggested Readings

i) Text Books

1. Ahuja. H. L, (2017), Modern Microeconomics: Theory and Applications, S. Chand and Sons, New Delhi.
2. Koutsoyiannis. A, (2003), Modern Microeconomics, Palgrave MacMillan Education.

3. Hal. R. Varian (2002), Intermediate Microeconomics – Modern Approach, 4th edn, W.W. Norton and Company.

ii) Reference Books

1. Samuelson and D. Nordhaus, (2013), Microeconomics, McGraw Hill.
2. Snyder C and W. Nicholson, (2010), Fundamentals of Microeconomics, Lengage Learning (India).
3. Dominic Salvatore, (2006), Microeconomic theory, Schaum's Outline series McGraw Hill.
4. Robert Pindyck et al, (2006), Microeconomics, Pearson Education.
5. Henderson Quant, (2003), Microeconomic Theory, McGraw Hill.
6. Paul Heyne (1997), The Economic Way of Thinking, Prentice Hall, Washington.
7. Stigler. J, (1996), Theory of Price, MacMillan Inc.,
8. Gibbons.R. (1992), Game Theory for Applied Economists, Princeton University Press.
9. Kreps David. M, (1990), A Course in Microeconomic Theory, Princeton University Press, Princeton.
10. Baumol. W.J (1978), Economic Theory and Operations Analysis, Prentice Hall of India.

iii) Web Sources

https://en.m.wikipedia.org/wiki/Theory_of_the_firm

<https://www.britannica.com/topic/distribution-theory>

<https://www.jagranjosh.com/general-knowledge/theory-of-distribution-1417407045-1>

Title of the Course: Advanced Macroeconomic Theory II Semester: II
Course Code: LPECCT22 Contact Hours: 6hrs/w Credits: 4

Course Learning Outcomes

On completion of the course, the students are able to

- Understand the contemporary developments in the Macroeconomic theoretical structure.

- Explain Neo- Classical framework of Classical economics and its policy implications.
- Explicate the micro foundations of Keynesian Economics and bring out its policy implications
- Evaluate the contributions of Mundell -Fleming to the field of Macroeconomics.
- Demonstrate the significance and relevance of economic policies under different Macroeconomic structures.

Pre- required Knowledge

- Economic goods and Non-economic goods -Theory of value.
- Aggregate supply and aggregate demand - Classical Dichotomy - Neutrality of Money – Pigou’s ideal output.
- Effective demand and under employment equilibrium.
- Fiscal Policy and Monetary policy - Internal Balance and External Balance
- Capital mobility and Types of exchange rate.

Unit I: Austrian Macroeconomics

Basic Principles of Austrian Economic Theory – Menger’s analysis – Views of Hayek, Mises and Roden – Bawerk theory of capital- Austrian Theory and Business Cycle- New Austrian Economics.

Unit II: New Classical Macroeconomics

New Classical Macro Economics- Meaning, Views of Lucas - Rational Expectations Hypothesis –Lucas Aggregate Supply Hypothesis - Criticism of New classical Macroeconomics - Supply Side Economics–Features and policy implications - Dynamic Stochastic General Equilibrium Model.

Unit III: Micro Foundations of Keynesian Economics

Difference between New Classical and New Keynesian Macroeconomics - Main Features of New Keynesian Economics: Sticky Nominal Wages, Sticky Nominal Prices, Sticky Real Wages -Coordination Failure - Staggered wage contracts theory - Policy Implications of New Keynesian Economics.

Unit IV: Macroeconomic Policies–I

Monetary Policy: Intermediate targets in the case of Demand and Supply Shocks - Rules Vs Discretion in Monetary Policy - Fiscal and Monetary Policies for Open Economy: Expenditure Reducing and Increasing Policies - Expenditure Switching Policies - Mundellian Model of Monetary and Fiscal Policies.

Unit V: Macroeconomic Policies - II

Fiscal and Monetary Policies under Fixed and Flexible Exchange Rates- Mundell- Fleming model: Fixed Exchange Rates with Perfect Capital Mobility, Flexible Exchange Rates with Perfect Capital Mobility, Fixed Exchange Rate with Relative Capital Mobility and Flexible Exchange Rate with Relative Capital Mobility- Swan Model of Monetary and Fiscal Policies.

Suggested topics for group discussion/ Presentation

1. Logic of a priori thinking is needed to discover economic laws of universal applications.
2. New classical macroeconomists have built Philips Curve without the macro models based on Neo- classical framework.
3. Coordination failure leads to economic recession.
4. Interest elasticity of Money Supply has its effect on Fiscal Policy.
5. The slopes of external and internal balance curves determine the responsiveness of monetary and fiscal policies.

Suggested Readings

i) Text Books

1. Narendra Jadhav, (2008), Monetary Economics for India, New Delhi.
2. Jhingan M.L (2006), Macroeconomics, Vrinda Publication.
3. Vaish M.C (2001), Monetary Theory, Ratan Prakashan Mandir, Agra.

ii) Reference Books

1. David Romer (2019), Advanced Macroeconomics, Mc Graw- Hill Publications.
2. Edward Shapiro (2013), Macroeconomic Analysis, Galgotia Publications.
3. Oliver Blanchard, (2011), Macroeconomics, 4th Edition, Pearson Education, New Delhi.
4. KamaranDadkha, (2010), The Evolution of Macroeconomics Theory and Policy, Springer, USA.
5. Andrew B. Abel & Ben. S. Bernanke, (2010), Macroeconomics, 4th Pearson.
6. Errol D Souza, (2008), Macroeconomics, Pearson Education, New Delhi.
7. Andrew B. Abel and Ben. S. Bernanke (2007), Macroeconomics, Pearson Education, New Delhi.
8. Thomas F. Derabug, (2001), Macroeconomics, McGraw Hill Inc, New York.
9. Richard Holt and Steven Pressman (2001), A New Guide to Post- Keynesian Economics, Roulledge, London.
10. Paul Heyne (1997), The Economic Way of Thinking, Prentice Hall, Washington.

Web Sources

<https://www.econlib.org/library/Enc/NewClassicalMacroeconomics.html>

<https://www.econlib.org/library/Enc/NewKeynesianEconomics.html>

<https://en.wikipedia.org/wiki/Macroeconomics>

Title of the Course: Mathematical Economics **Semester: II**

Course Code: LPECCT23 **Contact Hours: 6hrs/w** **Credits: 4**

Course Learning Outcomes

On completion of the course, the students are able to

- Gain knowledge on applications of Functions and Matrices in Economics.

- Demonstrate the characteristics of curves in Economics using Differential Calculus.
- Illustrate the properties of Homogeneous production function and exercise constrained optimisation technique in Economic researches.
- Compute producer's surplus and consumer's surplus.
- Apply the knowledge of LPP in Economic researches.

Pre- required Knowledge

- Addition, Multiplication and Scalar Multiplication of Matrices - Market Equilibrium.
- Slope, Intercept, Marginal concepts and Rules of Differentiation.
- Rules of partial differentiation - Constrained optimisation.
- Rules of Integration.
- Linear functions, Decision variables and objective function.

Unit I: Static Equilibrium Analysis

Determinants and properties – Transpose, Singular and Non-Singular Matrices – Rank of Matrix – Matrix Inverse – Simultaneous equations: solutions using Matrix Inverse method and Cramer's rule – Input – Output analysis – Functions and their applications in Economics – Partial Market Equilibrium.

Unit II: Comparative Statics – I

Differential Calculus: Maxima and Minima of a function with one independent variable - Applications in Economics: Marginal functions, Elasticity and Shape of graph of a function – Profit Maximisation under perfect competition, Monopoly and Duopoly markets – Cost Minimisation and Sales Maximisation.

Unit III: Comparative Statics – II

Partial Differentiation: First order and Second order partial derivatives – Total differentials – Unconstrained optimisation: Maxima and Minima of a function with two independent variables - Concavity and Convexity – Homogenous production function – Properties – Constrained optimisation:

Utility Maximisation, Cost Minimisation and Profit Maximisation.

Unit IV: Dynamics

Integration: Indefinite Integrals and Definite integrals – Applications in Economics: Consumer's Surplus, Producer's Surplus – Marginal functions to Total functions – Difference equation: First order and Second order – Applications in Economics: Cobweb Model and Samuelson's economic cycle model only.

Unit V: Linear Programming

Linear Programming: Meaning, Assumptions and Limitations – Formulation of LPP – Slack and Surplus variables – Primal Vs Dual problem – Graphical Method only – Applications in Economics.

Suggested topics for group discussion/ Presentation

1. Matrix multiplication is always associative but not commutative
2. Rate of the fall of MR curve is twice the rate of the fall of AR curve.
3. Indifference curve is convex downwards.
4. The Geometrical representation of the solution of first order Difference Equations is useful to discuss the dynamics of the equilibrium in Economics.
5. The presence of redundant constraint does not alter the optimal solutions of LPP.

Suggested Readings

i) Text Books

1. Rakesh Das (2014), Mathematical Economics, Vikas Publications.
2. Metha and Madnani (2013), Mathematics for Economists, Sultan Chand & Co., New Delhi.
3. Sydsaeter K and Hammod.P (2002), Mathematica for Economic Analysis, Pearson Educational Asia, New Delhi.

ii) Reference Books

1. Alpha C. Chiang and Kevin Wainwright (2017), Fundamental Methods of Mathematical Economics, McGraw Hill Education.
2. Malcolm Pemberton & Nicholas Rau (2017), Mathematics for Economists, Viva books publications.
3. Wolfgang Eichhorn & Winfried Gleibner (2016), Mathematics and Methodology for Economics, Springe Publications.
4. James Bergin (2015), Mathematics for Economics with application, Cenvo publisher services.
5. Sydsaeter, Knut; Peter Hammond, and Arne Strom (2012), Essential Mathematics for Economic Analysis 4th Edition, Pearson education.
6. Holden. K. and A. W. Pearson (2002); introductory mathematics for Economics and Business, McMillan.
7. Barauch S (2002), Basic mathematics and its application in Economics, McMillan.
8. Angel De La (2000), Mathematical Models and methods for Economics, Cambridge University Press.
9. Yamane Taro (1986), Mathematics for Economics, Prentice Hall of India.
10. Harvey, M Wagner (1985), Principle of Operations Research, Prentice Hall of India.

Web Sources

<https://www.mathsisfun.com/algebra/matrix-inverse.html>

<https://en.wikipedia.org/wiki/Integral>

<https://www.britannica.com/science/linear-programming-mathematics>

Title of the Course: Development Economics	Semester: II
Course Code: LPECCT24	Contact Hours: 5hrs/w
	Credits: 4

Course Learning Outcomes

On completion of the course, the students are able to

- Grasp the importance of the economic and non-economic factors of economic development implied in various theories.
- Illustrate the pre- contemporary theories of Economic development.
- Demonstrate the contemporary theories of Economic development.
- Evaluate the models of economic growth.
- Acquire knowledge on the critical issues in Economic development.

Pre- required Knowledge

- GDP, Life expectancy and Literacy rate.
- Growth Vs Development - SOC and DPA - vicious circles - Induced investment.
- Role of the technology in Economic development.
- Steady growth of full employment - Economic Dualism.
- Absolute poverty Vs Relative poverty - Urbanisation and its meaning.

Unit I: Factors and Measures of Economic Development

Conceptualizing development: GNP as development indicator - Sen's capabilities approach to development - Inequality as a constraint to growth (Kalecki) - Human Development Index - Income inequality and inverted U Hypothesis – Factors of development: i) Capital accumulation ii) Labour iii) Natural resources iv) Technological Progress v) Social institutions, cultural values and entrepreneurial ability vi) Governance and vii) people's participation in Economic Development.

Unit II: Pre- Contemporary Theories of Economic Development

Rostow stages of Economic Growth – Nelson's low-level equilibrium trap – Balanced Vs Unbalanced growth – Nurkse, Rodan, Lewis, Hirschman and Leibenstein.

Unit III: Contemporary Theories of Economic Development

Fei-Ranis theory – Jorgenson's theory – Underdevelopment as a coordination failure - Romer theory of endogenous growth – Kremer's O-Ring theory of

development – Dependence theory – Path dependence in Economic development: Krugman's theory.

Unit IV: Growth Models

Harrod - Domar model – Joan Robinson's model – Meade's model – Kaldor model – Solow Model - Mahalanobis Model.

Unit V: Issues in Economic Development

Poverty: Measurement and identification issue - Unemployment: Measurement, types, linkage between poverty and unemployment - Theories of Urbanisation (Concentric Zone Theory, Bid Rent theory and Multiple - Nuclei theory) - Rural - Urban migration – Migration theory of Neoclassical Economists.

Suggested topics for group discussion/ Presentation

1. In developed economies, the main problem is to overcome the tendency of market saturation. But in developing countries the problem is to build up the domestic market.
2. Balanced growth has so many meanings that is in danger of losing them all.
3. The Fei- Ranis model of economic growth is an extension of the Lewis model.
4. The Harrod- Domar model is a Keynesian model of economic growth.
5. The Concentric model of urbanisation is based on the process of invasion and succession.

Suggested Readings

i) Text Books

1. Jhingan M.L and Jhingan B.K (2019), The Economics of Development and Planning, Vrinda Publications Pvt Ltd.
2. Ahuja H.L (2016), Development Economics, S.Chand Publications.
3. Michael P. Todaro and Stephan C. Smith (2003), Economic Development, Pearson Education Pvt. Ltd. Singapore.

ii) Reference Books

1. Micheal P. Todaro & Stephen C. Smith (2017), Economic Development; Pearson Education Publication.
2. Debraj Ray (2009), Development Economics, Oxford University Press, New Delhi.
3. Jomo K.S. and Ben Fifth (Eds) (2005), The New Development Economics: London Zes Books and New Delhi, Tulika Books.
4. Michael P. Todaro and Stephen C. Smith (2004), Economic Development, Pearson Education, Singapore, Cha-2, 6,7,8.
5. Kaushik Basu (2003), Analytical Development Economics, Oxford University Press.
6. Yujiro Hayami (2003), Development Economics, Oxford University Press, New Delhi.
7. Amartya Sen (2001), Development as Freedom, Oxford University Press, India.
8. Grossman, G.M and E. Helpman (1991), Innovation and Growth in the Global Economy, MIT Press, Cambridge M.A.
9. Chakravarty. S (1982), Alternative Approaches to Theory of Economic Growth, Oxford University Press, London.
10. Kindleberger. C. P (1977), Economic Development, 3rd MacGraw Hill.

Web Sources

<https://www.investopedia.com/terms/u/unemployment.asp>

https://en.m.wikipedia.org/wiki/Development_economics

<https://byjus.com/questions/what-are-the-basic-issues-of-economic-development-in-india/>

Title of the Course: Economics of Health and Education Semester: II

Course Code: LPECDS21 Contact Hours: 5hrs/w Credits: 3

Course Learning Outcomes

On completion of the course, the students are able to

- Understand the application of economic theory, model and technique to the analysis of decision making by individuals and health care providers with respect to health and health care.
- Evaluate the welfare aspect of health and illustrate the problem of malnutrition.
- Demonstrate the principles and mechanisms of health financing.
- Discuss education and health as Human capital.
- Make a critical appraisal of the New Education policy of India.

Pre- required Knowledge

- Market imperfections and inequitable distribution of resources.
- Economic goods, private goods and public goods - value judgement.
- Adverse selection, Moral hazard and Principal - Agent problem.
- Neoclassical production function - private Vs social rates of return.
- India's educational policy, 1986.

UNIT I: Health Economics and Healthcare Market

Health Economics: Meaning and Objectives - Role of Health Sector in an Economy – Health Indicators - Relevance of Consumer Demand theory to Health Economics - Factors influencing Demand for Health Care service - Hospital Production Function - Objectives and Constraints - Hospital Size - Hospital Costs and Efficiency - Market Failure and role of Government in Health care - Extensive government intervention - Barrier to entry.

UNIT II: Welfare Aspect of Health and Nutrition

Health and Medical care as economic goods - Welfare aspect of Medical Care and Uncertainty - Health as Human Capital - Planning of Health Care - Measuring the effectiveness of Public Health and Medical Care Systems - Effects of Pollution on Human Health - Mal-Nutrition: Meaning, Causes, Consequences and Measures to solve the problem.

UNIT III: Health Financing Policy and Principles

Health Financing: Meaning, Objectives - Normative Economics of Health care finance and provision - Goals of Health care provision and financing - Mechanisms of Health care - Development and Community Financing - Competitive health insurance and risk adjustment - Demand for and Supply of Health Insurance - Asymmetric Information and Agency - Private Insurance - Health policy of India.

UNIT IV: Education and Economic Growth

Education as Human Capital - Measuring Contribution of Education to Economic growth: Residual, Rate of Returns and Manpower Balances Approaches - Effects of Education on Ability, Earnings, Health, Poverty and Income Distribution – Non- Market returns of education.

UNIT V: Educational Financing and Policy

Educational Financing - Resource Mobilisation and Utilisation, Pricing and Subsidies - Economics of Education Planning in Developing Countries with Special Reference to India – Case for Universal Free Primary Education – Problems of Financing Higher Education in India – New Educational Policy of India, 2020.

Suggested topics for group discussion/ Presentation

1. Health is Multidimensional.
2. The pricing practices of Health care institutions depart sharply from the competitive norm.
3. Health is considered as a public good and therefore Government needs to actively participate to ensure welfare aspect of health care.
4. Education has important non-pecuniary returns.
5. Financing higher education in India is a big challenge.

Suggested Readings

i) Text Books

1. Mukta S. Adi (2021), An Introduction to Health Economics, Current Publications.
2. Danial Jackson (2019), Health Economics Made Easy, Scion Publishing Ltd.,

3. Narasaih M.L (2011), Education and Economic Development, Discovery Publishing House.

ii) Reference Books

1. Sumitra Naha (2021), Introduction to the Economics of Health and Education, Abhijeet Publications.
2. Bhavya kumarSahni (2020), Economics of Health and Education, Shri Chakradhar Publication pvt. Ltd
3. Amutha D (2018), A Text book of Health Economics, Manglam Publications.
4. Olivier Ethgen and UifStaginnus (2017), The future of Health Economics Routledge.
5. Latchanna.G (2013), Economics of Education, Discovery Publishing House.
6. Lorna Guinness and Virginia wiseman (2011), Introduction to Health Economics, Open University Press.
7. Patrick J.Mc Ewan (2010), Economics of Education, Elsevier.
8. John Sheehan (2010), The Economics of Education, Routledge
9. Ahmed Driovchi (2009), ICTs for Health Education, and Socio Economic Politics : Regional cases, IGI Global Publications.
10. Anil Kumar Thakur (2008), Economics of Education and Health in India, Deep & Deep Publications.

iii) Web Sources

<https://en.m.wikipedia.org/wiki/Malnutrition>

<https://www.slideshare.net/rushikeshpawar779/health-planning-process>

<https://www.who.int/health-topics/health-financing>

Title of the Course: Behavioural Economics

Semester: II

Course Code: LPECDS22

Contact Hours: 5hrs/w

Credits: 3

Course Learning Outcomes

On completion of the course, the students are able to

- Demonstrate the role of intuition, emotions and beliefs in decision- making.
- Explore the implications of Heuristic, Attraction effect and Herd Mentality in human behaviour and economic outcomes.
- Describe rationality from economics and evolutionary perspectives.
- Familiarise the students with Inter - temporal Choices.
- Understand the concept of Nudging and suggest welfare improving policies.

Pre- required Knowledge

- New classical behaviour of individuals and firms.
- Cognition – Altruism and reciprocity - social and personal capital.
- Neo- Classical behaviour of individuals.
- Moral decision, Utility decision and elasticity of substitution.
- Relative positioning and influencing human behaviour without coercion.

UNIT I: Behavioural Economics: History and Overview

Behavioural Economics: Meaning, Objectives and Scope – Origin and Development of Behavioural Economics – Relation with other disciplines – Methodology of Behavioural Economics – Role of Intuition, Emotions and Beliefs in decision making.

UNIT II: Foundations of Behavioural Economics

Heuristic: Availability vs Representativeness – Attraction effect (Degoy Effect) – Anchoring in consumer behaviour – Status to Bias – Herd Mentality – Reflective system vs Automatic system of thinking – Regulatory focus theory.

UNIT III: Rationality from Economics and Evolutionary Perspective

Elsberg's paradox -Different ways to define Rationality - Individual vs Group rationality - Herbert Simon and Bounded Rationality - Demand by Average Investors - Belief biases: Limited attention and categorisation - Non-traditional preference - Prospect theory and Loss aversion.

UNIT IV: Inter-temporal choice

The discounted utility model (Origin, features, methodology, anomalies with discounted utility models) – Individual differences in measured discount rates - Alternative inter-temporal choice models (time preference, time inconsistent preferences, hyperbolic discounting and modifying the instantaneous functions) – Utility Maximisation over two periods - Temporal preferences and Rationality - Inter-temporal optimisation.

UNIT V: Nudging and Policy design

Nudging: Meaning and Types – Libertarian Paternalism – Choice Architect – Nudging in public policy- Simplification of Information and choice default – Regulatory methods and delivery - Nudging and Health promotion.

Suggested topics for group discussion/ Presentation

1. Rationality of Individuals in decision- making is bounded by limited information, finite amount of time and cognitive limitations of minds.
2. People engage in self-regulations to focus on prevention to avoid undesirable outcomes.
3. Investors value gains and losses differently.
4. The theory of Discounted Utility is the most widely used framework for studying inter-temporal choices.
5. Nudging vitiates personal autonomy and violates human dignity.

Suggested Readings

i) Text Books

1. SanjitDhami (2016), The foundations of Behavioural Economic Analysis, Oxford University press.
2. Erik Anger (2012), A course in behavioural Economics, pal grave Macmillan.
3. Edward, Cartwright (2011), Behavioural Economics, Rout ledge Publications.

ii) Reference Books

1. Brandon Lehr (2021), Behavioural Economics, Routledge.
2. David Orrell (2021), Behavioural Economics, Icon books.

3. Michelle Baddeley (2017), Behavioural Economics, Oxford University Press.
4. Matthias Klaes (2017), An Introduction to Behavioural Economics, Palgrave.
5. Michelle Baddelers (2016), Behavioural Economics and Finance, Routledge.
6. Richard H Thaler (2015), Misbehaving the making of Behavioural Economics, Penguin Publishers.
7. World Development Report (2015), Mind, Society and Behaviour.
8. Peter Diamond and HonnuVartiainem (2014), Behavioural Economics and its Applications, Princeton University Press.
9. Nick Wilkinson (2012), An Introduction to Behavioural Economics, palgrave Macmillan.
10. Altman. M (2007), Handbook of Contemporary Behavioural Economics: Foundation and Developments, Prentice Hall India.

iii) Web Sources

https://en.m.wikipedia.org/wiki/Behavioral_economics

https://en.wikipedia.org/wiki/Discounted_utility

https://en.m.wikipedia.org/wiki/Nudge_theory

Title of the Course: Foundations of Data Science **Semester: II**

Course Code: LPECAE21 **Contact Hours: 2hrs/w** **Credits: 2**

Course Learning Outcomes

On completion of the course, the students are able to

- Develop skills to analyse economic problems and exploit big data to take economic decisions in any sector.
- Demonstrate how raw data can be converted to machine - readable form.
- Explain the tools of Exploratory Data Analysis.
- Acquire the skill of grouping objects or things of the same kind into subsets called clusters.
- Gain knowledge on the process of translating large data sets and metrics into various visuals.

Pre- required Knowledge

- Mathematics and programming languages.
- Knowledge of business models and their features.
- Univariate analysis and multivariate analysis.
- Numerical taxonomy.
- Graphical and diagrammatic representation of data.

Unit I: Basic Concepts

Data Science: Meaning and Objectives – Big data and Big Data Bias – Datafication: Meaning and Need in Business Organisation – Data Fundamentalism – Matrices to represent relationship between data – Linear algebraic operations on Matrices – Matrix decomposition: Singular Value Decomposition (SVD) and Principal Component Analysis (PCA).

Unit II: Data Processing I

Data Pre-processing: Data Cleaning – Data Integration – Data Reduction – Data transformation – Data Discretization – Confusion Matrix – ROC Curves.

Unit III: Data Processing II

Exploratory Data Analysis (EDA) – Basic Tools of EDA – Types of EDA methods: Univariate Graphical, Univariate non-graphical, Multi- Variate Graphical and Multi Variate non-graphical- Purpose, Advantages and Disadvantages of EDA.

Unit IV: Clustering

Clustering in Data science – Types of Data Used in Cluster Analysis – Classification vs Clustering – Clustering in Big Data – Conditions of Clustering – Features of Good Clustering in Data mining – Clustering Method: K- Means Clustering.

Unit V: Data Visualisation

Data Visualisation: Meaning, Goals, Importance and Types (basic Vs Interactive) - Components of Visualisation – Data Visualisation Vs Data Analytics – Visualisation Tools.

Suggested topics for group discussion/ Presentation

1. The SVD can be applied to any $m \times n$ matrix, whereas eigen value decomposition can only be applied to diagonalisable matrices.
2. AVC and ROC curves can be used for multi-class classification.
3. The particular graphical techniques exercised in EDA are often quite simple, consisting of various techniques of plotting the raw data.
4. Clustering in data mining differs from classification.
5. Data visualization differs from Data Analytics.

Suggested Readings

i) Text Books

1. Samvel Burns (2019), Fundamentals of Data science, Independently Published.
2. Mohammed J. zakiandwagnetmiera (2014), Datamining and Analysis: fundamental concepts and Aigorithms, Cambridge university, press.
3. Cathy O.neil and Rachel schutt (2014), Doing data science, strawght talk, front line.

ii) Reference Books

1. Harsha Patil(2021), Foundations Of Data Science, NiraliPrakashan Publishing House.
2. Aurim Blum, John Hoprssoft and ravindiamKannan(2020) Foundations of data Science, cambridge university press.
3. David King (2019), Business Intelligence, Analytics and Data Science: A Managerial Perspective, Pearson Education Press.
4. Runzeli (2018) stahihealfoundations of data science, Taylor France publications.
5. PremaAlla(2018), Introduction to Data Science Using R, BSP Publishing House.
6. Sharma (2017), Data Science Fundamentals and Practical Approaches, BPB Publications.
7. Mohammed Ali (2016), Introducing Data Science, Dreamtech Press.

8. Matt harrisoa(2016),learning the pandas library pythanJoo is for Data muaging, Analysis, and visualization, o' Rellypuslibers.
9. Ravindran Kannan(2016), Foundations Of Data Science, Cambridge University Press.
10. Das. N (2015), Data Science for professional, shroff Publishers.

Web Sources

https://en.wikipedia.org/wiki/Data_visualization

https://en.m.wikipedia.org/wiki/Data_transformation

https://en.m.wikipedia.org/wiki/Data_visualization

Title of the Course: Economics of Information	Semester: II
Course Code: LPECAE22	Contact Hours: 2hrs/w
	Credits: 2

Course Learning Outcomes

On completion of the course, the students are able to

- Gain knowledge of Information as a public commodity and its applications to a wide range of real world economic issues and solutions.
- Examine why price differs at the same product across customers and markets.
- Understand the extent to which asymmetric information can lead to adverse selection and moral hazard problems.
- Explain the tools and the techniques used in the models of moral hazard and adverse selection.
- Demonstrate how to articulate pragmatic, principle-based policies to overcome the problems of moral hazard and adverse selection in Labour Market, Insurance, Banking and Retail Sectors.

Pre- required Knowledge

- Rationality and Bounded rationality - Information – Knowledge.
- Economic good - Underwriters - Consumer reports.
- Economic efficiency and Information asymmetry - Negative externalities.

- Market for Lemons and Similarity of Graham's Law about money circulation.
- Retail Sector: Single brand and Multiple brand - A curial Life Tables.

Unit I: Information Economics: Basic Concepts

Information Economics: Meaning and Importance – Information Goods - Value of Information - Transaction cost Vs information cost – Information gathering and Price Dispersion – Information Economy and its features - Role of Information in Economics.

Unit II: Information Theory

Model: Stigler's Model, Stiglitz's Model and Varian Model – George Akerlof theory of Market for Lemons - Efficient Market hypothesis - Information as a public good - Role of Mass Media and Government in providing information.

Unit III: Models of Moral Hazard

Static Models: Principal Agent problem and Moral Hazard problem in teams - Dynamic Models: Self- Enforcing Contract - Hold up Problem and Information disclosure - Incentives in Principal Agent Problem.

Unit IV: Adverse Selection and Mechanism Design

Adverse Selection: Theory of Screening and Theory of Signalling - Mechanism Design: Auctions, Bilateral Bargaining - Vickrey- Clarke- Groves (VCG) Mechanism.

Unit V: Asymmetric Information

Asymmetric Information in Insurance, Banking and Retail Sectors - Asymmetric Information and Labour Market.

Suggested topics for group discussion/ Presentation

1. Price dispersion is evident in both online and offline markets.
2. Existence of price and wage variability for similar goods and resources is necessary to achieve economic efficiency when there are positive costs of acquiring information.
3. Much of moral hazard is actually efficient.

4. A lack of equal information causes economic imbalances that result in moral hazard and adverse selections.
5. Market Signalling is an important mechanism in labour market to deal with the problem of asymmetric information.

Suggested Readings

i) Text Books

1. H.L Ahuja (2019), Advanced Economic Theory, S.Chand and Sons, New Delhi.
2. Przemyslaw Deszczynski (2015). The Economics of Information, MIT University, press.
3. Ines macho-stadler (2001), An Introduction to the Economics of Information: Incentives and contracts, oxford University, press.

ii) Reference Books

1. Monika Butler (2018), Information Economics, Rout ledge publications.
2. Malcom Galatin and Robert D.Leiter (2016), Economics of Information, springer, Switzerland.
3. Pascal Petit (2016), Economics and Information, Klucrer Academic Publishers.
4. Hal.R Varian (2004), The Economics of Information, Cambridge University Press.
5. Bruce R.Kingma (2001), The Economics of Information, Libraries Unlimited Inc.
6. Ian Molho (1997), The Economics of Information, wiley Publishing company.
7. Roy J. Ruffin and Paul R. Gregory (1990), Principles of Economics, Fourth Edition, Scott Foresman and company, United States of America
8. Robert's Pindyck and Daniel L Rubin Feld (1989), Micro Economics, Maxwell Macmillan International Edition, New York.
9. Jacob marschak (1989), Economic Information, Decision, and prediction, springer.

10. Stonier. Tom (1989) The New Economics of Information, Intermediate Technology, Publications.

iii) Web Sources

https://en.m.wikipedia.org/wiki/Information_economics

https://en.m.wikipedia.org/wiki/Moral_hazard

https://en.m.wikipedia.org/wiki/Information_asymmetry

Title of the Course: Economics of Crime	Semester : II
Course Code: LPECSC21	Contact Hours: -
	Credits:-

Course Learning Outcomes

On completion of the course, the students are able to

- Understand the complexity of the Economics of crime and debates surrounding the ways and means to deal with crime.
- Gain knowledge of various models of the Economics of crime and their applications.
- Narrate the causes of return of an offender to criminal behaviour following conviction.
- Make a comparative analysis of various theories of punishment.
- Evaluate the organised crimes from economic perspective.

Pre- required Knowledge

- Expected utility of criminal and legal activities.
- Neo classical theory of demand.
- Opportunity cost of crime - Trade off between immediate returns and future cost.
- Work and Crime: Mutually exclusive events.
- Concept of social capital stock - Poor labour market opportunities.

Unit I: Economic Concepts and Crime

Crime: Meaning and legal definition – Types of crime – Economics Vs Criminology –Crime and Rationality –Time Preference and Criminal Behaviour - Intertemporal choice and

crime - Diminished Rationality - Fundamentals of cost – Benefit analysis of crime.

Unit II: Economics of Criminal Behaviour – I

Microeconomic model of Criminal Behaviour – Gary Becker Model - Supply curve of offences - Technological change and Crime – Macroeconomic Explanations of Criminal Behaviour – Marxian model of Criminal Behaviour - Incentive based economic model of crime.

Unit III: Criminal Discount Rate and Recidivism

Criminal discount rate – Economic theory of Recidivism – Causes of Recidivism – Prevention of Recidivism in Criminal Law - Risk preference of criminals.

Unit IV: Crime Deterrence and Punishment

Punishment: Meaning and Types (Corporal and Non-Corporal Punishments) – Theories of Punishment: Deterrence theory – Retributive theory, Preventive theory and Reformatory theory.

Unit V: Economics of organized Crime

Diversification and change – Economic costs of organized crime – Economic Analysis of organized crime – Strategies for Fighting organized crimes.

Suggested Readings

i) Text Books

1. Zagros MadjdSadjadi (2018), The Economics of Crime, Business, Expert Press.
2. Harold Winter (2016), The Economics of Crime, Routledge, New York.
3. Hellman D and Alper N (2006), Economics of Crime, Pearson Publishing House.

ii) Reference Books

1. Goran Skogh (2020) , New Perspectives on Economic Crime, Edward Elgar.
2. Reichel P L and Jay Albanse (2019), Handbook of Transnational Crime and Justice, Sage Publications.

3. Rottenberg Simon (2018), The Economics of Crime and Punishment, American Enterprises Institute for Public Policy Research, Washington
4. KarabiKanch (2017), Crime and society, Notion Press.
5. QuabVoe (2016), Illegal Markets and the Economics of Organised Crime, Taylor & Francis Ltd.
6. Anthony M Yezer (2015), Economics of Crime and enforcement, Taylors & Francis Ltd.
7. Bensons B L and Zimmermann R L (2013), Handbook on the Economics of Crime, Edward Elgar Publishing.
8. Paul R. Zimmerman (2012), Handbook on the Economics of Crime, Edward Elgar.
9. Robert Witt (2012), The Economic Dimensions of Crime, Palgrave, USA.
10. Eugene Smith (2010), The Cost of Crime, Gala Making of Modern Law Publishing House.

iii) Web Sources

<https://en.m.wikipedia.org/wiki/Crime>

<https://www.e-criminalpsychology.com/criminal-behavior/>

<https://en.m.wikipedia.org/wiki/Recidivism>

Title of the Course: Economics of Art and Culture

Semester: II

Course Code: LPECSC22 Contact Hours: -

Credits: -

Course Learning Outcomes

On completion of the course, the students are able to

- Gain a background knowledge on a variety of theories and issues related to the cultural economics.
- Conceptualise the market structure of cultural industry.
- Improve their understanding of the unique economic strengths and challenges of cultural industry.
- Highlight the economic principles that govern the performing art which is an economic good protected by copyright law.
- Explain how international trade and tourism determine the progress of cultural institution.

Pre- required Knowledge

- Intrinsic and economic values of goods.
- Basic ideas about performing arts, visual arts and cultural Institutions.
- Intermediate microeconomics for understanding market structure.
- Labour theory of Value.
- Basic concepts of cultural tourism.

Unit I: Basic Concepts of Cultural Economics

Cultural Economics: Meaning, Importance and Scope - Cultural goods Vs Economic Goods - Adam Smith views on price of cultural goods - Failure of Diminishing Marginal Utility theory - Cost disease - Cultural goods as addictive goods.

Unit II: Culture and Economy

Value approach to culture – Relationship of values to norms – Culture and economic development – Culture, region and economic ethic – Economic Culture and Modernization – Material Culture and Consumption- Contributions of Visual Arts- Performing Arts and Cultural Institutions in the economy.

Unit III: Market Structure of Cultural industry

Oligopoly and Cultural industry - Economic agents determining values - Anticipated gains from synergy and market power - Artist's labour market: Unequal income distribution and excess supply of labour, intangible returns to labour - Non-separation of artisans and work star system for more earnings - Art market and investment.

Unit IV: Economics of performing Arts

Economic History of Music business - Music as an economic good - Music labour markets - Economics of Music copy right - Economics of digital music business - Secondary Music markets - Cost disease in Music Market.

Unit V: Culture, Trade and Tourism

Developing structure to develop and manage Tourism and Culture - Complexities and Challenges of Policy Making in Tourism and Culture - Trade in Cultural goods - Relationship

between trade and Culture - Culture transmitted through trade
- Cultural changes.

Suggested Readings

i) Text Books

1. Ruth Towse (2016), Introduction to Cultural economics, Cultural economics, Cambridge University Press.
2. Nina Bandelj (2015), Culture and Economy, International Encyclopaedia of the Social & Behavioural Sciences, Elsevier Publications.
3. David Throsby (2014), Economics and Culture, Cambridge University Press.

ii) Reference Books

1. Devdutt, Pattanaik (2021), Indian Culture, Art and Heritage, Pearson India.
2. Vinita Pandey (2021), Indian Society and Culture, Rawat Publications.
3. Nitin Singhanian (2019), Indian Art and Culture, McGraw Hill.
4. James E Doyle (2017), Culture, Innovation and the Economy, Routledge.
5. Bruno S.Frey (2016), Economics of Art and Culture, Springer.
6. David throsby (2016), The Economics of Cultural policy, Cambridge University press.
7. Ruth Towse (2015), Hand book of cultural Economics, Edward Elgar Publishing Ltd.
8. Banerjee utpal (2011), Luminous Harmony: Indian Art and culture Niyogi publishing House.
9. Victor A.Ginsburgh and David Throsby (2006), Handbook of the Economics of Art and Culture, North-Holland.
10. Charles M.Gray and James Heilbrun (2001), The Economics of Art and Culture, Oxford University Press.

iii) Web Sources

1. www.catdir.loc.gov
2. www.in.sagepub.com
3. www.cambridge.org

Title of the Course: International Economics	Semester: III
Course Code: LPECCT31 Contact Hours: 6hrs/w	Credits:5

Course Learning Outcomes

On completion of the course, the students are able to

- Elucidate the modern theories of international trade and pinpoint the dynamic factors leading to international trade.
- Evaluate the Adjustment Mechanism for Balance of Payments problem.
- Describe the Economic integration Schemes and demonstrate their need.
- Explain how tariff and quota restrict international trade.
- Understand the evolution of International Monetary System (IMS) and international liquidity problem.

Pre- required Knowledge

- Autarky – Offer Curve – Reciprocal demand – Vent for Surplus.
- Pure theory of International trade.
- Balance of Trade – Balance of Payments: Meaning and Structure – Official Reserve Account.
- MPS and MPM – Advalorem – Dumping – Infant Industry.
- Gold Standard – Brettenwoods system.

Unit I: Theories of International Trade

Heckscher- Ohlin theorem- Factor - Price Equalisation Theorem - Leontief Paradox - Technological Gap and Product Life Cycle Models - Stolper- Samuelson Theorem- Rybcznski's Theorem - Dynamic factors in International trade.

Unit II: Theories of Balance Of Payments

Balance of Payments: Disequilibrium - Causes and measures to correct disequilibrium - Adjustment Mechanism: Elasticity Approach- Absorption and Monetary Approaches – Current Account deficit vs Trade deficit.

Unit III: Economic Integration

Economic integration: Meaning and Forms - Free Trade Area, Common Markets, Customs Union and Economic Union -Theory of Customs Union (Viner Theory) - Factors preventing

developing countries from forming Economic Union - Economic Integration Schemes: APEC, EEC, SAARC and ASEAN (Only).

Unit IV: International Trade Multiplier and Trade Restrictions

Foreign trade multiplier - Foreign Trade restrictions: Tariff and Quotas - Non - tariff barriers - Deemed Trade - Counter Trade - Subsidy and trade barriers.

Unit V: International Financial Institutions and IMS

IMF, IBRD, NDB and ADB: Objectives and Functions- International Liquidity Problem - International Debt Problem- International Monetary System (IMS).

Suggested topics for group discussion/ Presentation

1. Dynamic factors play a key role in international trade.
2. Balance of Payments always balances.
3. The economic integration of various countries may take a variety of forms.
4. The phasing out distortionary government subsidies to international trade will yield an extraordinarily high benefit - cost ratio.
5. The International Monetary System evolves to multipolar, away from the dollar.

Suggested Readings

i) Text Books

1. Mannur. H.G (2018), International Economics; Vikas Publishing House.
2. Dominik Salvatore, (2014), International Economics: Trade and Finance, John Wiley International Student Edition.
3. Awasthi, G.D, (2009), International Economics, Prakashan Kendra.

ii) Reference Books

1. Francis Cherunilam (2017), International Economics, McGraw Hill Education.
2. Dennis R.Appleyard and AlfreddJ.Field Jr. (2016), International Economics McGraw Hill HED Publications.

3. Paul. Krugman, Maurice Obstfeld, and Marc Metity (2012), International Economics: Theory and Policy, Addison – Wesley (Pearson Education Indian Edition).
4. Jagadish Bhagwati (2008), Termites in the Trading System: How Preferential Agreements Undermine Free Trade, Oxford University Press, London.
5. Giancarlo Gandolfo, (2006), International Trade, Springer International Edition.
6. Joseph E. Stiglitz and Andrew Chaiton, (2005), Fair Trade for All: How Trade Can Promote Development?, Oxford University.
7. Robert J. Carbaugh, (2004), International Economics, Thomas South Western.
8. Thomas A.Paul, (2004), International Economics, Tata McGraw Hill.
9. Cherulian, Francis, (2001), International Economics, Tata McGraw Hill Publishing company Ltd, New Delhi.
10. Soderston, B.O, (1991), International Economics, The MacMillan Press Ltd, London.

iii) Web Sources

https://en.m.wikipedia.org/wiki/International_trade_theory

https://en.m.wikipedia.org/wiki/Economic_integration

<https://www.investopedia.com/terms/e/economic-integration.asp>

Title of the Course: Applied Econometrics

Semester:III

Course Code: LPECT32

Contact Hours: 6hrs/w

Credits: 4

Course Learning Outcomes

On completion of the course, the students are able to

- Fit the MLRM and apply it in social science researches.
- Gain knowledge on Estimation problems in MLRM.
- Get trained in the art of economic modelling using Dummy Variables.
- Illustrate the problems of Simultaneous equation bias and identification.
- Demonstrate the methods of estimating Simultaneous equation models.

Pre- required Knowledge

- SLRM and its estimation using OLS.
- Level of Significance, Variance and Co-variance.
- Qualitative Vs Quantitative Variables.
- Set of Linear Simultaneous Equations.
- Specification bias.

Unit I: Multiple Linear Regression Model (Estimation)

Multiplication Linear Regression Model (MLRM): Assumptions and Statistical properties of estimators – Model with two explanatory variables only – t- test for testing the parameter estimates – R^2 and F – Overall significance of MLRM.

Unit II: Multiple Linear Regression Model (Estimation Problems)

Auto–Correlation: Meaning, causes, consequences, tests for detecting it and solutions – Heteroscedasticity: Meaning, causes, consequences, tests for it and solutions – Multicollinearity: Meaning, causes, consequences, test for it and solutions - Errors in variables.

Unit III: Dummy Variables

Dummy Independent Variables: Meaning – Dummy variable coding – ANNOVA Vs ANCOVA -Features and Uses – Dummy Variable as an alternative to Chow's Test - Dummy Dependent Variable: Logit, Probit and Tobit models.

Unit IV: Simultaneous Equation Models (Formulation)

Simultaneous Equations: Meaning – Simultaneous equation bias: Meaning and Consequences – Endogenous and Predetermined variables – Structural Model: Reduced form and Recursive Model – Identification problem: Meaning, conditions and implications – Identification and Multicollinearity.

Unit V: Simultaneous Equation Models (Estimation)

Indirect Least Squares (ILS) method: Assumptions and properties of ILS estimates - Two stage Least Squares method: Assumptions and properties of 2 SLS estimates – Method of Instrumental Variables.

Suggested topics for group discussion/ Presentation

1. MLRM is widely used in social science research.
2. Multi Collinearity is a problem of estimation and not of prediction.
3. Probit model has limited role in social science research.
4. Cobweb model is recursive.
5. Two Stage Least Squares (TSLs) is a special case of instrumental variables regression.

Suggested Readings

i) Text Books

1. Damodar Gujarati (2012), *Econometrics by Example*, Palgrave MacMillan.
2. Koutsiyannis,A.(2008), *Theory of Econometrics*, MacMillan, New Delhi.
3. Maddala G. (1977), *Econometrics*, McGraw Hill Kogakusha, Ltd., Tokyo.

ii) Reference Books

1. William H.Greene (2018), *Econometric Analysis*, Pearson Education Publications.
2. James H.StockandMark.W.Waston (2017), *Introduction to Econometrics*, Pearson Publications.
3. DamodarN.Gujarati and Dawn Porter.C (2017), *Basic Econometrics*, Mc Graw Hill Publications.
4. Christopher Dougherty (2016), *Introduction to Econometrics*, OUP Oxford Publications.
5. JeffercyM.Wooldridge (2014), *Introductory Econometrics. A Modern approach*, Cengage Publications.
6. Apte P.G. (2002), *Text Book of Econometrics*, Tata McGraw-Hill, New Delhi.
7. Carl, F. Christ (1998), *Econometric Models and Methods*, Wiley, New York.
8. Johnston, J. and John Dinardo, (1997), *Econometric Methods*, 4th Edition, McGraw-Hill Companies, Inc., London.

9. Kalirajan K.P. (1995), Applied Econometrics, Oxford and IBH, New Delhi.
10. Kmenta. Jan (1986), Elements of Econometrics, Macmillan Publishing Company, New York.

iii) Web Sources

https://en.m.wikipedia.org/wiki/Simultaneous_equations_model

<https://www.displayr.com/what-are-dummy-variables/>

https://en.wikipedia.org/wiki/Simon%27s_problem

Title of the Course: Agricultural Economics **Semester: III**

Course Code: LPECCT33 **Contact Hours: 6hrs/w** **Credits: 4**

Course Learning Outcomes

On completion of the course, the students are able to

- Grasp the contribution of agriculture to Indian Economy and understand the sources of agricultural finance in India.
- Evaluate the institutional and technological reform measures taken for Indian agricultural development.
- Demonstrate the role of NABARD in rural credit and examine the problem of rural indebtedness.
- Make a critical appraisal of agricultural price policy of India and assess the food security problem in India.
- Gain knowledge on WTO and Indian agriculture.

Pre- required Knowledge

- Agricultural productivity, farm size, crop rotation and cropping pattern.
- Self-sufficiency and self -reliance.
- Taccavi loan, short term vs long term agricultural loans.
- Marketed surplus vs marketable surplus, Minimum Support Price.
- MNC vs TNC and globalisation.

Unit I: Agriculture and Economic Development

Importance of agriculture in Indian economy – Agricultural growth since 1950-51 – Causes for low productivity in Indian Agriculture - Comparative Study of Traditional and Modern

Agriculture – Crop Pattern in India – Possibility of doubling farm income.

Unit II: Agricultural Development Programmes

Land Tenure System: Pre-independence period and post-Independence period – Land Reforms Policy in India – Impact of Land Reforms – Reasons for Slow Progress – Suggestions for Improvement- Green revolution – Watershed development programmes – Crop insurance Scheme – Agricultural input subsidy.

Unit III: Agricultural Finance

Agricultural Finance: Meaning and Sources – Commercial Banks and Agricultural Credit - NABARD and Cooperative Credit Movement – Rural indebtedness: Causes, Consequences and measures to reduce it.

Unit IV: Agricultural Marketing and Food Security

Marketing System – Cooperative Marketing and Warehousing in India – Regulated Market- Agricultural Prices and Price Policy – Role of Commission for Agricultural Costs and Prices (CACPC) - Fixation of Minimum Support Price: A_2 + FL Method and C_2 Method - Food Problem- PDS and Food Security Act – National Commission on farmers (M. S Swaminathan report).

Unit V: Agriculture and WTO

International Trade in Agricultural commodities; – Commodity agreements – Role of WTO - Issues in Liberalisation of domestic and international trade in agriculture – Role of MNCs – Impact of Globalisation on Indian agriculture.

Suggested topics for group discussion/ Presentation

1. Doubling farmers' income is an urgent agenda for planners in India.
2. Integrated Watershed Management Programme (IWMP) is the second largest watershed programme in the world after China's.
3. There are many challenges in ensuring institutional credit for farmers in India.

4. C₂+50 formula of MSP can change the economic conditions of peasants.
5. The classification of agricultural subsidies according to the WTO boxes is appropriate.

Suggested Readings

i) Text Books

1. Sai Prasad S. V, Srinivas. K, Vikas Kumari and Kantwa S.R (2017), Agricultural Economics, Pearson education.
2. Tyagi B.P (2016), Agricultural Economics and Rural Development, Jai Prakash Nath and Co, Meerat.
3. Bigrami S.A.R (1996), Agriculture Economics, Himalaya Publishing House.

ii) Reference Books

- 1 John B.Penson, Oral Capps and Parr Rossan. Cand Richard Woodward. T (2019), Introduction to agricultural Economics; Pearson Publications
- 2 Leki R.K. Joginder Singh (2018), Agricultural Economics – An Indian perspective, Oxford Publications.
- 3 Malvikasingh (2017), Agricultural Economy of India, Ingram Short Title Publications.
- 4 Vaidyanathan, A., (2010), Agricultural Growth in India : The Role of Technology, Incentives and Institutions, 2nd edition, Oxford University Press, New Delhi.
- 5 Bhalla, G.S., (2007), Indian Agriculture Since Independence, National Book Trust, New Delhi.
- 6 Rao, C.H. Hanumantha, (2005), Agriculture, Food Security, Poverty and Environment: Essays on Post – Reform India, Oxford University Press, New Delhi.
- 7 Acharya, S.S and N.L. Agarwal, (2004), Agricultural Marketing in India, 4th edition, Oxford University Press, New Delhi.
- 8 Rao.C.H, Hanumanthe, (1994), Agricultural Growth, Rural Poverty and Environmental Degradation in India, Oxford University Press. New Delhi.

- 9 Dantwala, M.L, (1991), Indian Agricultural Development since Independence, Oxford University Press. New Delhi.
- 10 Prafulla Sanghavi (1969), Surplus Manpower in Agriculture and Economic development, Asia Publishing House, Bombay.

Web Sources

<https://prsindia.org/policy/analytical-reports/state-agriculture-india>

<https://gacbe.ac.in/pdf/ematerial/18MEC44E-U4.pdf>

<https://agmarknet.gov.in/>

Title of the Course: Research Methodology and Indian Database **Semester: III**

Course Code: LPECCT34 **Contact Hours:5hrs/w** **Credits:4**

Course Learning Outcomes

On completion of the course, the students are able to

- Get trained to conduct a survey of literature for a social science research.
- Explain how a research problem is identified and independently plan the research study from scratch.
- Illustrate the determination of sample size and the adoption of sampling techniques.
- Competently interpret data and prepare a research report.
- Explore the published sources of secondary data on Indian Economy.

Pre- required Knowledge

- Research: Meaning, purpose and types.
- Margin of error and confidence level.
- Nominal, Interval and ratio levels data.
- Guidelines for report writing.
- Published Vs Unpublished secondary data: Meaning - Formal documentation.

Unit I: Research: Fundamentals and Literature Review

Research: Meaning, Objectives and types – Philosophy of empirical research – Literature Review: Meaning, Objectives and need – Types of Literature review -Relationship between theory and fact – Planning systematic review – Meta analysis: Importance, Basic principles and procedure – Systematic review Vs Metaanalysis.

Unit II: Research Problem and Research Design

Research Problem: Identification and Selection - Research Design: Concepts relating to Research Design - Features of a Good Research Design - Descriptive, Diagnostic and Experimental Research Designs - Hypothesis: Meaning, formulation, types, sources and characteristics.

Unit III: Sampling Methods and Data Collection

Sampling: Meaning - Sample Size and Sampling Error – Sampling Methods: Random Vs Non – Random Methods - Methods of Primary Data Collection: Interview Schedule and Questionnaire Methods, Observation Method - Social Survey - Case Study Method - Scaling Techniques: Likert and Thurstone techniques only.

Unit IV: Interpretation and Report Writing

Interpretation of Data: Need and Technique - Precautions in Interpretation - Report writing – Steps in report writing – types of reports – Format of research report – use of Footnotes - Quotations and Citations in Research Report - Guidelines for the preparation of Bibliography.

Unit V: Indian Database

NITI Aayog report - Economic Survey - Census Report - Government Publications: Report on currency and Banking, Statistical abstract of India, RBI Bulletin, Agricultural Statistics of India, NABARD report - Labour Gazette, Indian Foreign Statistics - Publication by Trade Business Association: FICCI and ASSOCHAM - International Publications: reports of IMF, World Bank, WTO,WHO and ADB - District Statistical Hand book, G returns.

Suggested topics for group discussion/ Presentation

1. There are many types of literature review. The choice of a specific types depends on research design and approach.
2. Research problem has to be selected from the view of point of social relevance.
3. Determining the appropriate sample size is one of the most important factors in social science research and Data analysis is a messy, ambiguous, time consuming, creative and fascinating process.
4. The guidelines for report writing have to be followed carefully for effective communication.
5. Handbook of Statistics on Indian Economy published by the RBI provides time series data on various economic variables.

Suggested Readings

i) Text Books

1. Kothari. C. R (2010), Research Methodology, Vikas publishing House, New Delhi.
2. Gupta, S. P. (2012), Statistical methods, Sultan Chand& sons, New Delhi.
3. Paulina V. Young (1984), Scientific Social Survey and Research, Prentice Hall of India, New Delhi.

ii) Reference Books

1. John W. Criswell and David. J. Criswell (2018), Research Design: Qualitative, Quantitative and Mixed Methods Approaches, Sage Publication International.inc.
2. Jason. S (2012), Quantitative Research Methods for Communication: A Hands-on Approach, Oxford University press, Oxford.
3. Upadhyay. M. M (2009), Research in Economics, Areas, Methods & Guidelines, Sawstik publishers and Distributors, New Delhi.
4. Geoffrey. R Marczyk (2005), Essentials of Research Design and Methodology, Wiley Publication, New Jersey.
5. Frank Miller Chapman (1993), The fundamentals of Logic, Charles Series, London.

6. Kurien, C.T (1992), A Guide to Research in Economics, Sangam Publishers, Chennai.
7. Ramachandran. P (1971), Training in Research Methodology in Social Science in India, ICSSR, New Delhi.
8. Kane, E.J.(1968), Economics statistics and Econometrics, Harper International publishers(P)Ltd, North-Holland.
9. Goode, William, J and Halt, Paulk (1952), Methods in Social Research, McGraw-Hill, Book company, New York.
10. Westway (1952), Scientific Methods. Its Philosophy and Practice, Blockle, Bombay.

iii) Web Sources

https://en.m.wikipedia.org/wiki/Research_design

https://en.m.wikipedia.org/wiki/Data_processing

https://en.m.wikipedia.org/wiki/Economic_survey_of_India

Title of the Course: SET / NET Examination for Economics Semester: III

Course Code: LPECAE31

Contact Hours: 2hrs/w

Credits: 2

Course Learning Outcomes

- Gain knowledge on Multiple choice questions on the concepts and theories of microeconomics.
- Acquire knowledge on Multiple choice questions on the concepts and theories of macroeconomics.
- Competently attend multiple choice questions on the fundamentals of Statistics, econometrics and Mathematical economics.
- Learn the subject matters of international economics, money and banking and environmental economics to answer the multiple choice questions.
- attend the multiple choice questions on Indian economy and practice themselves for competently appearing for SET / NET Examination.

Pre required Knowledge:

- Basic concepts of Microeconomics.

- Basic concepts of Macroeconomics.
- Fundamentals of quantitative techniques used in Economics.
- Factors determining Economic development of a country.
- Fundamentals of Indian Economy.

Unit I: Microeconomics

Consumer Behaviour, Production and cost theories - Decision making under uncertainty – Game theory – Market structures, competitive and non-competitive equilibria and their efficiency properties – Factor pricing – General equilibrium analysis – Efficiency criteria: Pareto- optimality, Kaldor – Hicks and Wealth Maximisation – Welfare economics – Fundamental theorems and Social welfare function – Asymmetric information: Adverse Selection and Moral Hazard.

Unit II: Macroeconomics

National Income: Concepts and Measurement – Determination of output and employment: Classical and Keynesian Approach – Consumption function – Investment function – Multiple and Accelerator – Demand for and supply of money – IS LM model.

Unit III: Quantitative techniques

Probability theory – Descriptive statistics – Correlation – Index numbers – Sampling methods – and sampling distribution – Hypothesis testing - Linear regression model – BLUE – Identification problem – Simultaneous equation model: Recursive and non- recursive – Discrete choice models – Time series analysis – Sets, functions and continuity, sequence, series – Application of Differential calculus – Linear algebra and Matrices – Static optimization problems – Input-output model – Linear programming – Difference and differential equations.

Unit IV: Monetary, Banking and Trade

Components and money supply – Central bank and Commercial bank - Instruments and working of monetary policy – Non- banking financial institutions - Capital market and its regulation – Theories of International trade –

International trade under imperfect competition – Balance of Payments: Composition, equilibrium and disequilibrium and Adjustment mechanisms – Exchange rate: concepts and theories – Foreign Exchange Market and Arbitrage – Gains from Trade, Terms of trade and trade multiplier.

Unit V: Growth and Development

Theories of economic development: Adam Smith, Ricardo, Marx, Schumpeter, Rostow, Balances and Unbalanced growth, Big push approach – Endogenous growth - Harrod- Domar, Solow, Robinson and Kaldor models – PQLI, HDI and SDGs – Poverty and inequalities: Concepts and measurements – Economic growth in India: Pattern and Structure of agriculture, Industry and Service sectors – India's foreign trade: Structure and Direction, BoP, Flow of foreign capital, trade policies – Infrastructure Development: Physical and Social: Public – Private Partnerships in India – Reforms in land, labour and capital markets in India – Centre – State financial relations and Finance Commissions of India: FRBM – Poverty, Inequality and Unemployment.

Reference Books

1. Ahuja. H. L, (2017), Modern Microeconomics: Theory and Applications, S. Chand and Sons, New Delhi.
2. Jhingan M.L (2006), Macroeconomics, Vrinda Publication.
3. Gupta. S.P (2010), Statistics, S.Chand, New Delhi.
4. Koutsiyannis, A. (2008), Theory of Econometrics, MacMillan, New Delhi.
5. Dominik Salvatore, (2014), International Economics: Trade and Finance, John Wiley International Student Edition.
6. Musgrave R. A (1989), The theory of Public Finance, McGraw Hill, Kogakshusa, Tokyo.
7. M.Y.Khan (2011), Indian Financial System, Tata McGraw Hill, 7th Edition.
8. Ramesh Singh (2019), Indian Economy for Civil Services, Universities and Other Examinations, McGraw Hill Education, New Delhi.

9. RuddarDutt and Sundaram, (2018), Indian Economy, S. Chand, New Delhi.
10. Uma Kapila (Ed.) (2018), Indian Economy Since independence, Academic Foundation, New Delhi, 29th Edition.

iii) Web Sources

https://en.wikipedia.org/wiki/Market_failure

<https://en.m.wikipedia.org/wiki/Probability>

https://en.m.wikipedia.org/wiki/Economy_of_India

 Title of the Course: Time Series Analysis

Semester: III

Course Code: LPECAE32

Contact Hours: 2hrs/w

Credits: 2

Course Learning Outcomes

On completion of the course, the students are able to

- Identify and abstract the properties of time series data.
- Provide an analytical introduction to time series econometrics and the challenges that present themselves with the analysis of time series economic data.
- Equip them with the analytical tools to carry out Econometric researches using time series data.
- Apply time series econometrics to economic data for forecasting.
- Gain knowledge on econometric tools that are used to compute parameters and draw valid inferences when data are longitudinal.

Pre- required Knowledge

- Random variable - Time series Vs Cross sectional data.
- Long-run Vs Short-run equilibrium in Economics.
- Concepts of Auto correlations and Moving average - Heteroskedasticity.
- Lagged variables and Linear combination of variables.
- Uni-dimensional Vs Multi-dimensional data.

UNIT I: Stationary Process

Time series Data: Stationary and Non-Stationary Process
- Spurious Regression -Random Walk Model and White noise
- Trend Stationary Vs Difference Stationary – Correlogram–
Auto Correlation Function (ACF) and Partial Auto Correlation
Function (PACF) - Unit Root Test: Dickey – Fuller (DF) and
Augmented Dickey- Fuller (ADF).

UNIT II: Cointegration

Cointegration: Meaning and Test for Cointegration: Engle
– Granger (EG) or Augmented Engle- Granger (AEG) Test,
Cointegrating Regression Durbin- Watson (CRDW) Test –
Error Correction Mechanism (ECM) - Causality.

UNIT III: AR and MA PROCESS

Autoregressive Process (AR), Moving Average
(MA)Process. Autoregressive (AR) and Moving Average
(MA)Process and Autoregressive Integrated Moving Average
(ARIMA) Process – B- J (Box – Jenkins) Methodology.

UNIT IV: ARCH and GARCH

ARCH and GARCH: Modelling for forecasting, differences
and uses of ARCH and GARCH Models – Types of GARCH
Model.

UNIT V: VAR MODELLING

Vector Auto Regression (VAR): Estimation Forecasting
Application – Difficulties in estimating VAR Model.

Suggested topics for group discussion/ Presentation

1. Traditional econometric techniques such as OLS are poorly suited to the estimation of economic models using data which exhibit non-stationary processes.
2. Two series are cointegrated if they are unit – root non-stationary individually.
3. BJ forecasts data using Autoregression, Differencing and Moving Average.
4. GARCH is the “ARMA equivalent’ of ARCH.
5. The variance of time series data on stock prices is heteroskedastic.

Suggested Readings

i) Text Books

1. Damodar N. Gujarati (2020), basic Econometrics, Tata McGraw Hill Education pvt Ltd, New Delhi.
2. Navdeep Hour and Shyamala. S. (2018), Econometrics Theory and Applications, Vishal Publishing co.,
3. Koutsoyiannis. A (1973), Theory of Econometrics, Palgrave Macmillan Publishing company, London.

ii) Reference Books

1. Chun ki min (2019), Applied Econometrics: A practical Guide, Routledge Publications.
2. Christopher Dousherty (2016), Introduction to Econometrics, Oxford University, press.
3. Loknath (2015), Econometric Methods, Gullybabcb Publishing House Pvt. Ltd.
4. Robert H. Shumway (2014), Time series analysis and its applications, Springer International Publishing House, Switzerland.
5. Robert H. Shumway and Davis S. Stoffer (2014), Time Series Analysis and its Applications, Springer.
6. George E.P. Box (2013), Time series analysis forecasting and control, John Wiley & sons, New Jersey.
7. Richard A. Davis (2009), Time Series : Theory and Methods, Springer.
8. Henrik Madsen (2007), Time Series Analysis, Chapman & Hall / CRC, Taylor & Francis Group.
9. Gregory C. Reinsel (2004), Time Series Analysis : Forecasting and Control, Pearson Education.
10. James D. Hamilton (1994), Time series Analysis, Princeton University Press.

iii) Web Sources

<https://www.influxdata.com/what-is-time-series-data/>

https://en.wikipedia.org/wiki/Panel_data

https://en.m.wikipedia.org/wiki/Panel_analysis

Title of the Course: Economics of Family and Gender	Semester: III
Course Code: LPECSC31	Contact Hours: -
	Credits:-

Course Learning Outcomes

On completion of the course, the students are able to

- Understand patrilineal and matrilineal systems and their relevance to current scenario.
- Evaluate women's decision- making power at household and community levels.
- Analyse women's contributions to national income.
- Appreciate women's labour force participation in agriculture and non-agriculture sectors.
- Elucidate policies and programmes for gender equity and gender equality.

Pre- required Knowledge

- Household - Family - Economic Family.
- Patriarchy in Feminism - Women's Subordination - Evolutionary Psychology.
- Unjust social system.
- Division of labour - Labour theory of value.
- Women empowerment - Nirbhaya Fund.

Unit I: Economics of Family

Household's Resource allocation - Becker's Economic Theory of Family – Children as Economic goods and family size – Economic perspective on marriage – Economic aspect of Family system - Joint family Vs Nuclear Family – Home for aged people.

Unit II: Theoretical Approaches in Gender Economics

Gender Economics: Meaning and Scope – Gender issues in economic theory – Gender division of work – invisibility of Women's work – Gender budget – Gender Audit. Approaches: Women in development (WID) and Women and Development (WAD) – Gender and Development (GAD). Neoliberal Approach to Gender Development.

Unit III: Conceptualisation of Women's Work

Women work: Time use pattern – Valuation of productive and unproductive work – visible and invisible work – paid and unpaid work – economically productive and socially productive work – economic status – private property and participation of women in pre-industrial and industrial societies – female contribution to National income.

Unit IV: Women and Labour Markets

Female entry in labour market-supply of and demand for female labour in developed and developing countries - Female work participation in Agriculture- large scale enterprises, informal sector, cottage and small scale industries and service sector – Factors determining gender division of labour– Gender wage differential and factors determining it.

Unit V: Gender Planning and Programmes

Gender and Development index – Mainstreaming gender into development policies – Gender planning techniques; Paradigm shifts from women's well being to women Empowerment – Democratic decentralization (Panchayats) and women empowerment in India - Indian Government schemes for women empowerment.

Suggested Readings

i) Text Books

1. Martin browning and yoram Weiss (2018), Economics of the Family, Cambridge university press.
2. Mukesh Easwaran (2014), Why Gender Matters in Economics, Princeton University Press, USA
3. Rac. Lesser. Blubberty (1991), Gender Family, and Economy: The triple overlap, sage publications, New Delhi.

ii) Reference Books

1. Carole spray (2019), Gender, development, and the state in India, Routled of publications. Amitasahage, sunitakaisthe and vibhutipatal(2014), gender and development, the women press, Canada.
2. UNDP (2018), Human Development Report, Oxford University Press, New York.
3. World Economic Forum (2018), The Global Gender Gap Report, The World Bank India.
4. Lisa kolovich (2018), Fiscal policies and gender equalist, International monetary Fund.

5. IGNOU (2018), Gender Issues in work Employment and production, shrichakradher publication private Limited.
6. Mukesh Eswaran (2014), Why gender matters in Economics? Princeton University Press, New Jersey.
7. Joyce P.Jacobsen (2013), The Economics of Gender, Wiley-Black well publishing House.
8. Janet Honshallmosen (2010), Gender and Development, Rootledge publications.
9. Shoshana A Gross bard (2010), The Economics of the Family and Family policy, Elgar publications, USA.,
10. Desai N and M K Raj (Eds) (1979), Women and society in India Research centre for Women Studies, SNDT University, Bombay.

iii) Web Sources

https://en.m.wikipedia.org/wiki/Family_economics

<https://hdr.undp.org/en/content/gender-development-index-gdi>

<https://ourworldindata.org/female-labor-supply>

Title of the Course: Economics of Technology and Innovation	Semester: III
Course Code: LPECSC32	Contact Hours: - Credits:2

Course Learning Outcomes

On completion of the course, the students are able to

- Understand the conceptualisation of innovation and learn the difference between Linear and chain linked models.
- Demonstrate how diffusion of innovation is measured.
- Examine the policy instruments for green innovation and its diffusion.
- Explicate the characteristics and effects of technological innovation.
- Learn the international rules and norms underlying international technology transfer.

Pre- required Knowledge

- Invention Vs Innovation
- Historical Development of the concept of diffusion - Adopters Vs Laggards

- Incentives Vs Subsidies - Green innovation
- Historical development of Technological innovation
- Concepts of Embodied and Disembodied technologies

Unit I: Innovation: Conceptualisation

Innovation: nature and importance -Incremental innovation - Innovation in the context of developing countries - Radical and Disruptive innovations and User led Innovations - Marx's views on technology - Schumpeter's views on forms of innovation - Linear Vs Chain Linked model of innovation.

Unit II: Innovation: Measurement and Diffusion

Conventional Vs New Indicators - Composite Measures of Innovation - Total Factor Productivity (TFP)- Roger's Diffusion theory of innovation - Rationale behind diffusion - Estimating the relationship between diffusion of innovation and economic growth of a nation.

Unit III: Innovation: Policy Instruments for Generation and Diffusion

Financial Instruments (R&D tax incentives, Research grants, soft Loans and Venture Capital) - Regulatory Instruments: IPRS - Non -financial instruments (Supply of human resource in Science and engineering, Industrial standards and Clustering) - Measuring the effectiveness of Innovation policy Instrument - policy instruments for green innovation - Choice of innovation policy instruments.

Unit IV: Technological Innovation

Technological innovation – characteristics, components and advantages - Technological innovation: a tool for corporate strategy - effects of technological innovation on wages, income inequality and organisational culture – Technology and Globalisation - Role of Internet - Social media - Innovation - Digital Contact tracing - Remote everything - Multi-Skilled Artificial Intelligence.

Unit V: International Technology transfer

Market for disembodied technologies - Issues related to technology transfer - Channels of technology transfer - Relationship between technology imports and local Technogym generating efforts - Changes in International governance rules with respect to promotion of innovation: R &

D subsidies public procurement and potential and actual effects of TRIPS - Compliance of domestic patent regimes - MNCs as a source of technology spill over to local companies.

Suggested Readings

i) Text Books

1. Nikos Vernandakis (2016), Innovation and Technology: Business and economics approaches, Routledge
2. Paul stone man (1995) , Handbook of the Economics of innovation and Technological change, John Willey.
3. Ralph Landau's (1991), Technology and Economics, National Academy of Engineering, Washington DC.

ii) Reference Books

1. Nicholas, S. Vonoratas (2021), the challenges of technology and Economic catch-Up in Emerging Economies, Oxford University press.
2. Cristiano Antonelli (2020), Assessing Technology and Innovation Policies, Routledge.
3. Jan Fagerberg, and David, C. Mowery (2018), Innovation, Technology and Economic Change, Edward Elgar Publishing House.
4. Daniel, K. N, Johnson (2016), Technology, Innovations and Economic Development, SAGE Publications India private Ltd.
5. Albert. N. Link (2014), Handbook Of the Economics of Knowledge, Routledge.
6. Greenhalgh, Christine and mark Rogers (2010), Innovation, Intellectual property and Economic Growth, Princeton university press.
7. Hall, Brownyn and Nathan Risenberg (2010), Handbook of the Economic of Innovation, Elsevier
8. David Gautsehi (2010) Technological Innovation and Economic Transformation, Palgrave Mcmillan.
9. Donald S. Siegal (2002), The Economics of Science and Technology, Springer.

10. Gerhard Rosegger(1996), The Economics Of production and Innovation, The MIT Press.

iii) Web Sources

<https://innovation>

entrepreneurship.springeropen.com/articles/10.1186/s13731-016-0042-z

<https://cleartax.in/g/terms/financial-instrument>

https://en.m.wikipedia.org/wiki/Technological_innovation

DEPARTMENT OF ENGLISH - PG-CBCS -LOCF

Title of the Course: English For Career Development (NME) Semester: III
Course code: LPENNM31 Contact hours: 5hrs/w Credits: 4

Course Learning Outcomes:

On completion of the course, the students are able to

- have the comprehensive understanding of the language ability required in the competitive examination
- effectively use the vocabulary for the fluent and accurate communication
- exercise their grammatical competence in their communications
- confidently meet the job interview requirements
- practise the proficient language skills in all Professional and social interactions

Pre-required knowledge:

- Use of Basic Grammar for Job
- Communicative English for Career
- Writing Skills for Job Purposes

Unit I

Situational Grammar, Tenses, Voices, Prepositions, Articles

Unit II

Sentence Completion

One word Substitution

Homonyms

Phrasal Verbs

Unit III

Reading Comprehension
Analogy
Jumbled Sentence
Errors and How to avoid them

Unit IV

Job Application and Preparing a CV
Expansion of Idea
Report Writing
Essay Writing

Unit V

Interview
Group Discussion
Tips for taking Exam

Suggested Topics for presentation:

- Application process for various jobs
- Providing strategies for identifying the jobs
- Preparing resume for professional jobs
- Writing a clear and concise formal letter
- Developing interview skills

Suggested Readings:

i)Text Book:

Bhatnagar,R.P.English for Competitive Examinations,
Madras: Laxmi Publication, 2009.

ii) Reference Books:

1. Sharma, Manish. ITI Employability Skills. Neelk and publishers, 2016.
2. Dixit, Shilpi. Employability Skills. BFC Publications,2021.
3. Dhanavel, S. P. English and Soft Skills. Orient Blackswan, 2011.

iii) Web Source:

1. <https://www.coursera.org/learn/careerdevelopment>

2. <https://www.my.mooc.com/en/mooc/english-for-careerdevelopment>
3. <https://www.naukri.com/learning/english-for-careerdevelopmentcourse-couri202>

DEPARTMENT OF HISTORY – PG - CBCS – LOCF

Course Title : Indian History for Competitive Exams (NME) Semester: III

Course code: LPHSNM31

Contact Hours: 5

Credits: 4

Course Learning Outcomes:

On completion of this course, the students are able to

- understand the Indus Valley Civilisation.
- explain the administration of Mughals.
- analyse the causes and result of 1857 Mutiny.
- describe the salient features of Constitution of India.
- assess the current events in India and abroad.

Pre- required knowledge:

- Topics of competitive exams.
- Need of General Knowledge.
- Importance of Competitive exams.

Unit I : Ancient Indian History

Sources, - Indus Valley Civilization- Vedic Period -
Mauryan Dynasty Buddhism and Jainism- Guptas.

Unit II: Medieval Indian History

Advent of Islam- Establishment of Delhi Sultanate –
Mughals and Marathas- Advent of Europeans-Expansion and
consolidation of British Rule- Social Reforms-Religious
Movements.

Unit III: Indian National Movement

1857 Revolt - Indian National Congress – Gandhian Era
– Role of Tamil Nadu in Freedom Struggle.

Unit IV: Indian Polity

Constitution of India-Preamble- Salient Features -
Fundamental Rights and Duties - Panjayat Raj - Center and

State Relation- Emergency Provisions- Election Commission- Amendments.

Unit V: Current Events

Profile of States - Defense - National Security and Terrorism, NGO - Eminent Persons and Places- Sports - Books and Authors-Cultural Panorama – Historical Events in India – Covid 19 .

Suggested topics for group discussion and presentation:

- Mauriyan Administration.
- Establishment of Delhi Sultanate.
- Indian National Movement.
- Emergency Provisions.
- Covid 19

Suggested Readings:

Text Books:

1. Ishwari Prasad, History of Medieval India, The Indian Press Ltd., Calcutta, 2006.
2. BipinCandra, History of Modern India, Orient Blackswan Publication, Hyderabad, 2009.

Reference Books:

1. NilakandaSastri, K. A. History of South India, Oxford Publication, Calcutta, 1982.
2. Basham, A.L. Wonder that was India, Rupa and Co Publisher, Delhi, 1967.
3. Bipan Chandra, Modern India, NCERT, New Delhi, 2005.
4. India and the contemporary World- I and II, NCERT, New Delhi.2000
5. Indian History, Part I,II, and III, NCERT, New Delhi,2007.

Web Sources:

- www.clearIAS.com
- www.jagranJosh.com
- www.UPSC.gov.in

DEPARTMENT OF COMMERCE - PG - CBCS - LOCF

Title of the Paper: Entrepreneurship Development (NME) Semester: III
Course Code: LPCONM31 Contact Hours: 5hrs/w Credit: 4

Course Learning Outcome:

- On completion of the course, the students are able to
- know the factors affecting entrepreneurial growth.
 - identify the problems faced by women entrepreneurs.
 - identify the various institutional support to the entrepreneur.
 - advocate for subsidy and incentives to be received from the Government.
 - prepare the project reports.

Pre-required knowledge:

- Entrepreneurial venture
- Scope for women entrepreneurship
- Financial assistance from government

Unit- I: Introduction to Entrepreneurs

Entrepreneur - Definition - Concept - Characteristics - Qualities - Classification of entrepreneurs - Entrepreneur Vs Manager - Role of Entrepreneurs in the economic development -- Factors affecting entrepreneurial growth. Entrepreneurship- Concept - Distinction between Entrepreneur and Entrepreneurship

Unit- II: Women Entrepreneurs

Introduction - Definition - Problems - Suggestions to overcome - Government steps towards Women Entrepreneurs - Institutions support to women Entrepreneurs in India.

Entrepreneurship Development Programmes (EDP): Meaning - Objectives - Stages in EDP- Pre-training Stage - Training phase - Post Training - Evaluation and Feedback of EDP.

Unit- III : Assistance to Entrepreneurs:

Financial and Non-Financial Institutions - TIIC and SFC - DIC - SIDBI - SIDCO - Commercial Banks.

Unit- VI : Incentives and Subsidies:

Incentives and subsidies of State and Central Govt - Objectives -Aims - Tax Concession - Assistance to MSME's - Backward areas - Industrial Estates

Unit-V : Project Report:

Meaning - Steps - Contents - Reasons for failure of a Project Report – Format – Guidelines.

Suggested Topics/Practical Exercises:

The learners are required to

- list the various factors affecting entrepreneurial growth.
- explain the steps to overcome the problem face by women entrepreneur.
- name any two financial institutions supporting entrepreneurs to grow in Tamilnadu.
- cite examples for the growth of business using Seed Capital Assistance / Scheme.
- draw a project report for a new business concern.

Suggested Readings:

(i) Text Books

1. Gupta.C.B. (2018). Entrepreneurship Development. New Delhi: Sultan Chand and Sons.
2. Gordon. E. and Dr. Natarajan. K. (2020). Entrepreneurship Development. Mumbai: Himalaya Publishing House.

(ii) Reference Books

1. Gupta . C.B.& Srinivasan. N.P. (2018), Entrepreneurship Development. New Delhi: Sultan Chand and Sons.
2. Khanka S.S. (2018) Entrepreneurial Development. New Delhi: S.Chand & Company Ltd..
3. Kanishka Bedi. (2012). Management and Entrepreneurship, New Delhi: Oxford University Press.

(iii) Web-Sources:

1. www.tiic.in
2. www.sidco.in
3. www.dic.in

DEPARTMENT OF MATHEMATICS – PG – CBCS - LOCF

Title of the Course: Mathematics for Competitive Examinations (NME)

Semester: III

Course Code: LPMSNM31

Contact Hours : 5hrs/w

Credits: 4

Course Learning Outcomes:

On completion of the course, the students are able to

- formulate the problem quantitatively
- recall appropriate arithmetical methods to solve the problem
- demonstrate various principles involved in solving mathematical problems.
- evaluate various real life situations by resorting to analysis of key issues and factors
- develop various mathematical skills to solve the problems

Pre-required Knowledge:

- Addition and subtraction
- multiplication and division
- product tables

Unit I: Quantitative Aptitude - I

HCF and LCM of numbers-Decimal Fractions – Simplification - Average-Problems on numbers-Problems on ages.

Unit II: Quantitative Aptitude – II

Percentage-Profit and loss-Ratio and proportion- Partnership-Simple interest-Compound interest.

Unit III: Quantitative Aptitude - III

Time and work-Time and distance-Problems on trains- Alligator or mixture.

Unit IV: Quantitative Aptitude and logic

Calendar – Clocks – Stock and shares - Odd man out and series.

Unit V: Reasoning

Verbal and non-verbal reasoning- verbal Reasoning – Analogy - Mathematical operations – Inserting the character. Non-Verbal Reasoning – Analytical Reasoning

Suggested Topics for Group Discussion/ Presentations:

1. Simplification
2. Simple and compound interest
3. Problems on trains
4. Stock and shares
5. Non-verbal reasoning

Suggested Readings:

(i) Text Books:

1. R.S. Agarwal, Quantitative Aptitude for Competitive Examinations Revised and Enlarged edition, S.Chand Publications, New Delhi, Reprint 2007.
2. R.S. Agarwal, Verbal and Non-Verbal reasoning S.Chand Publications, New Delhi, Reprint 2009.

Unit I: Book1: Section 2,3,4,6,7& 8.

Unit II: Section 10,11,12,13,21 & 22.

Unit III: Section 15,17,18& 20.

Unit IV: Section 27,28,29 & 35.

Unit V: Book 2: Part I – Section I- 2,13 &16. Part II – Section – 4

(ii) Reference books:

1. R.Gupta, Quantitative Aptitude, Unique Publishers Pvt. Ltd, 2013.
2. Arora. P.N. and Arora. S., Quantitative Aptitude Mathematics, Volume-1
S Chand & Company Ltd., New Delhi, 2009.
3. Kothari. C.R., Quantitative Techniques, Vikas Publishing House Pvt. Ltd., New Delhi, 1989.
4. Srinivasan. T.M., Perumalswamy. S. and Gopala Krishnan. M.D., Elements of Quantitative Techniques, Emerald Publishers, Chennai, 1985.

(iii) Web Resources:

1. <https://mathematician0.weebly.com/>
2. <https://youtu.be/rHzggZDdtdc4>

3. <https://youtu.be/ZADjT-wsQJw>
4. <https://youtu.be/ETiRE7N7pEI>
5. <https://www.youtube.com/watch?v=tnc9ojlTRg4&list=PLpyc33gOcbVA4qXMoQ5vmhefTruk5t9It>

DEPARTMENT OF CHEMISTRY – PG – CBCS-LOCF

Title of the paper: CHEMISTRY FOR ALL (NME) Semester: III

Course Code:LPCHNM31 Contact Hours: 5hrs/w Credits: 4

Course Learning Outcomes:

- On completion of the course, the students are able to
- know the basic chemistry involving types of elements and chemical reactions.
 - study different concepts of acids and bases and various chemical processes
 - gain awareness on Pollution and types of pollution
 - know the details of plastics, glass, cement, types of fuels
 - gain knowledge in vitamins, food adulterants and Classification and biological functions of antibiotics

Pre-Required Knowledge

- Properties of Metals and non-metals
- Isotopes, Isobar and isotones
- Stability of Colloidal solution
- Thermosetting and thermoplastics
- Green house effect and global warning

Unit I: BASIC CHEMISTRY- I

Elements – atoms and molecules – Metals and non metal – metalloids, alloy, ore and minerals - Chemical formulae and symbols – Important basic terms such as pressure, volume, atomic mass, molecular mass, temperature, atomic number – Types of chemical reactions (exothermic and endothermic, Physical and chemical changes, oxidation and reduction) – ideal and real gas - Important laws of Chemistry (Boyle’s law, Charles’s law, Hess’s law, Graham’s law of diffusion, Beer’s law,

Henry's law, Faraday's law, Law of conservation of matter or energy).

Unit II: BASIC CHEMISTRY- II: (Only elementary idea can be given)

Different concepts of Acids and Bases (Arrhenius, Bronsted and Lewis) – pH concept (no calculation) – Water – Hard and soft water - Chemical nature of metals- Steel and iron (no manufacture) – heat treatment of steel – Solutions and their types (True, Colloidal and suspension) – uses of colloidal solution – Buffer solution – Nuclear Chemistry – isotopes and radioactivity Definitions of some important chemical processes (Haber's, Contact's, Ostwald's, Processes)

Unit III: ENVIRONMENTAL CHEMISTRY

Pollution and types of pollution – Composition of atmosphere – Major regions of atmosphere and their characteristics – Elementary idea of Green house effects and Acid rain – Air pollution – Control of air pollution and their harmful effects – CFC, Global warming, substitute for CFC (Just name only)-Water pollution – Dissolved oxygen – BOD, COD and TDS (elementary idea only)

Unit IV: CHEMISTRY IN SERVICE OF MAN –I: (Only elementary idea can be given)

Plastics – Classification with examples – Polymer (natural and synthetic) – Soaps and Glass – Annealing of glass – Cement – Constituents and setting and hardening of cement – Rubber – Types with examples and vulcanization of rubber- Corrosion of metal – prevention – Lubricants (definition and classification) – Fuel – Classification with suitable examples - calorific value – LPG and Rocket fuel.

Unit V: Chemistry in service of man –II: (Only elementary idea can be given)

Food adulterants – common food adulterants and their harmful effects and tests to identify them– Classification and biological functions of Vitamins A, B6, B12, C, D, E and K (structural elucidation not required) – Classification and

biological functions of antibiotics – penicillin, chloroamphenicol, streptomycin and tetracycline.

Suggested Topics For Group Discussion/ Presentations

- Metals and nonmetal
- Steel and iron
- Green house effects
- vulcanization of rubber
- organic and Inorganic pesticides

Suggested Readings

Text Books:

1. A Text book of Environmental Chemistry, O.D.Tyagi, M. Mehra, Anmol Publication, 1990.
2. Puri, Sharma and Pathania, Principles of Physical Chemistry, Vishal Publishing Co., 2004
3. Puri, Sharma and Pathania, Principles of Inorganic Chemistry, Vishal Publishing Co., 2004

Reference Books:

1. Applied Chemistry, K. BagawathiSundari, MJP Publishers, Chennai – 2006.
2. General Studies Manual, The TMH Publishers, 2008
3. Basic concepts of chemistry (HB) by Pegasus sold by Amazon Asia-Pacific Holdings Private Limited, 2018.

Websites and e-Learning Sources:

1. <https://youtu.be/eJXL0lrbtqE>
2. <https://2012books.lardbucket.org/pdfs/beginningchemistry.pdf>
3. <https://youtu.be/J0v3stz7izA>
4. <https://youtu.be/EyBkPwsRY2E>
5. https://youtu.be/yU3GwJu_yNA
6. <https://youtu.be/uMBeXHnWhsE>
7. https://youtu.be/lUg7r7fu_eo
8. <https://youtu.be/eJXL0lrbtqE>

DEPARTMENT OF BOTANY - PG - CBCS - LOCF

Title of the Course: Plants and Human Welfare (NME) Semester: III
Course Code: LPBYNM31 Contact hours: 5hrs/w Credit:4

Course Learning Outcomes:

On completion of the course, the students are able to

- acquire knowledge on Plants as food
- understand the cultivation of mushrooms.
- recognize the need of plant drugs.
- familiarize with the wood and its types.
- come to know about the Organic farming.

Pre-required knowledge:

- Plant groups
- Raw drugs
- Farming techniques

Unit I: Plants as food

Importance of plant genetic resources and utilization. Present status of resources in India. Agricultural, vegetable, horticultural and medicinal plants. Higher plants as food - Cereals- Rice, Pulses- Pigeon pea.

Unit II: Cultivation of mushrooms – Pleurotus

General characters of mushroom – present status of the mushroom industry in India common edible and non-edible mushrooms. Nutritive and Energy value of edible mushrooms.

Unit III: Biological Drugs

Brief history and scope of raw drugs of plant origins. Definition, herbals, classification and description. Classification of vegetable drugs. Biological sources of drugs.

Unit IV: Timbers

Structure of wood, sap wood – heart wood transition, properties of wood (Physical, chemical & mechanical). Dendrochronology and its significance. Commercial uses of woods of South India - Teak (*Tectona grandis*), Neem (*Azadirachta indica*).

Unit V: Organic farming

Organic farming, vermin-composting. Leguminous plants in green manuring. Biofertilizer -Rhizobium and Blue green algae (Nostoc); Biopesticides: Bacillus thuringiensis.

Suggested Topics for Seminar/Presentation/Group Discussion:

- Plants as food
- Recent methods for mushroom cultivation
- Biological sources of drugs
- Dendrochronology and its significance
- Techniques of vermicomposting and Methods of organic farming

Suggested Readings:

Text Books:

1. Albert F. Hill. (1952). Economic Botany. Tata McGraw-Hill Publishing Company Ltd., New Delhi.
2. Pradeep Sachdeva. (2014). A Naturalists Guide to the Trees & Shrubs of India. Prakash books Publishers, Chennai. ISBN: 978817599408.
3. Board Eiri (2008) Hand Book of Tree Farming. Engineers India Research Institute Publishers. New Delhi.
4. Suman, B.C. & Sharma, V.P. (2007). Mushroom cultivation in India. DayaPublishingHouse, Delhi.

Reference Books

1. Dorian Q. Fuller, Eleni Asouti.(2008)Trees and Woodlands of South India. Munshiram Manoharlal Publishers. New Delhi. ISBN: 9788121512145.
2. Sanjay Tiwari, and Nikhil Devasar. (2019). 100 Indian Trees: The Big Little Nature Book. DK India publishers, New Delhi.
3. Neginha S.G. (2020). Forest Trees of South India. Notion Press publishers, Chennai.

4. Diego Cunha Zied, Arturo Pardo-GimAcnez. (2017). Edible and Medicinal Mushrooms: Technology and Applications. John Wiley & Sons.
5. Kochhar, S.L. (1981). Economic Botany in the Tropics. McMillan India Ltd., Madras.
6. Mukharjee, S.K. (1969). Survey of Plants of India. Bull. Botanical Survey India, 11(3): 217-223.
7. Sambamurthy, A.V.S.S. and N.S. Subramaniam. (1989). A Textbook of Economic Botany. Wily Eastern Ltd., New Delhi.
8. Albert E Hill and O P Sharma (1996). Economic Botany. Tata McGraw Hill Co. Ltd., New Delhi.
9. Anonymous. (1948-1976). The Wealth of India - A Dictionary of Indian Raw Materials and Industrial Products. Vol. I to X. Publication and Information Directorate, CSIR, New Delhi.

Web Sources:

1. <https://byjus.com/biology/food-sources-animal-plant-products/>
2. <https://foodplantsinternational.com/>
3. https://namyco.org/mushroom_cultivation_resources.php
4. <https://www.fs.fed.us/wildflowers/ethnobotany/medicinal/index.shtml>

DEPARTMENT OF PHYSICS – PG – CBCS - LOCF

Title of the Course: Physics for Competitive Examinations (NME) Semester: III

Course Code: LPPNM31 Contact Hours: 5hrs/w Credit: 4

Course Learning Outcomes:

- On completion of the course, the students are able to
- understand various systems of units and newton’s laws of motion
 - acquire the basic knowledge on gravitation
 - understand the various aspects in electrostatics and electricity
 - have knowledge on various properties of light

- understand the electronic devices, circuits and various number systems

Pre-Required Knowledge:

- Gravitational force, acceleration due to gravity mass and other physical quantities
- Heat, energy, temperature, basic mathematics, basic ideas on charge and current
- Elementary idea on planetary systems and space

Unit I: Systems of Units and Newton's Laws

System of units S.I.- Fundamental units- derived units – Dimension of physical quantity – uses of dimensional equations – limitation of dimensional analysis. Force and inertia, Newton's first law of motion – momentum – second law of motion – conservation of linear momentum – Newton's Third law of motion – friction – laws of limiting friction – static and dynamic friction.

Unit II: Gravitation

Gravitation-Kepler's law of planetary motion – universal law of gravitation – acceleration due to gravity – variation of 'g' at poles – equator – Altitude – depth – rotation of earth – difference between mass and weight – Inertial mass and gravitational mass –Satellite – Orbital velocity – escape velocity – Rocket.

Unit III: Electrostatics and Electricity

Charge and fields – Coulomb's law – electric field due to a point charge – Gauss law – Application of Gauss law – Electric field due to parallel sheet of charge – Electric potential –Potential due to a point charge – Capacitor – Principle of a capacitor – Capacitance of a parallel plate capacitor –Effect of dielectric on capacitance – current and resistance – Electric current –Current density – Expression for current density – Ohm's law and electrical conductivity – Kirchoff's law – Application of Kirchoff's law to Wheatstone network and measurement of resistance.

Unit IV: Optics and Sound

Light – Reflection of light – Laws of reflection – Refraction of light – Laws of reflection – Dispersion visible range dual nature – Total internal reflection – Laser – Interaction of light with matter – Population inversion - Applications of laser. Simple Harmonic motion – Progressive wave properties – stationary waves – properties – ultrasonic – Properties and applications.

Unit V: Electronics

Difference between conductor, insulator and semiconductor using band theory – Intrinsic and extrinsic semiconductor – semiconductor diode – diode as a rectifier – Photo diode – LED – Zener diode as a voltage regulator – Number system – Binary, octal, Hexadecimal – Inter conversion – Cray code – exes 3 code , ASCII code – Basic gates – De-Morgan's theorem – Universal gates – Binary addition – Binary subtraction – 2's complement method - 1's complement method – binary multiplication – binary division.

Suggested Topics for Group Discussion/Presentation:

- Newton's laws of motion, concept of friction and its associated quantities
- Newton's law of Gravitation-Kepler's law of planetary motion,
- Electrostatics force, Electric field, electric potential, capacitors. Ohm's law Kirchoff's law
- Various properties of light, laser fundamentals and applications, Ultrasonics and applications.
- Various types of semiconductor devices, binary number systems

Suggested Readings:

(i) Text Books:

1. Murugesan, R. Mechanics, Properties of matter and sound. For Bsc ancillary physics, Reprint (2016).
2. Murugesan, R. Optics, Spectroscopy and Modern Physics, For Bsc ancillary physics, 1st edition (2017).

3. Murugesan, R. Electricity and electronics, for B.Sc Ancillary Physics, 1st edition, (2014).

(ii) Reference Book:

Halliday, D. Resnick, R and Walker, J. Principle of Physics, International Student version, Wiley India Private Ltd., 9th edition, reprint (2012).

(iii) Web Sources:

<https://www.khanacademy.org/science/physics>

https://ocw.uci.edu/courses/physics_3a_basic_physics.html

<https://www.concepts-of-physics.com/dr-hc-verma/videos.php#hc-verma-videos-on-mechanics>

**Title of the Course: Indian Economic
Development and Polic**

Semester:IV

Course Code: LPECCT41

Contact Hours: 6hrs/w

Credits: 5

Course Learning Outcomes

On completion of the course, the students are able to

- Grasp the need for Structural Adjustment Programmes and Stabilisation Policies for investment starved Indian economy.
- Forecast the future course of changes and development of Indian Economy through their knowledge of government policies and programmes on preservation of Natural resources.
- Acquire knowledge on Demographic features of Indian Economy.
- Examine the contemporary issues confronting Indian economy and the methodological issues in poverty measurement.
- Make a critical appraisal of the functioning of fiscal sector in India.

Pre- required Knowledge

- Import substitution, import entitlement and Free Trade.
- Sustainable Green Economy.

- Recommendations of Bhore Committee.
- Absolute Poverty Vs Relative Poverty.
- Fiscal Deficit - Current Account Deficit - Money Laundering

Unit I: India's Policies for Structural Change and Export Promotion

Economic transition in India –Industrial Policy Resolution (IPR) of 1948, IPR of 1956, New Economic Policy of 1991– Privatisation and Disinvestment policy – India's foreign trade performance and BoP Crisis - FDI policy – Exchange rate policy – EXIM Policy – Special Economic Zone - Erstwhile Planning Commission Vs NITI Aayog.

Unit II: India's Natural Resources

Natural resources and development of Indian economy – Guiding principles of resources development in India – Land resources and policies – Forest resources and policies – Water resources and policies – National Commission for Integrated Water Resources Management - Mineral resources and policies.

Unit III: India's Population and Unemployment

Demographic features of India – India's population policy – Trends in IMR and MMR in India – Inter-State variations in IMR and MMR – Types of unemployment in India – Trends in Work Force Participation Rate (WPR) – Urbanization in India.

Unit IV: Poverty in India

Poverty: Salient recommendations of Lakdawala, Suresh Tendulkar and Rangarajan committees – NSSO - Uniform Response Period (URP) and Mixed Response Period (MRP) – Methodological issues in the measurement of poverty - Inter - State variations in poverty in India – Rural Vs Urban poverty – Poverty eradication programmes (IRDP, PMGAY and MGNREGA only) – 75 th NSSO report on Household Social Consumption in India.

Unit V: India's Fiscal Sector

Indian Federalism: Inter - Governmental transfer – Issues in Centre – State financial relations – Fiscal decentralisation in the context of 73 rd and 74 th Constitutional Amendments - Trends in public expenditure and public revenue in India – GST and GST Council – India's Public debt – Deficit Financing – Fiscal sector reform measures – Fiscal Responsibility and Budgetary management (FRBM) – Parallel economy – Demonetisation of 2016: Objectives and achievements.

Suggested topics for group discussion/ Presentation

1. Disinvestment in India has progressed at a snail pace.
2. Rice, Wheat and Sugarcane are grown in 40 per cent of India's gross farmed area but consume 80 per cent of its irrigation water.
3. The participation of women in the labour market varies greatly across the States of India.
4. The methodological issues in poverty measurement cannot be completely addressed.
5. Parallel economy is a great threat to Indian economy.

Suggested Readings

i) Text Books

1. Subash Dey (2020), Indian Economic Development, Shree Kedley Publications.
2. Ramesh Singh (2019), Indian Economy for Civil Services, Universities and Other Examinations, McGraw Hill Education, New Delhi.
3. RuddarDutt and Sundaram, (2018), Indian Economy, S. Chand, New Delhi.

ii) Reference Books

1. Abhijit, V. Banerjee and Esther Duflo (2019), Good Economics for Hard Times, Public Affairs, New Delhi.
2. Abhijit, V. Banerjee (2019), A Short History of Poverty Measurements, Juggernaut, New Delhi.

3. Sri Ram Srirangam, Manish Kumar and Rohit Deo Jha (2019), Indian Economy Principles, Policies and Progress, Pearson Publications.
4. Saumitra Mohan (2018), Indian policy and Development, McGraw Hill Education.
5. Gupta.K.RandManoranjansharma (2018), Indian Economic Policies and Data, McGraw Hill publications.
6. Uma Kapila (Ed.) (2018), Indian Economy Since independence, Academic Foundation, New Delhi, 29th Edition.
7. Saumitra Mohan (2017), Indian policy and Development, McGraww Hill TP.
8. T.K.Jain., V.K.Phri&B.P.Majli (2014), Economic Development and Policy in India V.K.Global Publications Pvt.Ltd.,
9. Janakarajan et al. (2014), Indian Economy in Transition: Essays in Honour of C.T.Kurien, Sage Publication, New Delhi.
10. Noyek D. (2011), Fiscal Management in Post-Reform India, SSDN Publishers & Distributors.

iii) Web Sources

https://en.wikipedia.org/wiki/NITI_Aayog

<https://www.sciencedirect.com/topics/social-sciences/population-policy>

https://en.wikipedia.org/wiki/Poverty_in_India

Title of the Course: Environmental Economics	Semester: IV
Course Code: LPECCT42	Contact Hours: 6hrs/w
	Credits: 5

Course Learning Outcomes

- On completion of the course, the students are able to
- Elucidate the concepts and theories of Environmental Economics.
 - Describe the problem of scarcity of Natural resources and understand the need for prudent allocation of these resources.

- Understand the economic theory of environmental valuation.
- Illustrate the various measures available for the preservation of environment.
- Gain knowledge on sustainable development and its measurement.

Pre- required Knowledge

- Biotic and Abiotic things - Environment functions - Material balance model.
- Renewable Vs Non- renewable resources.
- Willingness to Pay (WTP) and Willing to Accept Compensation (WTAC) - Non-market goods.
- Global Warming - Green House Effect - Equity and Efficiency trade - off.
- Eco Friendly products - Green Marketing.

Unit I: Economy and Environment

Environment: Conditions for its efficient functioning - Market failure and environmental damage – Environmental damage and externality –Environmental goods as public goods –Property rights and environmental damage: Coase Theorem - “Government failure” and environmental damage - Types of Pollutants: Cumulative and Non–cumulative - Point source and non- point source - Welfare effects of pollution: Local and global air pollution - water pollution - Trans frontier pollution.

Unit II: Natural Resource Economics

Types of natural resources: McKelvey classification- Measuring resource scarcity: Resource life time, unit cost measures, real prices, economic rent - Allocating non-renewable resources: Hotelling Theorem – Forests: Frontier model and Immiseration model of deforestation - Consequences of deforestation - Water: Efficient allocation of surface and ground water.- Common Property Resources (CPRs) – Characteristics of CPRs –Dissipation of Hotelling

rents (“Tragedy of the Commons”) - Ostrom’s “design principles” for sustainable local CPR governance.

Unit III: Environmental Valuation

Environmental Valuation - Need and Objectives - Total Economic value - Methods of environmental valuation: Non-Demand Approach (Replacement Cost, Opportunity Cost and Dose response methods) - Demand Curve Approach (Revealed Preference Approach, Travel Cost- method and Hedonic pricing method).

Unit IV: Environmental Policies and Strategies

Pollution control Policies – Command-and-control policy - Distributive effects of environmental policy – Market based instruments: Pollution taxes, Tradable permits, Subsidies and Refundable deposits - Moral Suasion - Recycling: Optimum recycling - Solid Waste Management - Environmental education.

Unit V: Environment and Sustainable Development

Environmental Kuznets curve- “limits to growth” Club of Rome model- Zero Economic growth: Opportunity Cost and environmental effects of Zero economic growth - Economics of sustainable development –Brundtland Commission definition – Weak sustainable development and Strong sustainable development –Sustainability rules: “Hartwick rule”; Safe minimum standards-Measuring sustainable development: “green national accounts”and genuine savings.

Suggested topics for group discussion/ Presentation

1. Market failure causes environmental degradation.
2. Many environmental problems can be traced to the working of the so - called Tragedy of the Commons.
3. Revealed Preference Methods of environmental valuation elicit consumer surplus welfare measures through uncompensated Marshallian demand curve.
4. Equity - Efficiency trade- off is a fundamental problem in the environmental policy.
5. Zero economic growth would be an appropriate step to reduce pollution and depletion of natural resources.

Suggested Readings

i) Text Books

1. Joshi. M. V (2018), Environmental Economics, Atlantic Publications and Distributors Pvt.Ltd.,
2. Nick Hanley, Jason Shogren and Ben White (2018), Introduction to Environmental Economics, Oxford University Press.
3. Jhingan. M.L and ChandarK.Sharma (2016), Environmental Economics: Theory, Management and Policy, Vrinda Publications (P)Ltd.

ii) Reference Books

1. EcotJ.Callan and Janet M.Thomas (2015), Environmental Economics and Management Theory, Policy and Applications, South Blister Publications.
2. Charles D.Kolsted (2012), Intermediate Environmental Economical; Oxford University Proses.
3. Stephen Smith (2011), Environmental Economics; OUP Oxford Publications.
4. Katar Singh and Anil Shishodia (2007), Environmental Economics, Theory and Applications, Sage Publications, New Delhi.
5. Karl Garan Maler and Jaffrey Vincent (2005), Handbook of Environmental Economics, Vol.3, North Holland.
6. Kolstad Charles D (2003), Environmental Economics, Oxford University Press.
7. Gunther G. Schulze and Heinrich W. Unsprung (2002), International Environmental Economics, A Survey of the Issues, OUP Oxford.
8. Field, Barry C (2001), Natural Resource Economics: An Introduction, McGraw Hill, London.
9. Sterner and Coria. (2001), Policy Instruments for Environmental and Resource Management, Francis and Taylor.
10. Sankar U (2000), Environmental Economics, Oxford University Press, New Delhi.

iii) Web Sources

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7178272/>

<https://www.embibe.com/exams/natural-resources/>

https://en.wikipedia.org/wiki/Environmental_policy

Title of the Course: Industrial Economics	Semester: IV
Course Code: LPECCT43	Contact Hours: 6hrs/w
	Credits: 4

Course Learning Outcomes

On completion of the course, the students are able to

- Trace the origin and the evolution of industrialization and economic system.
- Acquire knowledge on the theories of Industrial location.
- Grasp knowledge on industrial productivity and its measures and describe the different sources of industrial finance.
- Investigate the implications of codes on wages, social security and health and working conditions.
- Evaluate the performance of Indian industries in the era of Globalisation and make a critical appraisal of MSME Act, Competition Act and Exit Policy.

Pre- required Knowledge

- Historical background of Industrial revolution.
- Spatial competition Vs spatial monopoly power.
- Industrial performance and Industrial finance: Meaning
- Wages, Bonus, Incentives and Characteristics of Industrial labour.
- Fast Moving Consumer Goods, Globalisation and WTO.

Unit I: Industrialisation and Economic Systems

Industrialisation: Meaning, Causes and Benefits – Factors inhibiting industrialisation – History of industrialisation - Industrialisation and Globalisation - Economic System: Capitalist, Socialistic and Mixed Economic systems.

Unit II: Theories of Industrial Location and Regional Development

Industrial location: Factors affecting industrial location – Theories of industrial location: Weber, Moses, Hotelling, Sargent finance and Florence – Regional growth of industry in India – Need for balance regional development of Industries – Industrial Policy for backward areas – State and Industrial location.

Unit III: Industrial Productivity and Finance

Industrial Productivity – Measures – factors affecting Productivity and Efficiency – Financial statements: Ratio analysis; inflation accounting; project approach methods – Capacity Utilisation: Meaning and factors determining it – Technological modernisation of Indian Industry - Industrial finance – sources of finance – Capital Structure: Incentive signalling approach.

Unit IV: Industrial Labour and Relation

Industrial Labour: Indian Constitution and Labour – Evolution of Labour Policy in India– National Wage policy: Code on Wages (2019), – Labour Welfare measures in India: Social Security Code (2020), Health and Working Conditions Code (2020) – Industrial relations: Industrial Dispute Act of 1947 and Amendments to it – Methods of Settling Industrial Disputes in India -Industrial Relations Code (2020).

Unit V: Indian Industry: Performance and Problems

Industrial growth in India: Trends and prospects – public enterprises; performance and pricing policies – MSME Sector – MSME Act – MRTP Act vs Competition Act of 2002 - Industrial sickness and Exit Policy – Performance of Fast Moving Consumer Goods (FMCG) industries in India - Globalisation and Indian Industry – WTO and Indian Industry.

Suggested topics for group discussion/ Presentation

1. Industrialisation leads to Urbanisation.
2. Hotelling's Paradox tends to happen with monopolistically competitive forms.

3. India's drive for technological modernisation has led to accord high priority to the development of Electronic industry.
4. Government of India consolidated 44 labour laws into four codes with the objectives of rationalizing labour laws and improving ease of doing business.
5. AtmaNirbhar Bharat Abhiyan addresses the needs of the Indian MSME Sector.

Suggested Readings

i) Text Books

1. RuddarDutt and Sundaram, (2018), Indian Economy, S. Chand, New Delhi.
2. P.J. Devine (2018), An Introduction to Industrial Economics: Routledge.
3. Barthwal. R.R (1987), Industrial Economy, Chitanya Publishing House, New Delhi.

ii) Reference Books

1. S.P.Singh (2010), Industrial Economics and Management: AITBS Publishers, India.
2. Paul R. Ferguson and Glenys J. Ferguson (1998), Industrial Economics: Issues and Perspectives, New York University Press.
3. Stephan Martin (1993), Advanced Industrial Economics, Wiley-Blackwell Publishers.
4. Roger G. Clarke (1991), Industrial Economics: Wiley-Blackwell.
5. Ashok Guha (1990), Economic Liberalisation, Industrial Structure and Growth in India, Oxford University Press, New Delhi.
6. Tirole J. (1988), The Theory of Industrial Organisation, Cambridge, M. A, MIT Press.
7. Little, D. Mazumdar and J.M. Page Jr. (1987), Small Manufacturing Enterprises. A Comparative Analysis of India and Other Economies, Oxford University Press, New York.

8. Bhagolowal.T. N (1987), Economics of Labour and Industrial Relations, Sahithya Bhavan, New Delhi.
9. Gadgil P.G and Gadgil P.L (1985), Industrial Economy of India, Eurasia Publishing House.
10. Donald Hay. A (1979), Industrial Economics: Theory and Evidence, Oxford University Press, London.

iii) Web Sources

<https://en.m.wikipedia.org/wiki/Industrialisation>

<http://www.usp.br/nereus/wp-content/uploads/Industrial-location.pdf>

<https://www.ibkuwt.com/en/services/industrial-finance/>

Title of the Course: Project (CC16)

Semester: IV

Course Code: LPECPJ41 Contact Hours: 5hrs/w

Credits: 4

Pre-required knowledge

- Research and its types
- Research Methodology
- Theoretical background of the topic chosen by the student for the project work.

Course Learning Outcomes

On completion of the course, the students are able to

- Develop their research skills by doing a project work
- Sharpen their ability to efficiently source and analyse data
- Get them oriented towards the art of writing.
- Improve the skill of organizing a project report
- Understand the social relevance of a research work.

Rules and Regulations for the Project / Dissertation Work

- Research supervisors will be allotted to the students / scholars by the respective Department.
- Research topic shall be chosen by the student / scholar in consultation with his/ her research supervisor.
- Every department has to maintain the year-wise list of project works carried out by the students. Research works

done by the students / scholars of the previous batches should not be repeated by the students / scholars of the current academic year.

- The general structure of the project report is given below.
 - Title page with college emblem
 - Research supervisor's certificate
 - Student's declaration counter signed by Research Supervisor and the HOD
 - Student's Acknowledgement
 - Contents
 - List of Tables if any
 - Introduction
 - Review of Literature
 - Materials and Methods
 - Results and Discussion
 - Summary of Findings and Conclusion
 - Bibliography
 - Annexure
- Four copies of the project report should be submitted, typed in A4 Paper in Times New Roman with the font size of 12 and 1.5 line spacing.

Title of the Course: Economics of Regulation

Semester:IV

Course Code: LPECDS41 Contact Hours: 5hrs/w

Credits: 3

Course Learning Outcomes

On completion of the course, the students are able to

- Demonstrate the potential instruments and their effects in regulating the market.
- Make both positive and normative evaluation of economic regulations.
- Describe the role of government in correcting the market outcomes when competitive forces are weak.

- Explain the optimal regulation under asymmetric information in the monopoly market.
- Describe the major issues in anti-trust and competition laws.

Pre- required Knowledge

- Rate of Return – Franchise.
- Price Discrimination - Market power - economic efficiency.
- Monopoly: Meaning and Types, Marginal cost-pricing principle.
- Hidden information - fairness as a prerequisite for economic efficiency.
- Theory of Contestable Market - economies of scales.

UNIT I: ECONOMIC REGULATION

Economic Regulation: Meaning and Objectives, Motivation behind Economic Regulations – Potential Instruments for Regulation- Types of regulation: Rate of return regulation, price cap regulation and Franchise bidding – Effects of Regulation - Hidden Cost of Regulation -Problems of regulation - Regularity lag.

UNIT II: THEORIES OF REGULATION

Theories: Stigler theory of regulation, Institutional theory of regulation, Theory of market power, Interest group theory, Theory of Government optimism, Principal agent theory, Rent seeking theory, Contributions to Chicago theory by Peltzman and Becker.

UNIT III: REGULATING NATURAL MONOPOLIES

Pricing strategies of regulation – Marginal cost pricing and Average cost pricing – Albert- Johnson Model – Problems in the regulation of Natural Monopolies – Basic Forms of Second- Best Regulation - Ramsey Pricing – Rate of Return Regulation and Peak load pricing – Selling Monopoly Franchise – Government representation and Management.

UNIT IV: MONOPOLY REGULATION UNDER ASYMMETRIC INFORMATION

Incomplete Information Games, Mechanism Design and Implementation Theory – Revelation Principles – Theory of Regulatory Prices – Incentive Regulation under Asymmetric Information - unfair competition - collusive agreement - firms behaviour under regularity constraints.

UNIT V: MERGER, ACQUISITION AND ANTI- TRUST LAW

Merger: Meaning and Types – Contestable Market and Merger Policy – Acquisitions of a company: process and types - Reasons behind mergers and acquisitions -Public Ownership as way to regulate Economic Activity –Anti- trust law: meaning and objectives.

Suggested topics for group discussion/ Presentation

1. Unregulated market sometimes produces society's maximum wellbeing.
2. The absence of generally applicable standards of justice and the lack of insight into the relationship between justice and efficiency makes empirical testing of public interest theory as explanatory theory of regulation.
3. Scale Economies sometimes make pure monopoly desirable. However, the government wants to regulate price to maximise social prices.
4. Asymmetric information is to be taken into consideration for designing the regulatory policy.
5. Anti-trust laws subvert the market mechanism.

Suggested Readings

i) Text Books

1. Joseph.E.Harrington, (2005), Economics of Regulation and Antitrust, MIT Press.
2. Jeantirole (1993), A Theory G Incentives in programming and Regulation, Cambridge University Press.
3. Sherman, Roger (1989), Regulation and monopoly, Cambridge University press.

ii) Reference Books

1. Klaus Mathis (2021), Law and Economics Of Regulation, Springer.
2. John List (2019), Micro Economics, Pearson Education.
3. Christopher Decker (2017), Modern Economic Regulation, Cambridge University Press.
4. Avishalom Tor (2016), Law and Economics of Regulation, springer, Switzerland.
5. Christopher Decker (2014), Modern Economic Regulation: An Introduction to Theory and practice, Cambridge university press.
6. Michael A. Crew (2006), International Handbook on Economic Regulation, Edward Elgar.
7. Muller & Dennis.C (2003), PPublic choice, Cambridge University press.
8. Coase. Ronald.C., (1990), The problem of social cost, Journal of Law and Economics, Vol.3. pp 1-44.
9. Alfred E.Kahn (1988), The Economics of Regulation” principles and Institutions, MIT Press.
10. Posner.R (1981), Theories of Regulation, Bell Journal of Economics and management Science, issue 25 vol.1. PP.3-21.

iii) Web Sources

https://en.m.wikipedia.org/wiki/Regulatory_economics

<https://regulationbodyofknowledge.org/general-concepts/theories-of-regulation/>

https://en.wikipedia.org/wiki/Mergers_and_acquisitions

Title of the Course: Institutional Economics	Semester: IV
Course Code: LPECD542	Contact Hours: 5hrs/w
	Credits:3

Course Learning Outcomes

On completion of the course, the students are able to

- Grasp the role of institutions in shaping the economic behaviour of individuals, firms, society and the State.

- Develop competency which allows to implement the methodology of property rights and transaction cost towards solving practical problems.
- Describe the theories of firm and contract and their implications in social science researches.
- Investigate the roles of State and Legal system in the institutional framework.
- Demonstrate how governance works in various spheres, what happens if it becomes weak or inefficient and further carryout research on a topic explaining the cross-country differences in the economic performance due to institutional constraints.

Pre- required Knowledge

- Social institutions: Ethical and Moral values - Habits.
- Economic Institutions: Competitive Market and Property Rights.
- Formal Vs Informal constraints - Economic Organisation.
- Government and Legal Institutions - Incentives - Regulation.
- Political Institutions - Social Welfare - Governance - Corruption.

Unit I: Traditional Institutional Economics

Institutionalism Vs individualism – Institutions: Meaning and Measurements – Types of Institutions – Essential ideas of institutionalist schools - Adam Smith theory of Moral Sentiments - Views of Veblen, Commons and Mitchell - Religion as an Institution: Max Weber's protestant Ethics and Spirit of Capitalism - Kenneth Boulding: Grants Economics - Formation of habits.

Unit II: Institutional Theories of Property Rights and Transaction Costs

Coase theorem – Transaction Costs: Market and Intra - firm transactions - Transaction as friction in the economy - Types of market transaction costs - Advantages and Shortcomings of legal enforcement mechanism – Search, Bargaining and Enforcement Costs – Property right theory – Private and Public Property – Common Property and the

Tragedy of commons – Collective action – Emergence of property rights – endogenous property rights – Property rights and economic development –Views of Demsetz and Elinor Ostrom.

Unit III: Institutional Theories of Firm and Contract

Ownership structure of the firm – Theory of Owner-Monitor (Alchian and DemSetz) - Separation of ownership and control – Competing forms of Economic Organisation - Opportunistic behaviour of managers and corporate control – Corporate governance: Outsider and insider corporate governance - Legal and Economic approaches to contract-Freedom of contract - Bounded rationality and contractual incompetencies.

Unit IV: Institutional Theory of State

Market failures – Embedded autonomy – State- Business relations – Economics of incentives and Institution - State as a firm with the monopoly power – Contract theory of State – Predatory theory of State- North's Model of State - Legal system in the institutional framework.

Unit V: Institutional theory of Governance

Economic growth and democracy – Good governance – Shadow campaign financing – Political uncertainty and investment – Politics of information control – Information flows in authoritarian regimes - Information manipulation – Corruption and Economic growth - Basil model of corruption - Game theoretical approaches towards corruption - Welfare implications of corruption.

Suggested topics for group discussion/ Presentation

1. Social institutions have effects on economic performance of a country.
2. Property rights and markets are the solutions to the tragedy of the commons.
3. Corporate governance is concerned itself with holding the balance between economic and social goals.
4. State is a firm with monopoly power.

5. Corruption breaks trust, weakens democracy and hampers economic development of a country.

Suggested Readings

i) Text Books

1. Santhakumar, V. (2011), Economic Analysis of Institutions, Sage, New Delhi.
2. Menard, C. and M. Shirley (eds.) (2005), Handbook of New Institutional Economics, Springer.
3. Srivastava S. K (2002), History of Economic thought, S.Chand and Company, New Delhi

ii) Reference Books

1. Furubotn E. Richter R. (2005), Institutions and Economic Theory, The University of Michigan Press.
2. Hal. R. Varian (2002), Intermediate Micro Economics – Modern Approach, 4th edn, W.W. Norton and Company.
3. Posner, E. (2000), Social Norms and the Law, Harvard Univ. Press, Cambridge, Mass., Ch.2 A Model of Cooperation and the Production of Social Norms.
4. Posner, E. (1998), Efficient Norms. In: Newman P. The New Palgrave Dictionary of Economics and the Law. Macmillan Reference.
5. Stein, B. and Subramanian, S., (1996), Institutions and Economic Change in South Asia, Oxford, Oxford University Press.
6. Milgrom, P. and J. Roberts (1992), Economics, Organization and Management, Prentice-Hall International.
7. Niehans, J. (1987), Transaction Costs. In: The Palgrave Dictionary of Economics. London, Macmillan.
8. Olson, M. (1987), Collective action. In: The New Palgrave: A Dictionary of Economics, Macmillan.
9. Boulding, K. (1986), Adam Smith as an Institutional Economist, Memphis: P. K. Seidman.

10. Olson, M. (1965): The Logic of Collective Action. Public goods and the Theory of the Groups, Harvard Univ. Press, Cambridge.

iii) Web Sources

<https://www.exploring-economics.org/en/orientation/institutionalist-economics/>

<https://www.jstor.org/stable/725108>

https://en.wikipedia.org/wiki/Market_failure

Title of the Course: Data Analysis using Excel	Semester: IV
Course Code: LPECSL41	Contact Hours: 2hrs/w
	Credits: 2

Course Learning Outcomes

On completion of the course, the students are able to

- Do data analysis accurately and present the results in the standard format using MS Excel.
- Illustrate the way of data entry in Excel and analyse any type of numerical data using Excel with confidence.
- Compute Descriptive Statistics, Measures of Dispersion, Skewness and Kurtosis using excel.
- Get the results of Correlation and Regression using excel.
- Create graphs and diagrams to visually display data using Excel.

Pre- required Knowledge

- Saving and opening a workbook - Cell formation.
- Basic Excel functions - Find and Replace Option.
- File format in Excel.
- Conceptual foundations of Statistics.
- Univariate Analysis Vs Bivariate Analysis Vs Multi Variate analysis.

UNIT I: MS Excel and Data Entry

MS Excel: Spread Sheet - Cell and their Properties – Data entry in Excel Sheet – Relational operators in a work sheet.

UNIT II: Descriptive Statistics and Dispersion

Data analysis: Tool pack installation -Calculating measures of Central tendency in Excel – Percentiles – Deciles and Quartiles in Excel – Comparing values for group.

UNIT III: Inequality Measures

Skewness and Kurtosis – Coefficient of Variance – Gini coefficient and Lorenz Curve.

UNIT IV: Measures of Relationship

Correlation –Karl Pearson’s Correlation coefficient – Spearman’s Rank Correlation –Regression SLRM and MLRM.

UNIT V: Charts and Graphs

Creating Bar and Pie charts in Excel – Simple and Cluster line graphs – Creating scatter plots – Editing graphs and charts in SPSS.

Suggested topics for group discussion/ Presentation

1. MS Excel is a tool to create and format spreadsheets.
2. MS Excel involves a lot of manual work.
3. Excel charting capabilities can be used to obtain the graph of the Lorenz curve.
4. There are several methods to compute correlation coefficient in Excel. The simplest is to get two data sets side- by-side and use the built – in correlation formula.
5. MS Excel is a powerful software that performs a wide range of jobs for personal, business and research purposes.

Suggested Readings

i) Text Books

1. Riyanka Jain (2018), Statistical Analysis in Microsoft Excel and SPSS, Universal Academic Books Publishers and Distributors.
2. Rajaraman. V (1996), Fundamentals of Computers, Prentice Hall of India, New Delhi.
3. Mishra. S.K and Binwal. J.C. (1991), Computer Application in Social Science Research, Vikas, Delhi.

ii) Reference Books

1. Hem chand Jain and Tiklari H.N (2019), Computer application in business, taxman publications.

2. Saurabh Raj Gupta (2019) Computer Application; Laxmi Publications.
3. Uma Rao.K (2014) Computer Techniques and Models in power systems; IK International Publications.
4. Sheridan. J. Coakes, Lyndall and Pete Dzidic (2007), SPSS 13.0 for Windows, John Wiley and Sons, Australia.
5. Kanter (1999), Introduction to Computers, Management Information Systems, Prentice Hall of India Ltd.
6. Maddala. G.S (1997), Econometrics, McGraw Hill, New York.
7. Krishnamurthy. E.V and Sen S.K (1992), Computer – Based Numerical Algorithms, Affiliated East – West Press, New Delhi.
8. Johnson. J (1991) Econometric Methods, McGraw-Hill, New York.
9. Sanders D.H (1988), Computer Today, McGraw Hill, 3rd Edition, New York.
10. Lipschultz.M and Lipschultz. S (1982), Theory and Problems of Data Processing, Schum’s Series, McGraw Hill, New York

iii) Web Sources

<https://www.microsoft.com/en-ww/microsoft-365/excel>

<https://en.m.wikipedia.org/wiki/SPSS>

<https://ncert-books.in/how-to-create-group-in-tally-erp-9/>

Title of the Course: Data Analysis using SPSS **Semester: IV**

Course Code: LPECSL42 **Contact Hours: 2hrs/w** **Credits: 2**

Course Learning Outcomes

On completion of the course, the students are able to

- Perform a wide range of data management task in SPSS and Understand the basic workings of SPSS.
- Create graphs and diagrams to usually display data using SPSS.

- Compute Descriptive Statistics and measures of Dispersion using SPSS.
- Get the results of Multivariate Statistical tools using SPSS.
- Perform the basic Inferential Statistics for comparison using SPSS.

Pre- required Knowledge

- Saving and opening a workbook - Cell formation.
- Basic Excel functions - Find and Replace Option.
- File format in SPSS.
- Conceptual foundations of Statistics.
- Multi - Variate analysis Vs Univariate Analysis Vs Bivariate Analysis.

UNIT I: SPSS and Data Entry

Basic structure of an SPSS data: Variable view, Data view – Exporting and Importing data from Excel file – data edition – data reading – preparation of Code book – Variable types – Value labels and Missing labels- Compute, Recode, Count, Categorize, Variables, Rank cases, If Select If.

UNIT II: Charts and Graphs

Creating Bar and Pie Charts in SPSS – Simple and Cluster line graphs – Creating Scatter plots – Editing graphs and charts in SPSS.

UNIT III: Descriptive Statistics and Dispersion

Calculating measures of Central tendency in Excel – Percentiles – Deciles and Quartiles in SPSS – Comparing values for group.

UNIT IV: Multivariate Analysis

Correlation – SLRM – MLRM – Factor analysis – Discriminant Analysis – Logistic regression analysis.

UNIT V: Parametric and Non- Parametric Tests

Calculating t and f values – Chi-square test in SPSS – Wilcoxon test – Mann-Whitney U test – Kruskal Wallis H test – Cochran's Q test – McNemar test.

Suggested topics for group discussion/ Presentation

1. SPSS has built in data manipulation tools.
2. Multiple variable bar charts can be created from different data files using SPSS.
3. Frequencies command can be used to compute quartiles, percentiles, measures of central tendency and measures of dispersion in SPSS.
4. Factor Analysis and Principal Component Analysis may appear similar but they are quite different.
5. SPSS is equipped with a plethora of Statistical tests for inferences.

Suggested. Readings

i) Text Books

1. Riyanka Jain (2018), Statistical Analysis in Microsoft Excel and Spss, Universal Academic Books Publishers and Distributors.
2. Rajaraman. V (1996), Fundamentals of Computers, Prentice Hall of India, New Delhi.
3. Mishra. S.K and Binwal. J.C. (1991), Computer Application in Social Science Research, Vikas, Delhi.

ii) Reference Books

1. Hem chand Jain and Tiklari H.N (2019), Computer application in business, taxman publications.
2. Saurabh Raj Gupta (2019) Computer Application; Laxmi Publications.
3. Uma Rao.K (2014) Computer Techniques and Models in power systems; IK International Publications.
4. Sheridan. J. Coakes, Lyndall and Pete Dzidic (2007), SPSS 13.0 for Windows, John Wiley and Sons, Australia.
5. Kanter (1999), Introduction to Computers, Management Information Systems, Prentice Hall of India Ltd.
6. Maddala. G.S (1997), Econometrics, McGraw Hill, New York.

7. Krishnamurthy. E.V and Sen S.K (1992), Computer – Based Numerical Algorithms, Affiliated East – West Press, New Delhi.
8. Johnson. J (1991) Econometric Methods, McGraw-Hill, New York.
9. Sanders D.H (1988), Computer Today, McGraw Hill, 3rd Edition, New York.
10. Lipschultz.M and Lipschultz. S (1982), Theory and Problems of Data Processing, Schum’s Series, McGraw Hill, New York

iii) Web Sources

- 1 <https://www.microsoft.com/en-ww/microsoft-365/excel>
- 2 <https://en.m.wikipedia.org/wiki/SPSS>
- 3 <https://ncert-books.in/how-to-create-group-in-tally-erp-9/>

RULES AND REGULATIONS FOR THE PROJECT / DISSERTATION WORK (UG, PG AND M.PHIL)

- Research supervisors will be allotted to the students / scholars by the respective Department.
- Research topic shall be chosen by the student / scholar in consultation with his/ her research supervisor.
- Every department has to maintain the year-wise list of project works carried out by the students. Research works done by the students / scholars of the previous batches should not be repeated by the students / scholars of the current academic year.
- The general structure of the project report is given below.
 - Title page with college emblem
 - Research supervisor's certificate
 - Student's declaration counter signed by Research Supervisor and the HOD
 - Student's Acknowledgement
 - Contents
 - List of Tables if any
 - Introduction
 - Review of Literature
 - Materials and Methods
 - Results and Discussion
 - Summary of Findings and Conclusion
 - Bibliography
 - Annexure
- Four copies of the project report should be submitted, typed in A4 Paper in Times New Roman with the font size of 12 and 1.5 line spacing.

SARASWATHI NARAYANAN COLLEGE

(Autonomous Institution – Affiliated to Madurai Kamaraj University)

(Reaccredited with B^(2.78) Grade by NAAC in the second cycle)

MADURAI -22

EVALUATION METHOD UNDER CBCS- LOCF

CONTINUOUS INTERNAL ASSESSMENT (CIA)

Internal assessment is based on the continuous evaluation of performance of the students in each semester. Internal mark is awarded to each course in accordance with the following guidelines.

UNDER GRADUATE, POST GRADUATE AND M.PHIL:

1. Internal test will be conducted for the maximum of 60 marks and converted to 15 marks.
2. Two internal tests will be conducted and the average of marks secured in the two tests will be taken as the Final Internal Test mark.
3. The distribution of Internal Assessment marks is given below.

THEORY			PRACTICAL		
Test	-	15	Record Note	-	10
Seminar	-	5	CIA	-	15
Quiz	-	5	Model Exam	-	15
		-----			-----
Internal Maximum	-	25	Internal Maximum-		40
		-----			-----

There is no Cumulative Internal Assessment (CIA) for Self Learning Courses, Add on Certificate / Diploma Programmes and Part-1 subjects other than Tamil.

4. Internal marks for those UG, PG and M.Phil. students who have to Repeat the Semester (RS) for want of attendance should be marked "AA" in the foil card.
5. There is no minimum mark for Internal assessments marks for all the UG, PG and M.Phil. Programmes.
6. Internal test for improvement of marks is not allowed under any circumstances
7. Special Internal Assessment tests for the absentees may be conducted on genuine reasons with the prior approval of HOD, Dean and Principal. Such tests may be conducted before the commencement of the Summative Examinations.

SUMMATIVE EXAMINATIONS (SE)

1. Summative Examinations for all the UG, PG and M.Phil. Programmes are conducted in November and April for the Odd and the Even semesters respectively.
2. Question paper setting along with the scheme of valuation is purely external for all the UG, PG and M.Phil. Programmes.
3. The office of the CEO is conferred with the right of choosing the Question Paper Setters and the External Examiners from the Panels suggested by the Boards of Studies of Programmes offered by the respective Department and approved by the Academic Council of the College. The question papers set for the Summative Examinations will be finalised by the Scrutiny Committee constituted by the office of the COE.
4. Practical Examinations will be conducted by the External Examiner and the course teacher, who will act as the Internal Examiner. In the absence of course teacher / External Examiner, HOD will act as the Internal Examiner / External Examiner.
5. The marks scored by the students in the External Examinations in Self Learning Courses and Add – on Courses will be converted to 100 for each course.
6. The theses submitted by the M.Phil. scholars after the conduct of Awards Committee meeting can be valued and the Viva-Voce Examinations can be conducted. The Principal is empowered to declare the results and it can be ratified in the next Awards Committee meeting.

**Knowledge levels for assessment of Outcomes based on
Blooms Taxonomy**

S. No	Level	Parameter Description	Description
1	K1	Remembering	Remembering It is the ability to remember the previously learned
2	K2	Understanding	The learner explains ideas or Concepts
3	K3	Applying	The learner uses information in a new way
4	K4	Analysing	The learner distinguishes among different parts
5	K5	Evaluating	The learner justifies a stand or decision
6	K6	Creating	The learner creates a new product or point of view

WEIGHTAGE OF K-LEVELS IN QUESTION PAPER

K-LEVELS (Cognitive Level)						Total
	K1	K2	K3	K4	K5/ K6	
SUMMATIVE EXAMINATIONS– 75 Marks Pattern	21	30	18	18	13	100
SUMMATIVE EXAMINATIONS–50 Marks Pattern	24.5	24.5	17	17	17	100
CONTINUOUS INTERNAL ASSESSMENT(CIA)	24	26	14	25	11	100

QUESTION PATTERN FOR SUMMATIVE EXAMINATIONS For those who join in June 2022 UG and PG (Language Courses, Core Courses, Discipline Specific Electives, Generic Elective Courses, Non-Major Electives (PG))	
	TOTAL MARKS 75
SECTION–A (Answer all questions) I. Choose the correct answer (FIVE questions –ONE question from each unit) (5 x 1 = 5) (Q.No.1-5) - All questions are at K2 level II. Fill in the blanks (FIVE questions - ONE question from each unit) (5x1=5) (Q.No.6-10)-All questions are at K1 level	10
SECTION-B Answer all questions not exceeding 50 words each. ONE set of questions from each unit Q. No. : 11 to 15 (5x2=10) K2 level – 2 Questions K3 level – 1 Question K4 level –1 Question K5/K6 level – 1 Question	10
SECTION-C-Either/or type Answer all questions not exceeding 200 words each. ONE set of questions from each unit. Q. No. : 16 to 20 (5 x5=25) K1 level – 1 Question K2 level – 2 Questions K3 level – 1 Question K4 level – 1 Question	25
SECTION-D-Answer any THREE questions not exceeding 400 words each. ONE question from each unit. Q. No. : 21 to 25 (3 x 10 =30) K1 level – 1 Question K2 level – 1 Questions K3 level – 1 Question K4 level – 1 Question K5/K6 level – 1 Question	30
Total	75

QUESTION PATTERN FOR SUMMATIVE EXAMINATIONS For those who join in June 2022 UG and PG (Skill Enhancement Courses, Self Learning Courses, Non Major Electives (UG)and Part V Courses (except NCC))	
	TOTAL MARKS 50
SECTION–A (Answer all questions) I. Choose the correct answer (FIVE questions–ONE question from each unit) (Q.No.1-5) - All questions are at K2 level II. Fill in the blanks (FIVE questions – ONE question from each unit) (5x1=5) (Q.No.6-10) - All questions are at K1 level	10
SECTION-B Answer all questions not exceeding 50 words each. ONE set of question from each unit Q. No. : 11 to 15 (5x2=10) K1 level – 1 Question K2 level – 1 Question K3 level – 1 Question K4 level – 1 Question K5/K6 level – 1 Question	10
SECTION-C Answer any THREE questions not exceeding 400 words each. ONE question from each unit Q. No. : 16 to 20 (3x10=30) K1 level – 1 Question K2 level – 1 Question K3 level – 1 Question K4 level – 1 Question K5/K6 level – 1 Question	30
Total	50

QUESTION PATTERN FOR INTERNAL ASSESSMENT (CIA) For those who join in June 2022 UG and PG	
	TOTAL MARKS 60
SECTION-A (Answer all questions) I. Choose the correct answer (5 x 1 = 5) (Q.No.1-5)-All questions are at K2 level II. Fill in the blanks (5x1=5) (Q.No.6-10)-All questions are at K1 level	10
SECTION-B Answer all questions not exceeding 50 words each. ONE set of question from each unit (4 x 2 = 8) Q.No. 11 – K2 level Q.No. 12 – K3 level Q.No. 13 – K3 level Q.No. 14 – K5/ K6 level	8
SECTION-C -Either/or type (Answer all questions not exceeding 200 words each. (3 x 6 = 18) Q.No. 15 – K3 level Q.No. 16 – K4 level Q.No. 17 – K5/K6 level	18
SECTION-D Answer any TWO questions not exceeding 400 words each. (2 x 12 = 24) Q.No. 18 – K1 level Q.No. 19 – K2 level Q.No. 20 – K4 level	24
Total	60

QUESTION PATTERN FOR SUMMATIVE EXAMINATIONS						
For those who join in June 2022						
UG and PG						
(Language Courses, Core Courses, Discipline Specific Electives, Generic Elective Courses, Non-Major Electives(PG))						
DURATION:3HRS				MAXMARKS:75		
K-LEVELS						TOTAL MARKS
SECTIONS	K1	K2	K3	K4	K5/K6	
SECTION A (Answer all questions, each question carries One Mark)	5	5				10
SECTION B (Answer all questions, each question carries TWO Marks, ONE question from Each unit)		4	2	2	2	10
SECTION C (Answer all questions-Either/or type-ONE Question from each unit)	5	10	5	5		25
SECTION D (Answer any THREE questions, ONE question from each unit, each question carries TEN Marks)	10	10	10	10	10	30
TOTAL	20	29	17	17	12	75

QUESTION PATTERN FOR SUMMATIVE EXAMINATIONS						
For those who join in June 2022						
UG and PG						
(Skill Enhancement Courses, Self Learning Courses, Non Major Electives (UG) and Part V Courses (except NCC))						
DURATION:2HRS			MAX MARKS:50			
K-LEVELS	K1	K2	K3	K4	K5/ K6	TOTAL MARKS
SECTIONS						
SECTION A (Answer all questions, each question carries One Mark)	5	5				10
SECTION B (Answer all questions, each question carries TWO Marks, ONE question from Each unit)	2	2	2	2	2	10
SECTION C (Answer any THREE questions, ONE question from each unit, each question carries TEN Marks)	10	10	10	10	10	30
TOTAL	17	17	12	12	12	50

BLUE PRINT OF QUESTION PAPER FOR INTERNAL ASSESSMENT (CIA)						
DURATION:2HRS			MAX MARKS:60			
K-LEVELS	K1	K2	K3	K4	K5/K6	TOTAL MARKS
SECTIONS						
SECTION A (Answer all question. Each question Carries ONE Mark)	5	5				10
SECTION B (Answer all questions. Each question carries TWO Marks)		2	4		2	8
SECTION C (Answer all questions- Either/or type -Each question carries SIX Marks)			6	6	6	18
SECTION D (Answer any TWO questions. Each question carries TWELVE Marks)	12	12		12		24
TOTAL	17	19	10	18	8	60

VALUATION

1. Central valuation system is adopted.
2. Single Valuation system is followed for UG, PG and M.Phil. theory examinations. The valuation is done by the external examiners only.
3. UG and PG Practical Examinations are valued by both Internal and External Examiners.
4. Any discrepancy in the question paper should be brought to the notice of the Controller of Examinations by the respective Course Teacher through the Head of the Department within five days from the date of examination.

DECLARATION OF RESULTS

1. The total credit should not exceed 140 for UG Programmes and 90 for PG Programmes, excluding the credits earned for additional credit courses. This is applicable to the students migrating from other colleges also.
2. The students migrating from other colleges have to appear for the Summative Examinations conducted by the college for non-equivalent theory and practical courses. Mark scored by such a student in the Summative Examinations conducted by the previous college shall be converted to 100 if it is less than 100 for any equivalent course.
3. The students who repeat the semester have to appear not only for Summative Examinations but also for internal tests. The Internal marks scored by such students in their previous attempts shall stand invalid.
4. Results will be published within 20 days from the date of completion of all the Examinations.
5. Results will be declared as per the norms given in the following table in consultation with the Awards Committee.

Maximum and Passing Minimum Marks

Course	External Exam (SE)		Aggregate Marks (CIA + SE)	
	Passing Minimum	Maximum Mark	Passing Minimum	Maximum Mark
UG (Theory)	27	75	40	100
UG – NME / SEC / Part V (except NCC)	18	50 (converted to 75 marks)	40	100
UG – SLC	20	50	40	100
UG (Practicals)	21	60	40	100
UG Project	18	50	40	100
PG (Theory)	34	75	50	100
PG (Practicals)	27	60	50	100
PG (Project)	23	50	50	100
M.Phil. (Theory)	34	75	50	100
M.Phil. Project				
1. Dissertation	50	100 (Internal 50 + External 50)	-	-
2. Viva – Voce	50	100 (Internal 50 + External 50)	-	-

REVALUATION AND SUPPLEMENTARY EXAMINATIONS

1. Students can apply for Revaluation within 10 days from the date of the publication of the results.
2. Final year students of UG and PG Programmes can appear for Supplementary Examinations for the arrear papers of only the V and VI Semesters of UG

Programmes and III and IV Semesters of PG Programmes. Students having the maximum of three arrear papers alone are eligible for Supplementary Examinations.

3. Absentees in the Summative Examinations are not eligible to apply for the Supplementary Examinations.
4. Supplementary Examinations will be conducted every year in the month of July.

ATTENDANCE

1. Students with the minimum of 75% of attendance (68 days out of 90 days) in a semester are permitted to appear for the summative examinations.
2. Students who do not have the minimum attendance should go for condonation.
3. Students who do not have the minimum attendance of 20 hrs for Certificate Programme and the minimum attendance of 20 hrs for each course in Diploma Programme will not be permitted to appear for the summative examinations.

The following are the regulations for grant of condonation.

Attendance	Condonation Fee	Authority to Consider	Nature of Penalty
65% - 74% (59-67 days)	Rs.500/-	Head of the Department	As decided by the HOD
50% - 64% (58-45 days)	Rs.1000/-	Principal and the Examination Committee	Application for exemption to be made on prescribed form with the specified remarks of the

			Principal
< 50% (Below 45 days)	To repeat the whole semester	-----	-----

EXAMINATION RULES AND REGULATIONS

1. Students without hall ticket and identity card are not permitted to appear for the examinations.
2. Possession of materials in any form for copying is strictly prohibited in the examination hall.
3. Students indulging in any form of malpractices in the examination are liable for severe punishment.
4. Students are not allowed into the examination hall after 30 minutes of the commencement of the examination.
5. Students should not write their names or any other identification marking except their register number in the answer scripts.
6. Students who have discontinued the Degree Programme are not permitted to write the summative examinations.
7. Students who have not completed the theory and practical courses during the Programme of their study are allowed to appear for the Summative Examinations in the same syllabi up to a period of three years from the year of the completion of Programme. However, after the completion of three years, they have to appear for the summative examinations for the equivalent course in the current syllabi only. The equivalence of a course is to be decided by the respective HOD, Dean, the Controller of Examinations and the Principal. This is also applicable to those students who repeat the semester.

**PENAL ACTIONS FOR VARIOUS FORMS OF
MALPRACTICES IN THE SUMMATIVE EXAMINATIONS**

Sl. No.	Malpractice	Penal Action
1	In Possession of Materials relevant to the examination concerned	Cancellation of that particular paper.
2	Copied from materials in his/her possession	Cancellation of all papers of that semester
3	Copied from neighbours	Cancellation of all papers including arrear papers of that semester Cancellation of that particular paper of the candidate who helped for copying
4	Copied by exchanging answer script between neighbours	Cancellation of all papers of the candidates who exchanged their answer scripts
5	Misbehaviour in the examination hall	Cancellation of that particular paper
6	Copying and Misbehaviour in the examination hall	Cancellation of all papers of that semester and debarring the candidate from appearing for the next semester examination.
7	Insertion of answer sheets which were previously stolen and written	Cancellation of all papers of that semester and debarring the candidate from appearing for the next

		semester examination.
8	Impersonation in the examination	Cancellation of all papers of that semester and recommending dismissal from the college.