

**A.VEERIYA VANDAYAR MEMORIAL
SRI PUSHPAM COLLEGE (AUTONOMOUS)**

POONDI-613 503, THANJAVUR (DT)



SYLLABUS

M.A., Economics

(From 2020 - 2021 onwards)



PROGRAMME OUTCOMES OF M.A. ECONOMICS

- The subject matter of M.A Economics programme covers the fields of Econometrics, Demography, Indian Economic Development, Agriculture, Industry, Banking, Financial Markets, Planning and Development, Public Finance International Trade and the functioning of international organizations such as World Bank, International Monetary Fund, International Development Association, etc.
- Since these are the main subject content of State Level (TNPSC) and National Level (UPSC) competitive examinations, banking service, railway service examinations and other competitive examinations the students of Economics can easily crack such examinations without coaching classes and can become successful in getting employment opportunities.
- Completion of PG Degree in Economics with good knowledge open up research opportunities in the national level premier Educational Institutes like IISc, IITs, Delhi School of Economics, Madras School of Economics etc.

PROGRAMME SPECIFIC OUTCOMES OF M.A. ECONOMICS

- **PSO1** Learn higher level concepts, terminologies and theories in Economics.
- **PSO2** Know the Economic Development of various aspects and Policy perspectives.
- **PSO3** Make the students familiar with the use of descriptive and Probability statistics.
- **PSO4** Study research methodologies in Economics and develop the analytical skill through projects.
- **PSO5** Know the contributions of Nobel Laureates.
- **PSO6** Help the students to prepare for SET/NET/ JRF.
- **PSO7** Pursue higher education M. Phil. and Ph.D.
- **PSO8** Face the Competitive Examinations exclusively banking field, research field easily.
- **PSO9** Undertake Research fellowship since they have the experience of project at PG level.
- **PSO10** To get employment in School, CSO, NSSO, Company and bank etc.

M.A ECONOMICS 2020-2021 ONWARDS

SEM		CATEGORY	PAPER CODE	TITLE OF THE PAPER	HOURS PER WEEK	Max. Marks			CREDITS
						CIA	E.E	Total	
I	1	Core	20P1ECC1	Advanced Micro Economics-I	6	25	75	100	5
	2	Core	20P1ECC2	Advanced Macro Economics-I	6	25	75	100	5
	3	Core	20P1ECC3	Indian Economic Development & Policy/Demography	6	25	75	100	4
	4	Core	20P1ECC4	Methods of Economic Analysis-I (Statistical Method)	6	25	75	100	4
	5	Major Elective	20P1ECELIA/B	Economic Reforms in India/ Evolution of Economic Doctrines	6	25	75	100	4
II	6	Core	20P2ECC5	Research Methodology	5	25	75	100	4
	7	Core	20P2ECC6	Advanced Micro Economics-II	5	25	75	100	5
	8	Core	20P2ECC7	Advanced Macro Economics-II	5	25	75	100	5
	9	Core	20P2ECC8	Methods of Economic Analysis-II (Mathematical Methods)	5	25	75	100	4
	10	Core	20P2ECC9	Demography	5	25	75	100	4
	11	Major Elective	20P2ECEL2A/B	Principles of Management/ Capital Market and Investment policies	5	25	75	100	4
		Extra Credit	-	MOOC (Massive Open Online Course)	-	-	-	-	-
III	12	Core	20P3ECC10	Fiscal Economics-I	5	25	75	100	4
	13	Core	20P3ECC11	Econometrics Methods	5	25	75	100	4
	14	Core	20P3ECC12	Environmental Economics/Economics of Education and Health	5	25	75	100	4
	15	Core	20P3ECC13	Economics of Human Resource Development /Micro Finance	5	25	75	100	4
	16	Core	20P3ECC14	Advanced General Economics-I	5	25	75	100	4
	17	EDC	20P3ECEDC	Issues in Indian Economy	4	25	75	100	
			20P4ECCPD	Communicative skills &personality Development (NS)	1	-	-	-	-
		Extra Credit	-	MOOC (Massive Open Online Course)	-	-	-	-	-
IV	18	Core	20P4ECC15	Fiscal Economics-II	6	25	75	100	4
	19	Core	20P4ECC16	International Economics	6	25	75	100	4
	20	Core	20P4ECC17	Advanced General Economics-II	6	25	75	100	4
	21	Major Elective	20P4ECEL3A/B	Economics of Growth and Development/Economics of Information Technology	6	25	75	100	4
	22		20P4ECCN	Comprehensive Test	5				2
	23		20P4ECPR	Agriculture, Industry, Service Sector, Human Development, Women Studies, Banking, Health and Education, Rural Development etc.,)	1	-	-	-	4
	23	20P4ECCPD		Communicative skills &personality Development (NS)	1	-	-	-	-
		Total			120				90

EDC- Title (offered by Dept of Economics) - "Issues in Indian Economy"

M.A. ECONOMICS (2020– 2021)

Nature of Course	Total No. Of Courses	Total Marks	Total Credits	Classification
Core	17	1700	72	✓
Elective	3	300	12	✓
E.D.C	1	100	---	✓
Project	1	100	4	x
Comprehension	1	100	2	✓
Soft skill using Language lab	--	--	---	X
Total	23	2300	90	

GRADING OF COURSE PERFORMANCE (10 POINT SCALE)

Aggregate Marks	Grade	Grade Point
96 and above	S+	10
91-95	S	9.5
86-90	D++	9.0
81-85	D+	9.0
76-80	D	8.0
71-75	A++	7.5
66-70	A+	7.0
61-65	A	6.5
56-60	B	6.0
50-55	C	6.5

Comprehensive Knowledge Test: Objective type question pattern with 100 compulsory questions carrying 100 marks to be answered in 3 Hours with 2 credits. The portion is entire core courses.

Industrial Internship: Students have to undergo In-Plant training in Industry or Organization where any process related to Economics is going on. The period of training should be minimum 10 days. Students have to submit the report of the training underwent with the certificate from the concerned authority of the Industry / Organization.

Industrial Visit: Students have to attach a report on the Industrial visit made with the counter signature of Staff in charge for the Industrial visit while submitting the Project / Industrial Internship report

MOOC: Massive Open Online Course is introduced in the second and third semester as an extra credit course from this academic year 2020-2021. Students can avail any one or more of the courses available in MOOC to equip their skill and knowledge themselves.

Field Visit / Industrial Visit / Hands on Training Programme having minimum 15 hours of contact time as Extra credit course is introduced for I year PG students to gain experiential learning.

Evaluation of the visit report will be held at the end of II Semester

Components of Evaluation

Internal Marks	40
External Marks	60
Total	100

Semester	Subject	Title of the Paper	Hours of Teaching/Week	No. of Credits
I	20P1ECC1	Core- Advanced Micro Economics – I	6	5

Objective:

- To make the students to learn higher level concepts and theories of micro economics with reference to consumer behavior, production, market structure and managerial theories of firms.

Unit - I**Hrs 15**

Revealed preference hypothesis-Revision of Demand theory-Hicks' four types of consumer's surplus-Modern utility theory-N.M Method- Friedman savage Hypothesis.

Unit - II**Hrs 15**

Recent Developments in Demand Theory-Constant elasticity demand function-Dynamic demand function-Empirical Demand Function – The Linear Expenditure system.

Unit - III**Hrs 15**

Theory of Production- Isoquant Approach – Law of variable Proportion and Returns to scale (interms of Isoquants)- Equilibrium of producer- Production possibility curve – Technical progress- Hicks Approach –C-D- production function and CES production Function.

Unit - IV**Hrs 15**

Pricing under Monopolistic Competition-short run and long run-Selling costs and equilibrium-Duopoly-Cournot-Bertrand and Edgeworth Models-Oligopoly-Kinked Demand-Collusive oligopoly-cartels-Price Leadership.

Unit - V**Hrs 15**

Baumol's sales Maximisation model-Full cost Pricing-Bain's limit pricing-Behavioral Theory of cyert and March – Williamson's Managerial Discretion model-Growth Maximization model of Marris.

COURSE OUTCOMES:

On completion of the course the students will be able to

- Equip the students with the basic analytical skills on the economic behavior of individuals.
- Enhance the innovative skills of the students with regard to the viability of firms and markets.
- Impart the knowledge of consumer and producer behavior and how to attain consumer's equilibrium.
- Provide the knowledge of producer behavior and how to attain producer's equilibrium.

References:

- 1.AkoutSoyiannis "Modern Micro Economics"; Mac Millan Press Ltd London; II Ed; 1979.
- 2.Donald Stevenson Watson "Price Theory and its uses"; Scientific Book Agency; Calcutta; II Edition; 1970.Private Ltd; New Delhi; Third Edition; 1987.
- 3.H.A.JohnGreen"Consumer theory"" Penguin, Harmondsworth, England, 1971.
- 4.P.A.Samuelson"Foundations of Economic Analysis", Harvard University press; Cambridge; Massachusettts, 1955

Text

1. M.L.Jhingan"Advanced Micro Economic Thory".

Semester	Subject Code	Title of the Paper	Hours of Teaching/ week	No. of Credits
I	20P1ECC2	Core-Advanced Macro Economics-I	6	5

Objective:

- To provide adequate knowledge to the students about the development of macroeconomic theory and to know about macroeconomic objectives and tools and to focus attention on macroeconomic issues and policies.

Unit-I**Hrs 15**

National income analysis- concepts and components – Factors determining national income – uses of national income- circular flow of income- Two sector, three sector and four sector models- social accounting matrix.

Unit-II**Hrs 15**

Consumption function – importance of MPC and MPS – short period and long period consumption function – Theories of consumption function – Absolute income hypothesis, Relative income hypothesis, permanent income hypothesis, life cycle hypothesis.

Unit-III**Hrs 15**

Investment function – Autonomous and induced investment – Marginal Efficiency of Capital and rate of interest paradox of thrift – Multiplier principle- Accelerator principle-super multiplier.

Unit-IV**Hrs 15**

IS-LM curve model- goods market equilibrium, shift in the IS curve - Money Market equilibrium, shift in the LM curve – Intersection of the IS and LM curves – relative elasticities of monetary and fiscal policies – Three ranges; classical, Keynesian and, intermediate.

Unit-V**Hrs 15**

Theories of Business-cycles – phases of trade cycle theories – Super multiplier- Hicks theory ,Kaldor theory of business cycle, Samuelson's model of business cycle.

COURSE OUTCOMES:

On completion of the course the students will be able to

- Introduce the macroeconomic concepts and variables
- Make them understand the idea about aggregates and their significance.
- Learn the theoretical background of macroeconomics
- Understand the macro economic principles in Indian context

References:

- E.Shapiro : Macro Economic Analysis
- G.Ackley : Macro Economic Theory
- Surrey : Macro Economic Themes
- Mueller : Readings in Macro Economics
- K.R.Gupta : Macro Economics
- Rana&Varma : Macro Economic Theory
- Busch & Stanley : Macro Economics

Text:

- M.L.Jhingan : Advanced Macro Economic Theory

Semester	Subject Code	Title of the Paper	Hours of Teaching/ week	No. of Credits
I	20P1ECC3	Core –Indian Economic Development and policy	6	4

Objective:

- To offer first hand information regarding the recent trends in Economic development of various aspects and policy perspectives

Unit- I**Hrs 15**

Relevance of Economic development-problem in defining economic development – characteristic of less developed countries-national income of India – trends, growth, structure-Interstate variations of National Income – Per capita Income as an index of development.

Unit-II**Hrs 15**

Size and growth rate of population in India-Population policy – The concept of poverty and poverty line-poverty eradication Programmes in India – Nature of unemployment problem in India – Estimates of unemployment – Employment policy of Govt. of India-New Economic policy and employment.

Unit- III**Hrs 15**

Infrastructure and economic development-Energy and power-Transport and communication – New Telecommunication policy – Science and Technology for infrastructural development.

Unit -IV**Hrs 15**

Indian Industries-Role of Industries – Industrial Licensing Policy – Some major industries-Iron-Steel –Textiles-cement-Sugar-small scale and cottage industries-New Industrial policy.

Unit-V**Hrs 15**

Planning in India-planning and economic developments –objectives and strategies-Achievements and failures.

COURSE OUTCOMES:

On completion of the course the students will be able to

- Acquire the basic knowledge about the structure of Indian Economy
- Know the key problems in the Economic Development in India
- Know the efforts taken for the Economic Development of India

Know the different policies related to Economic Development

References:

- Misra&Puri - "Indian Economy"
- M.L.Jhingan - "Economics of development and planning"
- Arthur Lewis - "The Principles of Economic Planning"
- J.E. Meade - "The Controlled Economy"
- M.L.Seth - "Theory and Practice of Economic Planning"

Text:

- RuddarDatt& Sundaram K.P.M. - " Indian Economy"

Semester	Subject Code	Title of the Paper	Hours of Teaching/ week	No. of Credits
I	20P1ECC4	Core – METHOD OF ECONOMICS ANALYSIS-I (STATISTICAL METHODS)	6	4

Objectives:

- The main objective of this statistical method is to make the students familiar with the use of descriptive and probability statistics.
- To enable the students to apply the statistical tools for their research purposes.

Unit-I**Hrs 30**

Descriptive statistical measures – Mean Standard deviation – co-efficient of variation (Problems only) Lorenz curve, Gini ratio (Theory), Data Collection – Sources – Primary and Secondary – Methods – Census and sampling – Techniques.

Unit-II**Hrs 20**

Correlation analysis – Karl Pearson and Rank Correlation – Partial Correlation (Problem) – Multiple Correlation (Theory only)

Unit-III**Hrs 20**

Regression analysis – Least Square method – Simultaneous equations – (problem) – Partial and multiple regression (Theory Only)

Unit-IV**Hrs 30**

Probability – Theories – addition and multiplication – Binomial, Poisson, Poisson and Normal distribution.

Unit-V**Hrs 20**

Formulation and testing of hypothesis – Procedures adopted – test of significance t, F and X^2 . ANOVA – (Theory) – Estimation – Point and Interval.

COURSE OUTCOMES:

On completion of the course the students will be able to

- Understand the describe and inferential statistics
- Know the various statistical tools in Economics
- Facilitate a research bent of mind in statistical tools
- Inculcate the practice of applying various statistical tools

References:

1. Yamane.T : Statistics
2. Sancheti&Kapoor : Statistical Methods
3. Spiegel M.R : Theory and Problem of Statistics
4. Croxton and Cowden : Statistic

Text:

1. Gupta. S.P : Statistical Methods

Semester	Subject code	Title of paper	Hours of Teaching / Week	No. of Credit
I	20P1ECEL1A/B	Major Elective – Economic Reforms in India	6	4

Objective:

To know the background of Economic Reforms and the reforms in various sectors of the economy such as industrial Sector, Financial Sector and Foreign Trade.

Unit-I**Hrs 15**

Indian Economy during the pre-reform period (1956-1990) – socialistic pattern- public sector role – growth – Public Sector and Planning – Market socialism of China- Breakdown of socialism – perestrika – emergence of market economies – with reference to East European Countries and China.

Unit-II**Hrs 15**

Economic Reforms in India – Background – Foreign Exchange crisis, liberalisation, Privatisation and Globalisation – Review of Results of Privatisation – 1990-2000 (I Generation) Globalisation – advocacy – measures- impact

Unit-III**Hrs 15**

Economic Reforms – BOP and debt traps – foreign trade – EXIM policies of the Government- FDI, FII – Floating exchange rate – partial convertibility of currency – FOREX- reserve – Appraisal.

Unit-IV**Hrs 15**

Economic reforms – Industrial Policies – Industrial Development – Merger, acquisition, MNCS, Indian investment in other countries – skill export.

Unit-V**Hrs 15**

Economic reforms and financial sector development – Banking, Insurance, capital Market- Economic reforms and social sector development.

COURSE OUTCOMES:

On completion of the course the students will be able to

- know the development process in India after independence
- understand the problems and measures in their contextual perspective
- identify and analyse current issues

References:

1. RuddarDatt and K.P.M.Sundharam - "Indian Economy" 54th Edition S.Chand&Co.Ltd., New Delhi
2. Misra and Puri - "IndianEconomy"HimalayanPublishing Company, New delhi
3. RuddarDatt - "Economic Reforms in IndiaA critique", 1997 S.Chand and Company Ltd., New Delhi.

Text:

1. Uma Kapila (2007), Indian Economy Performance and Policies, Academic Foundation, New Delhi.

Semester	Subject code	Title of paper	Hours of Teaching / Week	No. of Credit
I	20P1ECEL1B	Major Elective – Evolution of Economic Doctrines	6	4

Objectives:

To expose the students to development of economic doctrines and to understand the evolution of basic economic theories.

Unit 1: Hrs 15

Adam Smith- Theory of Economics Development – Value and Distribution – Naturalism and Optimism Laissez faire-J.B.Say-theory of Value-Law of Markets.

Unit II: Hrs 15

David Ricardo-Theory of Value –Sraffa’s Discovery of the Average commodities and theory of comparative cost –T.R. Malthus-Theories of populations, value rent and gluts. Senior N.W. –Theory of value Distribution –J.S. Mill –Value Theory –Comparative Advantage-Individual socialist programme.

Unit III: Hrs 15

Theory of Productive Powers and policy of protection, Sismondi-Theory of gluts-Historical School-Critical and positive ideas, Karl Marks-Labour Theory of Value- Theory of Capitalist Competition Theory of Economics Development and Crisis.

Unit IV : Hrs 15

Marginal Revolution –Jevons-Menger-Walras-Marshall- Value-consumer’s surplus-Keynes-consumption economics-Depression Economics.

Unit – V : Hrs 15

a) Naoroji, b) R.C.Dutt, c) M.N.Roy and d) Gandhiji- Wants and Austerity Self-sufficiency, trusteeship, Nehruvian economic thought -Ambedkar’s economics ideas - Sen’s ideas on economic welfare.

COURSE OUTCOMES:

On completion of the course the students will be able to

- Gain knowledge of the origin and development of economic ideas
- Understand the influence of socio-political reality in shaping the economic ideas
- Understand the life and commitment of the economists

References

1. Roll. E. (1973) : A history of Economic Thoughts, Father, London.
2. Schumpeter, J.A. (1954) : History of Economic Analysis, Oxford university Press, New York.

Text Books

1. Gide and Rist : History of Economic Doctrines.
2. Eric Roll : History of Economic Thought.
3. Mark Blaug : Economic Theory in Retrospect.
4. Haney, L.H. : History of Economic Thought.
5. R.R. Paul : History of Economic Thought.
6. Harry Landreth : History of Economic Theory, Houghton Mifflin Co.
7. P.Ramaiah and : Dr. B.R. Ambedkar’s Economic Philosophy – K.SateeshReddyDelta Publishing House, Delhi. (1994).
8. GHOSH B.N. and GHOSH ROMA.A. : Short History of Economic Doctrines.

Semester	Subject Code	Title of the Paper	Hours of Teaching/ week	No. of Credits
II	20P2ECC5	Core – Research Methodology	5	4

Objectives:

To make the students to understand the nature, significance and problems of social science research.

To enable the students to be familiar with conducting research i.e. preparation, analysis, interpretation and report writing.

Unit-I**Hrs 15**

Social science research – Nature and problems – Objectivity – Criteria of good research – selecting the problem – techniques involved in defining the problem – Methods, Vs Methodology.

Unit-II**Hrs 15**

Methods of research – deductive and inductive – scientific method – Historical, survey and case study method – Dialectical and Historical

Unit-III**Hrs 15**

Research design – Meaning – need -features of a good design – different research design – hypothesis and model building.

Unit-IV**Hrs 15**

Methods of data collection – primary and secondary data – Questionnaire and schedules – construction of a Questionnaire – Census and sample – Types of sampling – preparation of tables.

Unit-V.**Hrs 15**

Interpretation and report writing – meaning of interpretation – techniques – significance of report writing – layouts – mechanics of report writing – style – use of footnotes and citations – general format.

COURSE OUTCOMES:

On completion of the course the students will be able to

- Know the nature of research in Economics
- Understand the various methods of research and techniques
- Understand the method of writing the research report
- Recognize the problems involved in research and to evolve solutions.

Reference:

1. Myrdal.G. - Objectives in Social Research
2. Kurien.C.T - A Guide to social science research
3. Pauline.V.Young - Scientific social Surveys and research
4. Goode and Hatt - Methods in social research
5. Wilkinson and Bandarkan- Fundamentals of social Science Research.
6. C.R.Kothari - Research Methodology

Text:

1. B.N.Ghosh - Scientific Methods in social Science.
2. P.Saravanavel - Research Methodology.

Semester	Subject	Title of the Paper	Hours of Teaching/Week	No. of Credits
II	20P2ECC6	Core – Advanced Micro Economics – II	5	5

Objectives:

To make the students to know macro distribution theory.

To enable the students to understand about the welfare criteria both under old and new Welfare Schools.

Unit - I **Hrs 15**
Game Theory – Input Output analysis – Linear programming – Applications.

Unit - II **Hrs 20**
Macro distribution theory – Classical model – Ricardo and Marx – Marginal productivity Theory – Euler’s Theorem –Kalecki’s Degree of Monopoly – Kaldor’s Theory.

Unit - III **Hrs 20**
Pareto optimality – Rehabilitation of welfare – Kaldor – Hicks – Scitovsky – K.J. Arrow’s Social welfare function – Bergson - Sen.’s Social choice.

Unit - IV **Hrs 20**
Economics of Risk and uncertainty – Basic concept – Individual consumer behaviour towards risk – Gambling – individual attitude towards gambling – Insurance – Problems of insurance – Choice between insurance and gambling – Markowitz portfolio theory.

Unit - V **Hrs 15**
Theories of search, Asymmetric information and efficient market – stigler, Rothschild, Salop and striglitz model – The Theory of Asymmetric information – Adverse solution – Akerlof – Michael Spence – Market signaling.

COURSE OUTCOMES:

On completion of the course the students will be able to

- Equip the students with the basic analytical skills on Game theory and input-output analysis.
- Enhance the skills of the students with regard to Macro theory of distribution.
- Impart the knowledge of rehabilitation of welfare economics.
- Provide the knowledge of economics of risk and uncertainty.

References:

1. A.Koutsoyiannis – “Modern Micro Economics”, McMillan Press Ltd; London, Second Edition – 1979.
2. Jack Hirshleifer, “Price Theory and Application” Prentice Hall of India Private Ltd; Third Edition, New Delhi, 1987.
3. W.J.Baumol, “Economic Theory and operation Analysis” Prentice Hall of India Pvt.ltd., New Delhi, 1963.
4. G.C.Dacosta “Value and Distribution – In Neo-Classical and Classical Systems” Himalaya Publishing House, Delhi, Second Edition: 1992.
5. J.Graff, “Development of Theoretical welfare economics”; Cambridge university press; Cambridge.
6. S.K.Nath: “A Perspective of welfare Economics”. Mac Millan: London 1973.

Text:

1. M.L.Jhingan – Advanced Economic Theory –2
2. P.N.Chopra – Pricing Distribution and Welfare
3. J.M.Kennedy – Advanced Micro Economic Theory.

<i>Semester</i>	Subject Code	Title of the Paper	Hours of Teaching/ week	No. of Credits
II	20P2ECC7	Core - Advanced Macro Economics- II	5	5

Objective:

To introduce monetary aspects of Macro Economics with the focus on theories of Money – Classical, Neo-Classical, Keynesian and post Keynesian, supply side economics and to highlight on functions of central bank and money market and significance of capital market with reference to India.

Unit-I**Hrs 25**

The Quantity theory – Fisher's transaction approach – The Cambridge cash balance approach – cash balance versus transaction approach.

Unit-II**Hrs 20**

Keynesian theory of money – Don Patinkin's integration of monetary and value theory – Real balance effect - Keynes effect versus pigou effect – Milton Friedman's Restatement of the quantity theory of money.

Unit-III**Hrs 20**

Post Keynesian approach to Demand for money – Baumol's inventory theoretic approach - its superiority over the Keynesian approach – Tobin's portfolio selection model – its superiority over Keynesian theory.

Unit-IV**Hrs 20**

Inflation – Inflationary gap – Phillips curve analysis – Rational Expectation hypothesis – Stagflation – Supply Side Economics – Macro Economics for open Economy – Mundel - Fleming Model.

Unit-V**Hrs 20**

Central bank functions – money market functions – importance of capital market – Gurley and Shaw theory – NBFIs – Monetary policy with reference to India.

COURSE OUTCOMES:

- On completion of the course the students will be able to
- Know the development process in quantity theory of money
- Understand the problems and measures in Post Keynesian approach to Demand for money
- Identify and analyze current issues of inflation
- To get inside role and functions of central bank, money market and capital market

References:

1. G.Ackley : Macro Economic Theory
2. E.Shapiro : Macro Economic Analysis
3. Don Patinkin : Money, Interest and prices
4. M.L.Jhingan : Monetary Theory
5. Friedman : Studies in the Quantity Theory of Money
6. James Trevithick & Charles Mulvey : The Economics of Inflation

Text:

1. M.L.Jhingan : Monetary Theory

Semester	Subject Code	Title of the Paper	Hours of Teaching/ week	No. of Credits
II	20P2ECC8	Core- METHODS OF ECONOMIC ANALYSIS-II (Mathematical Methods)	5	4

Objectives:

- Economic theory consists of general equations. The main aim of this mathematical method is to express the economic relations with the help of simultaneous equations. I.e., formulation of economic model.
- To study the nature and scope of mathematical economics and the basic concepts.
- To know the techniques of derivatives and their applications in economics especially in demand, Cost and revenue function.

Unit-I**Hrs 15**

Nature and scope of Mathematical Economics – Real number systems, - Set theory- concepts and operation of sets – Relations and function – constant – Linear, Quadratic, Cubic, Rational, Exponential and Logarithmic functions – examples in economics.

Unit-II**Hrs 15**

Derivatives – Techniques of derivatives – functions of one variable – two variables – application in economics – Demand, Cost and Revenue functions.

Unit-III**Hrs 15**

Optimization – Optimization problems involving one or two variables – partial and total differentiation – Application in Economics – Demand , Utility analysis- profit and revenue maximization – Euler’s Theorem.

Unit-IV**Hrs 15**

Linear Algebra – Introduction of linear algebra – Vector and Matrices Addition and Multiplication - Determinants – Matrix inverse.

Unit-V**Hrs 15**

Cramer’s rule – Simultaneous equations – Input – Output model – Linear Programming (graphical solution only).

COURSE OUTCOMES:

On completion of the course the students will be able to

- Understand the meaning and importance of mathematical tools
- Acquire the knowledge of applying mathematical tools to simple problems of economics.
- Learn the concept of differentiation and its application in economics.
- Learn concept of matrix and Cramer’s rules and its application in Economics – Input and output analysis and linear programming

Reference:

1. R.G.D. Allen - Mathematical Analysis for Economists
2. Deshpande, Chandekar - Elementary mathematical techniques for Economists
3. Mabblet - Mathematics of Economics
4. A.Koutsoyiannis - Econometrics
5. Agarwal,D.R. - Quantitative Methods

Text: 1.

- Metha and Mithani - Mathematics for Economists

Semester	Subject Code	Title of Paper	Hours of Teaching/ Week	No. of Credits
II	20P2ECC9	DEMOGRAPHY	5	4

Objectives

1. To understand the dynamics of population growth
2. To understand the concepts and theories applicable to India with the rest of the world.

Unit I: Introduction, Concepts and Determinants of Population Growth Hrs 15

Definition of Demography – Scope of Demography – Determinants of Demography – Fertility: Concepts and Measures of Fertility – Factors Affecting Fertility – Mortality: Concepts and Measures of Mortality – Factors Affecting Mortality – Causes for Decline in Mortality Rates in Developing Countries.

Unit II: Sources of Demographic Data and Migration Hrs 15

Population Census: Methods of Population Census – Salient Features – Uses – Census Method – Sample Surveys – Registration Methods – Population Pyramid. National Family Health Survey (NFHS) I, II and III and District Level Household Survey (DLHS); Migration: Meaning – Types – Various Concepts – Methods of Measuring Migration – Causes and Effects of Migration.

Unit III: Theories of Population Hrs 15

Malthusian Theory of Population – Optimum Theory of Population – Theory of Demographic Transitions – Dumont's Theory of Social Capillarity.

Unit IV: Population Growth and Economic Development Hrs 15

Effects of Population in Economic Development – Factors Promoting Economic Development – Factors Retarding Economic Development – Characteristics of Population in India – Size in Growth Rate of Population – Birth Rate and Death Rate – Infant Mortality Rate – Sex Ratio of Population – Rural-urban population – Density of Population – Population and Literacy – Expectation of Life at Birth Unit

Unit V: Population Policy in India and Recent Trends in World Population Hrs 15

Need for Family Planning in India – Recent Population Policy of the Government – Population and Millennium Development Goals (MDG) – Recent Trends in World Population.

COURSE OUTCOMES:

On completion of the course the students will be able to

- Students understand the sources of demographic data and migration.
- Acquaint students with various Theories of Population.
- Develop the skills for Population Growth and Economic Development.
- Inculcate the knowledge about Population Policy in India and Recent Trends in World Population.

References

1. Jhingan, M.L., Bhatt B.K & Desai J. N., Demography, Vrinda Publications (P) Ltd, New Delhi.
2. Bhenda, A.A. and Tara Kanitkar, Principles of Population Studies, H P House Mumbai
3. Government of India, Census of India (Various years) New Delhi

Semester	Subject Code	Title of the Paper	Hours of Teaching/ week	No. of Credits
II	20P2ECEL2A	Major Elective-Principles of Management	5	4

Objective:

To enable the students to understand the nature and principles of management.

Unit I**Hrs.15**

Definition – Scope- Functions- Managerial Functions- Development of Management thoughts- Scientific Management – F.W.Taylor- Fayol and Behavioural Scientists' contributions – Social Responsibility of Managers.

Unit-II**Hrs15**

Types – Objectives – Strategies – Procedure – Steps in Planning – Basic concepts in Management by Objectives (MBO) – benefits and weaknesses – Strategic Planning Process – Tows Matrix.

Unit-III**Hrs15**

Nature of Organizing – Types – Importance – principles of Organisation – Departmentation – Authority – Delegation of Authority- Span of Control – Decentralisation- Staffing- definition – Staffing function – selection – Job design – Skills and performance appraisal – problems and appraisal criteria.

Unit-IV**Hrs15**

Leadership definition – Types – Functions-qualities – Communication – Purpose-Importance – process – Communication flow in the Organization – Types – barriers in communication – guidelines for improving communication – Role of Electronic Media in communication- Motivation- definition – the carrot and the Stick –Hierarchy of Needs Theory (Maslow) – Hygiene Approach – Herzberg special motivational techniques.

Unit –V**Hrs15**

Nature – Control Process – Requirement of Good Control – Tools – Budgeting and Cost Control – Production Planning and Control – Steps in Statistical Quality Control – Profit and Loss Control- Directive and Preventive Control.

Course Outcomes

On completion of the course the students will be able to

- Acquaint students with the nature and functions of management
- Introduce the steps in importance of planning in management
- Develop the skills of organization as an important steps in management
- Inculcate the knowledge about leadership and quality control

Reference:

1. Harold Koontz, - Principles of Management, Heinz Wehrich and 2004 Edition, Tata Mchraw Hill Publishing Company Limited, New Delhi
2. Y.K.Bhushan - Fundamentals of Business Organisation and Management, 20th Edition 2005 Part Four, Sultan Chand and Sons, New Delhi.
3. R.N.Tripathy - Principles of Management

Semester	Subject Code	Title of the Paper	Hours of Teaching/ Week	No.of Credits
II	20P2ECEL2B	Major Elective- Capital Market and Investment Policies	5	4

Objectives:

- To motivate the students to understand nature of capital market and to learn to participate in share market.
- To prepare students for future courses having quantitative

Unit-I**Hrs15**

Capital Market-Definition-Growth-Concepts-Functions-Structure.

Unit-II**Hrs 15**

Long term finance-Sources-Financial Institution-LIC-UTI-IDBI-ICICI-Public deposit-Mutual Funds.

Unit-III**Hrs. 15**

Corporate securities-Equality shares-Preference shares-Debentures and Bonds-Convertible and Non-convertible debentures-Full and Partly convertible debentures-Global depository receipts.

Unit-IV**Hrs. 15**

Stock exchange-Functions-Listing of Certificate-Dealers in stock Exchanges-Role of securities and stock Exchange Board of India (SEBI) in the Regulation of share market operations.

Unit-V**Hrs. 15**

Public issues of shares-Primary Market-Secondary market-issues at par and at premium-Right issues of shares-Issues of Bonus shares-underwriting of shares-Merchant banks-Foreign Institutional Investors.

Note: To have tie-up with leading share broking agents to provide practical knowledge**COURSE OUTCOMES:**

On completion of the course the students will be able to

- Explain the students with growth and structure of capital market
- Analyse the long term financial institution in capital market
- Develop the skills about the types of securities floated in the stock market
- Inculcate the knowledge about the functioning of primary and secondary market
- SEBI - BSE - NSE

References:

1. V.A.Avadhani: Indian capital market,Himalaya Publishing House.
2. E.GordpamamK.Natarajan: Financial Market and Institutions- Himalaya Publishing House.
3. P.N. Varshney: Indian financial system
4. Preetisingh: Investment Management, Himalaya Publishing House.
5. PunithavathiPandiyani: Security Analysis and Portfolio Management.

Semester	Subject Code	Title of the Paper	Hours of Teaching/ week	No. of Credits
III	20P3ECC10	Core –Fiscal Economics-I	5	4

Objective:

To offer higher level treatment of public finance with social goods, market failures. Higher level theories of public expenditure, taxation and Indian tax structure

Unit- I**Hrs 15**

Private goods and social goods – Market failure, pure and impure social goods-merit goods-Mixed goods-Social Bads and Externalities – Musgravian partial and General equilibrium analysis for the provision of social goods.

Unit- II**Hrs 15**

Public expenditure – causes for the growth of public expenditure, the traditional and Musgravian analysis – Wagner, Peacock – Wiseman hypothesis – Evaluation of public expenditure –Cost Benefit Analysis – Trends in India's public expenditure – Theory of Government failure –Downsizing Government sector.

Unit- III**Hrs 15**

Theories of taxation – Benefit approach-Voluntary exchange approach, Bowen Lindahl model – Ability to pay approach –equal sacrifice theories – Fiscal neutrality – Excess burden doctrine – Marshall, Miss Joseph, Hicks – Taxable capacity-Colin Clark, Morag and Musgravian views-Laffer curve.

Unit- IV**Hrs 15**

Fiscal incidence – shifting and incidence of taxation – Dalton, Hicks and Musgravian analysis of incidence – Musgrave's measurement of incidence of commodity, taxes, Brown Rolph approach.

Unit- V**Hrs 15**

Indian tax structure – Role of direct and indirect taxes –individual taxes – income tax, corporate tax, GST– Indian tax reforms – Kaldor reforms -Raja Chelliah committee report.

COURSE OUTCOMES:

- On completion of the course the students will be able to
- Understand the difference among the various goods in economics
- Know the methods of raising public revenue.
- Acquainted with the principles of taxation.
- Know the types of public expenditure.
- Understand the reasons for growing public expenditure in India.
- Analyse the interrelationship between Center, State and Local Governments.

References:

1. Musgrave R.A.-Theory of Public Finance
2. Musgrave P.B.& Musgrave R.A.-Public Finance in Theory and Practice
3. Musgrave R.A. and Peacock A.T. – Public finance
4. Chellaiah R.J. – Fiscal Policy in Underdeveloped countries
5. Buchanan J.M. – The Demand and Supply of Public Good
6. S.K. Singh – Public Finance in Developed and Developing countries
7. B.P. Herber – Modern Public Finance.
8. World Bank Economic Review

Text:

1. R.Cauvery and Others: Public Finance

Semester	Subject Code	Title of the Paper	Hours of Teaching/ week	No. of Credits
III	20P3ECC11	Core – ECONOMETRICS METHODS	5	4

Objectives

- To study the nature and scope of Econometrics.
- To make the students to know the basics of simple regression and multiple regression analysis.
- To make the students to get familiarize with the use of dummy variable, OLS and maximum likelihood method.

Unit I Nature and Scope of Econometrics

Hrs 15

Econometrics-Meaning-Definition – Scope – Objectives – Methodology of Econometrics-Specification- Mathematical Economics and Econometrics Econometric models – Methodology of Econometric – Types of Econometrics- Role of Computer in Econometrics.

Unit II Simple Regression Analysis

Hrs 15

Simple Linear Regression - Ordinary Least Squares (OLS) Estimation-Assumptions- BLUE property- Desirable properties of least squares estimators; Goodness-of-Fit; Normality assumption for the errors; Maximum likelihood estimation-ANOVA.

Unit-III: Multiple Regression Analysis

Hrs 15

Multiple regression analysis: Estimation of parameters, goodness of fit - adjusted R², partial regression coefficients, testing of hypotheses – individual and joint significance: t and F-tests.

Unit-IV: Linear Models and Non-Linear Estimation

Hrs 15

Method of maximum likelihood and its properties (including consistency)-trinity of classical tests (Wald test, Lagrange multiplier, likelihood ratio)-consequences- detection and remedial measures of multicollinearity- heteroskedasticity (WLS, MLE)- and autocorrelation (GLS)- Specification error (omitted variable, inclusion of irrelevant variables, measurement error in dependent and independent variables)- method of moments (IV method)

Unit-V: Dummy Variable:

Hrs 15

Introducing dummy (independent) variables- nature of dummy variables, variables with two categories and more than two categories, dummy variable trap-Chow test for cross-section data and for time-series data (test structural stability of regression models)-interaction of two categorical variables- interaction of categorical and continuous (quantitative) variables.

COURSE OUTCOMES:

On completion of the course the students will be able to

- Understand the basic terminology in econometrics
- Work with simple linear regression model with OLS and maximum likelihood estimation
- Understand the calculation of multiple regression analysis its interpretation
- Work and understand the application of dummy variable in multiple regression

References:

1. Gujarati and Porter, Basic Econometrics, Fifth Edition, McGraw Hill/Irwin, 2009.
2. Greene, William H. Econometric Analysis. 6th Edition, Prentice Hall. 2008.
3. Johnston J. and DiNardo, J. Econometric Methods. 4th Ed. McGraw-Hill 1997. Greene
4. Ramanathan, Ramu, Introductory Econometrics with Applications, 5th edition, 2002, Thomson Asia Pte Ltd., Singapore.

Textbook

Damodar N. Gujarati, Dawn Porter and Sangeetha Gunasekar , Basic Econometrics, Fifth Edition, McGraw Hill/Irwin, 2017.

Semester	Subject Code	Title of the Paper	Hours of Teaching/ week	No. of Credits
III	20P3ECC12	Core – Environmental Economics	5	4

Objective:

To enable the students to apply economic tools to the problem of environment in relation to resource use and to provide exposure to the issues related to economic growth and environment quality.

Unit- I**Hrs 15**

Definition, Nature, Role and Scope of Environmental Economics – Some Basic Theory of Environmental Economics – Market failure and Externality –concept of welfare Economics, MSNP and MPNP and Pareto Efficiency – Environment Quality as a public good –Tragedy of commons, Individual preferences and the Pareto optimal provision of Environmental quality.

Unit- II**Hrs 15**

Nature of Environmental pollution-types – Air, Water, Noise and Land-causes and control.

Unit –III**Hrs 15**

Environmental protection – direct costs and indirect costs – Evaluation of Environmental Impact Assessment – Cost-effective and cost-Benefit Analysis.

Unit –IV**Hrs 15**

Environment and Development – Growth versus environment quality-“The Limits to Growth” (Club of Rome Model)- concept of sustainable Development-Environmental problems in Developed and developing countries – RIO summit.

Unit-V**Hrs 15**

India’s Environmental policy and performance – role of voluntary Agencies, project-Tiger-NCEPC –DOE.

COURSE OUTCOMES:

On completion of the course the students will be able to

- Know the basic concepts of Environmental Economics
- Understand the various environmental pollutions and the policy measures to control pollution.
- Know conservation of biodiversity from this course
- Know the applications of the waste management.

References:

1. W.J.Baumol-“Theory of Environmental Policy”
2. J.Joseph and Michael Taussig-“Environmental Economics”
3. Baumol and Others-“Economics, Environmental policy and quality of life”
4. Thomas Dunstion-“Some Economics of Air Pollution Control”
5. Papers on National Seminars on: Environmental Economics –Environmental pollution.
6. Bernad-J.Nebel-“Environmental Science”
7. Prof.Karpagam-“Environmental Economics-An introduction”
8. Dr.S.Varadarajan-“Environmental Economics”
9. Field Vary – C-“Environmental Economics – An introduction”
10. Pearce D.W.-“Environmental Economics”
11. E.J, Mishan – “The cost of Economics”

Text:

1. Dr.S.Sankaran – “Environmental Economics”.

Semester	Subject code	Title of Paper	Hours of Teaching / Week	No. of Credits
III	20P3ECC13	Core – Economics of Human Resource Development	5	4

Objectives:

- To make the students familiar with the components of HRD and its wider application and related issues in the context of development.
- To study the investment in and returns from human capital and the policy towards HRD.

Unit- I**Hrs 15**

Human resources – importance – role of human resource development and productivity – Supply of human capital, fertility and mortality – capital formation and skill formation – human development index.

Unit-II**Hrs 15**

Investment in human capital – education – cost of education – Investment in education – training – rate of return – policy towards human resource development.

Unit- III**Hrs 15**

Human resource development and health – Investment in public health – economic approach to health policy of the government – public and private service – nutrition – housing.

Unit- IV**Hrs 15**

Cost of health and expenditure on health – factors affecting health – preventive and curative health services – migration – internal and external – Brain Drain Vs human Capital Export.

Unit-V**Hrs 15**

Man Power planning – objectives and methods of forecasting-importance of Man Power Planning in India.

COURSE OUTCOMES:

On completion of the course the students will be able to

- Recognize the basic concepts related to Human Resource Development
- Learn the policies related to Human Resource Development
develop and assess the investment in human capital – Education, types of education and returns from education
- Disseminate with the practical applications of cost of health
- Get insight on manpower planning and forecasting manpower

References:

- 1.MarkBlaug : Human capital theory
- 2.Harison : Education manpower and economic growth
- 3.Gary Becker : Human Capital
- 4.MarkBlaug : Education Volume I and II
- 5.UNESCO : Man Power aspects of educational Policy
- 6.Meier-G : Leading issues in economic development
- 7.Rao V.K.R.V : Education and human resource development
- 8.KennethLee&Anne Mill : Economics of health in developingcountries.

Semester	Subject Code	Title of Paper	Hours of Teaching/ Week	No. of Credits
III	20P3ECC14	Core – Advanced General Economics - I	5	4

Objectives

1. To assist the students to understand the concepts in Economics
2. To help the students to prepare for SET / NET / JRF

Unit I: Microeconomics**Hrs 15**

Consumer Behaviour – Cardinal approach: Law of diminishing marginal utility – Law of Equi-marginal utility – Consumer surplus – Ordinal approach: Indifference curve – Properties of Indifference curve – Consumer equilibrium; - Modern utility analysis: Bernoulli – N.M utility – The Friedman savage hypothesis; Hicks revision of demand theory – Lancaster approach.

Unit II: Macroeconomics**Hrs 15**

Theory of output and employment: Classical theory – Neo-Classical theory – Keynesian – Post Keynesian theory – Theory of consumption – Multiplier – Accelerator – Super multiplier.

Unit III: Development and Growth**Hrs 15**

Theories of economic development: – Adam smith – Ricardo – Marx – Schumpeter – Rostow – Balanced – Unbalanced – Big push theory – Poverty: Absolute and relative – Voices circle of poverty – Poverty alleviation programme.

Unit IV: Public Finance**Hrs 15**

Public finance: Definition – Types of goods – Theories of taxation – Types – Incident and effect – Theories of public expenditure – Public debt.

Unit V: Monetary Economics**Hrs 15**

Components of money supply: – Role – Constituents and functions of money and capital market – Commercial bank and co-operative bank – specialized financial institution – Merger of banking – Demonetization.

COURSE OUTCOMES:

On completion of the course the students will be able to

- Comprehend the various theories of consumer behaviour
- Learn how employment and output is determined by the views of various economists
- Assess the theory of economic development
- Make acquainted the students with the theories of taxation and public expenditure
- Get insight on functioning of RBI and its role in controlling money supply

REFERENCES

1. GopalGarg, UGC NET/JRF/SET Economics, Upkarprakashan, Agra.
2. Gupta, UGC NET/ SLET Economics, Danika Publishing Company, New Delhi.
3. John Kennedy M. Objective Economics for Competitive Examinations, Himalaya Publishing House, Mumbai
4. Sanjay Kumar, UGC NET/SLET Economics, Ramesh Publishing House, New Delhi
5. SrinivasShirur, UGC NET/ SLET Economics, Danika Publishing Company, New Delhi.

Semester	Subject code	Title of paper	Hours of Teaching / Week	No. of Credit
III	20P3ECEDC	Extra Disciplinary Course – Issues in Indian Economy	4	-

Objective:

This Elective paper is offered to the Non-Economics Students to make them familiar with the recent trends in Indian Economy. The syllabus is framed accordingly with the Civil Service Examination.

Unit I**Hrs 15**

Economic development and growth – determinants of growth and development – Market Economy – Indian Economy – a shift from mixed economy to Market economy – Reform measures introduced in India – First and second generation reforms – (Brief outline)

Unit-II**Hrs15**

Economic Reforms in India – background, rationale – implementation – Trade policy – Industrial policy –

Unit-III**Hrs 15**

Liberalisation: meaning, Deregulation – Privatisation: meaning - Dis-investment of public enterprises – rationale – changing profile of PSUs comparison of public and private sector

Unit-IV**Hrs 15**

Globalization – impact on India – foreign capital – Types FDI and FII, Policies and pattern - exchange rate and capital market reforms.

Unit-V**Hrs 15**

Foreign Trade – Exim Policies – Recent exim policy – BOP- Trends in BOP – Macroeconomics – Make in India, Skill India, Digital India.

Course Outcomes

On completion of the course the students will be able to

- Understand the status of Indian economy before the reforms
- Assess the rationale of introducing reforms in India
- Familiarize with the package of LPG
- Get insight on the recent trends in EXIM policy

References:

1. Uma kapila– Indian Economy (Issues in Development and Planning and Sectoral aspects) Fifth Edition, 2006-07, Academic Foundation, New Delhi
2. Datt Raddar & Sundharam K.P.M. - Indian Economy (2007)
3. Misrapuri - Indian Economy

Semester	Subject Code	Title of the Paper	Hours of Teaching/Week	No .of Credits
IV	20P4ECC15	Core- Fiscal Economics-II	6	4

Objective:

To enable the students to understand fiscal policy and its Impact on the economy-fiscal Instruments. public debt, fiscal federalism and budgeting.

Unit –I**Hrs 15**

Objectives of Fiscal policy, traditional and Musgravian approach – fiscal functions, Allocation, distribution and stabilization – conflicts – three fiscal multipliers – government expenditure, tax and balanced budget multiplier – functional finance.

Unit –II**Hrs 15**

Fiscal instruments for contra cyclical and compensatory fiscal policy – automatic stabilizer – built in stabilizers – discretionary stabilizers – formula flexibility – efficacy of fiscal policy – the three ranges, IS and LM analysis – fiscal policy lags – recognition lag, implementation lag and response lag.

Unit –III**Hrs 15**

Public debt as an instrument of fiscal policy – types – public Debt Burden Controversy – principles of management of public debt – redemption methods – India's public debt – public debt trap.

Unit- IV**Hrs 15**

Principles of fiscal federalism – balancing factors – Allocation of resources and functions under Indian federalism – Problem of centre state relations – Functions of finance commissions – Recent two Finance commissions 14th and 15th–Local finance – state finance commission.

Unit –V**Hrs 15**

Planning, Programming and Budgeting – Zero Based Budgeting – Performance budgeting – Budgetary procedure in India – Budgetary control – Analysis of the latest budget of the Indian Union.

COURSE OUTCOMES:

On completion of the course the students will be able to

- Understand the major functions of government
- Identify the various types of budgeting
- Make the students to known with fiscal instruments and its application
- Get insight on instruments of public debt

Reference:

1. Musgrave, R.A. – “Theory of Public Finance”
2. Musgrave, P.B. & Musgrave, R.A. – “Public Finance in Theory and Practice”
3. Mugrave, R.A. and Peacock, A.T. – “Public Finance”
4. Chellaiah, R.J. – “Fiscal policy in Underdeveloped Countries”
5. S.K. Singh – “Public Finance in Developed and Developing Countries”
6. B.P. Herber – “ Modern Public Finance”

Text:

1. R. Cauvery and Others: Public Finance.

Semester	Subject	Title of the Paper	Hours of Teaching/Week	No. of Credits
IV	20P4ECC16	Core – International Economics	5	4

Objectives:

To make the students to learn the fundamentals of international trade and international financial institutions with reference to India.

Unit- I**Hrs 15**

International Trade –Theories of international trade – Smith – Ricardo – Haberler – Heckcher and Ohlin – Samuelson theorem – Leontief Paradox.

Unit- II**Hrs 15**

Balance of Payment – Components – Balance of Trade and balance of payment – Disequilibrium in the BOP – Adjustment mechanism – Measures of correcting disequilibrium – Fiscal and monetary measures.

Unit- III**Hrs 15**

Theory of foreign exchange – Foreign exchange market – functions – Exchange rates – Fixed and Flexible exchange rate – Merits, Demerits – Determination of exchange rate – Purchasing power parity theory – Balance of payment theory – Exchange control – Objectives, methods – Direct and indirect.

Unit –IV**Hrs 15**

International trade and Financial institution – GATT – WTO – UNCTAD – CARTELS – OPEC – IMF – IBRD – Euro dollar – International Liquidity – Regional blocks – Emergence of EU.

Unit –V**Hrs 15**

India's foreign trade – Foreign trade and economic development – Composition – Direction – Trends – Foreign trade policy – Foreign investment and economic development – FDI, FII

COURSE OUTCOMES:

On completion of the course the students will be able to

- Analyse various international trade theories
- Understand the components of BOP and measures to correct it
- Understand the important theories of foreign exchange and its determination
- Understand the role of international financial institution and world trade

References:

1. P.T. Ellsworth : Internatioinal Economics
2. Harry G. Johnson: International trade and Economic Policy
3. Sydney J. Wells: Internatioinal Economics
4. Mithani D.N: Internatioinal Economics
5. Cherunilam F: Internatioinal Economics

Text

1. M.L Jhingan : International Economics

Semester	Subject Code	Title of Paper	Hours of Teaching/ Week	No. of Credits
IV	20P4ECC17	Core- Advanced General Economics - II	6	4

Objectives

1. To assist the students to understand the concepts in Economics
2. To help the students to prepare for SET / NET / JRF

Unit I: Microeconomics**Hrs 15**

Theory of production function: - Law of variable proportion and law of return to scale; - Concepts of cost and revenue - Different forms of market structure - Price and output determination: - Perfect competition - Monopoly - Monopolistic competition - Oligopoly; - Different models of objectives of the firm.

Unit II: Macroeconomics**Hrs 15**

Theories of demand for money:- Keynesian and post - Keynesian - Different approach to money supply - Money multiplier - IS-LM model - Inflation and Philips curve analysis.

Unit III: Development and Growth**Hrs 15**

Theories of economic growth:- Harrod-Domar - Solow - Robinson - Kaldar; Economic indicators:- PQLI - HDI - SDG - MDG.

Unit IV: Public Finance**Hrs 15**

Union-State financial relation - Union finance: - Trends in revenue and expenditure of the government of India; - State finance: - Trends in revenue and expenditure of the state government - Latest finance commission - NITI Aayog - Fiscal policy and Fiscal reforms in India - Latest union budget.

Unit V: Monetary Economics**Hrs 15**

RBI - Recent monetary and Credit policy - Non-banking financial institution and Regional Rural Bank - International organisation:- IMF - IBRD - SAARC - G20.

COURSE OUTCOMES:

On completion of the course the students will be able to

- Get on idea about different types of market
- Student understands the theory of demand for money
- Familiarizethe financial relationship between Centre and state government
- Understand the role of Reserve bank of India and how RBI regulate the non-banking financial company

REFERENCES

1. GopalGarg, UGC NET/JRF/SET Economics, Upkarprakashan, Agra.
2. Gupta, UGC NET/ SLET Economics, Danika Publishing Company, New Delhi.
3. John Kennedy M. Objective Economics for Competitive Examinations, Himalaya Publishing House, Mumbai
4. Sanjay Kumar, UGC NET/SLET Economics, Ramesh Publishing House, New Delhi
SriwasShirur, UGC NET/ SLET Economics, Danika Publishing Company, New Delhi.

Semester	Subject Code	Title of the Paper	Hours of Teaching/ week	No. of Credits
IV	20P4ECEL3A	Major Elective – Economics of Growth and Development	6	4

Objectives:

- To make the student to know the basic concepts of growth and developments factors influencing it –social, political, institutional etc.
- To enable the students to study the classical, Neo-classical, Keynesian and Post-Keynesian Theories of Development.

Unit – I**Hrs 15**

Economic growth and Development – criteria – factors affecting economic growth – vicious circle –Nurkse, Meir and Baldwin-Technological progress-production function approach to the economic growth-.

Unit – II**Hrs 15**

Theories of Development –Classical theory of development-Smith, Ricardo, Malthus and Mill-Karl Marx and development of capitalistic economy-crisis in Capitalism-Schumpeter and Capitalistic development.

Unit – III**Hrs 15**

Neo-Classical theory of growth –Meade and Solow - Mrs. Joan Robinson’s growth model-Keynesian theory of development –Post- keynesian theory of growth – Harrod and Domar model.

Unit - IV**Hrs 15**

Approaches to Development – Partial theories of growth and development –Big push, balanced growth, Unbalanced growth, Critical minimum effort thesis, low income equilibrium trap – Dualism – Technical, behavioural and social – Ranies and Fei model.

Unit – V**Hrs 15**

Social and Institutional Aspects of Development – Development and under development- perpetuation of underdevelopment – Poverty-absolute and relative-Per capita income, inequality of income-Human development index-Sen’s index-quality of life –Theory of demographic transition – Population, poverty and environment –Economic development and Institutions.

COURSE OUTCOMES:

On completion of the course the students will be able to

- Understand the various concepts of Growth and Development
- Analyze theoretical and empirical issues in economic growth and development.
- Familiarize the students with various theories in economic growth and development
- Understand the various socio-economic indicators of development

References:

1. Kindleberger C.P : "Economic Development"
2. Higgins B.J. : "Economic Development"
3. Meir and Baldwin : "Economic Development"
4. Brown N. : "On the theory and measurement of Technical Change"
5. Adelman I : "Theories of Economic growth of Development"
6. Kahkonon S and Olson.M : "A new Institutional Approach of Economic development."

Text:

1. Dewett K.K. and Wadhawani - "Economics "

Semester	Subject code	Title of the paper	Hours of Teaching/week	No. Of Credits
IV	20P4ECE3B	Major Elective – Economics of Information Technology	6	4

Objective:

- Identify the major aspects of the economics of information technology.
- Demonstrate how to define and measure tangible information technology benefits.
- Show how to evaluate intangible information technology benefits.

Unit-I**Hrs15**

Definition of information-industry Value Chain Knowledge Economy information of Economy-information Economy. Nature and Scope of informationTechnology-Variou Sources of information.

Unit -II**Hrs15**

The Role of Mass Media, The Tele Communications industry-Origins, The Computer industry – Origins of hardware and software. The Broadcast industry, Cable and Satellite Television.Theory of public good, information as a public good, Role of Government in information and the Media-Broadcast and Cable Television, Telecom-communications,News Papers.

Unit-III**Hrs15**

Information Technology – Labour and Employment-Globalization; Effect on Productivity-Contingent labour-part time employment – impact on Older persons, Gender Issues-Human Resource Development.

Unit-IV**Hrs15**

Information Technology and the Media in the Global Economy-Global information infrastructure – Relationship between Trade and infrastructure-The General agreement on Trade and Services – WTO basic Telecommunication agreement – WTO information Technology agreement-Trade related intellectual property rights.

Unit-V**Hrs15**

Issues in Media and information Economics – Gap between developed and Developing Nations-Piracy-The legal and regulatory environment –The role of the Government-information Technology in the Asia and] Pacific- the Geographic shifts in the Electronics industrySingapore’s National information infrastructure-Malaysia’s National information infrastructure.

COURSE OUTCOMES:

On completion of the course the students will be able to

- Understand the nature and scope of information technology
- Analyse the origin and development of mass media.
- Familiarize the students the impact of information technology on various economic indicators
- Understand the issues in media and information economics

References:

1. Linda low, Economics of information Technology and the Media, World ScientificSingapore University Press, National University of Singapore, Singapore, 2000.
2. Hal R. Varian, Joseph Farrell, Carl Shapiro The Economics of InformationTechnology An Introduction, Cambridge University Press

COMMUNICATION SKILL AND PERSONALITY DEVELOPMENT

SEMESTER	SUBJECT CODE	TITLE	HOURS OF TEACHING/ WEEK	NO OF CREDITS
IV	20P4-CPD	Communication Skill and Personality Development	1	

COURSE OBJECTIVES:

- To cultivate positive personality traits for successful life.
- To groom Winning Attitude among the learners.
- To assist the learners to identify their own potential and realize their aspirations.
- To enable a holistic development.
- To facilitate optimum means of improving personal performance.

UNIT 1

1. Personality- Definition.
2. Determinants of Personality.
3. Perceptual Process.
4. Personality Traits.
5. Developing Effective Habits.
6. Self Esteem (Freud and Erikson).
7. Self Appraisal and Self Development.
8. Dos and Don'ts to develop positive self esteem.
9. Interpersonal Relationship.
10. Difference between Aggressive, Submissive and Assertive behaviour.
11. Mind Mapping, Competency Mapping, 360 degree assessment.
12. Presentation Skills – Opening, ending, Handling nerves, Handling audience, Power Storytelling, Visual aids, Question and answer session

UNIT 2

1. Projecting Positive Body Language.
2. Conflict Management.
3. Change Management.
4. Stress Management.
5. Time Management.
6. Goal Setting.
7. Assertiveness and Negotiating Skill.
8. Problem Solving Skill.
9. Decision Making Skills.
10. Leadership Qualities of a Successful Leader.
11. Attitudes – Positive Attitudes.
12. Public Speaking – Engaging, Connecting, and Influencing the audiences.
13. Employability Skill – Group Discussion, Interview Questions, Psychometric analysis.

COURSE OUTCOMES:

After completion of the course, Students will be able to:

- Gain self confidence and broaden perception of life.
- Maximize their potential and steer that into their career choice.
- Enhance one's self image & self esteem.
- Find a means to achieve excellence and derive fulfilment.

References:

Hurlock.E.B (2006) : Personality Development, 28th Reprint. New Delhi: Tata McCraw Hill.

Stephen.P.Robbins and Timothy. A.Judge (2014) : Organisation Behaviour.16th Edition.Prentice Hall.

Andrews, Sudhir. How to Succeed at Interviews. 21st (rep) New Delhi.Tata McGrew Hill 1988.

Lucas, Stephen. Art of Publication. New Delhi. Tata McGrew Hill. 2001.

Kumar, Pravesh. All about Self Motivation. New Delhi. Goodwill Publication House. 2005.

EXTRA DISCIPLINARY COURSES

Sl. No.	Subject Code	Title of the Paper	Department
1.	20P3HYEDC	INDIAN ADMINISTRATION	History
2.	20P3ECEDC	ISSUES IN INDIAN ECONOMY	Economics
3.	20P3TAEDC	<i>தமிழ்மொழி வரலாறு</i>	Tamil
4.	20P3ENEDC	SHAKESPEARE STUDIES	English
5.	20P3CMEDC	ENTREPRENEURIAL DEVELOPMENT	Commerce
6.	20P3MAEDC	APPLICABLE MATHEMATICAL TECHNIQUES	Mathematics
7.	20P3PHEDC	FUNDAMENTALS OF NANOTECHNOLOGY	Physics
8.	20P3CHEDC	CHEMISTRY IN EVERY DAY LIFE	Chemistry
9.	20P3BOEDC	MEDICAL BOTANY AND PHARMACOGNOSY	Botany
10.	20P3MBEDC	MUSHROOM TECHNOLOGY	Microbiology
11.	20P3ZOEDC	CLINICAL LAB TECHNOLOGY	Zoology
12.	20P3BTEDC	RECENT TRENDS IN BIOTECHNOLOGY	Biotechnology
13.	20P3CSEDC 20P3ITEDC	E-LEARNING TECHNOLOGIES	Computer Science
14.	20P3LSEDC	DOCUMENTATION CENTERS IN INDIA	Library and Information Science

Semester	Course Code	Title of the Course	Hours of Teaching /Week	No. of Credits
III	20P3HYEDC	Extra Disciplinary Courses – Indian Administration	5	--

Objectives:

1. To know the evolution of Indian Administration.
2. To prepare the students for the competitive examination.
3. To give up-to-date knowledge on Indian administration.
4. To trace economic planning of India, through which the students may get practical knowledge on budget, etc.
5. To expose the state administration and the latest issues like Lok Ayukt and LokPal through which the students may get awareness about the latest issues.

Unit I

Hrs 15

The evolution of Indian administration: Structure and Functions–Mauryan and Mughal legacy; British Indian system: Company’s experiments–Warren Hastings, Lord Cornwallis, Lord Hastings and Lord Dalhousie; Administrative consolidation since 1861 – Famine policy – Financial, Police and judicial administration.

Unit II

Hrs 15

Indian Administration since 1950: Parliamentary Democracy–Federation–Structure of Central Administration–Central Secretariat–Cabinet Secretariat, Ministries–Department of Boards.

Unit III

Hrs 15

Machinery for planning: Plan formulation at the National level – National Development Council – Planning Commission – Public undertaking – Controls of Public expenditure.

Unit IV

Hrs 15

State Administration–Executives–Secretariat–Chief Secretary–Directorates–District and Local Administration–District Rural Development Agency–Special development programmes.

Unit V

Hrs 15

Center-State relations – Public services – Police and Judicial administration – Lok Ayukt – Lok Pal – issues on Indian administration – Integrity in administration – Administrative reforms.

General References:

1. Altekar, A.S., State and Government in Ancient India, 1958.
2. Bhambri, C.H., Public Administration in India.
3. Vidya Bhushan, Indian Administration, Delhi, 2000.
4. Vishnoo Bhagawan & Vidhya Bhushan., Indian Administration, New Delhi, 1996.

Course Outcome: The students have clearly understood about the evolution of Indian Administration, State and Central administration, police and judicial administration, Centre State relations, etc.

Semester	Subject code	Title of paper	Hours of Teaching / Week	No. of Credit
III	20P3ECEDC	Extra Disciplinary Courses – Issues in Indian Economy	4	-

Objective:

- This Elective paper is offered to the Non-Economics Students to make them familiar with the recent trends in Indian Economy. The syllabus is framed accordingly with the Civil Service Examination.

Course Outcomes

- To understand the status of Indian economy before the reforms
- To assess the rationale of introducing reforms in India
- To familiarize with the package of LPG
- to get insight on the recent trends in EXIM policy

Unit I

Hrs 15

Economic development and growth – determinants of growth and development – Market Economy – Indian Economy – a shift from mixed economy to Market economy – Reform measures introduced in India – First and second generation reforms – (Brief outline)

Unit-II

Hrs 15

Economic reforms in India – background, rationale – implementation – Trade policy – Industrial policy – exchange rate and capital market reforms

Unit-III

Hrs 15

Dis-investment of public enterprises – rationale – changing profile of PSUs comparison of public and private sector

Unit-IV

Hrs 15

Privatization – Meaning and scope – Globalization – impact on India – foreign capital – Types FDI and FII, Policies and pattern.

Unit-V

Hrs 15

Foreign Trade – Exim Policies – Recent exim policy – BOP- Trends in BOP – Economic reforms and BOP.

References:

- Uma kapila – Indian Economy (Issues in Development and Planning and Sectoral aspects) Fifth Edition, 2006-07, Academic Foundation, New Delhi
- Datt Rudder & Sundharam K.P.M. – Indian Economy (2007)
- Misrapuri – Indian Economy

Semester	Subject Code	Title of the Paper	Hours of Teaching/Week	No. of Credits
III	20P3TAEDC	கூடுதல் சிறப்புப் பாடம்: தமிழ்மொழி வரலாறு	4	-

கூறு: 1 இந்திய மொழிக் குடும்பங்கள் **நேரம்: 12**
இந்தோ ஆரிய மொழிகள் - ஆஸ்டிக் மொழிகள் - சீன திபெத்திய மொழிகள் - திராவிட மொழிக் குடும்பம் - டாக்டர் கால்டுவெல், திராவிட மொழிகளின் சிறப்பியல்புகள் - தென் திராவிட மொழிகள் - தென் திராவிட மொழிகளில் தமிழ் - நடுத்திராவிட மொழிகள் - வட திராவிட மொழிகள்.

கூறு: 2 தமிழ் **நேரம்: 12**
தமிழ் என்பதன் வடிவம் பற்றியும் பொருள் பற்றியும் பல்வேறு செய்திகள் - பெயரெச்சங்கள் - வினையெச்சம் - சங்க இலக்கியத்தில் வினையெச்சங்கள் - தொல்காப்பிய உரைகாரர்களும் வினையெச்சங்களும்.

கூறு: 3 **நேரம்: 12**
தமிழ் எழுத்தின் தோற்றமும் வளர்ச்சியும் - ஆய்வெழுத்து இராசியெழுத்து, நாள், எழுத்து - ஓவியம், பாளை ஓடுகள், இலங்கை முத்திரை முதலானவற்றில் காணப்படும் உருவ எழுத்துகள் - வட்டெழுத்து, பண்டைத் தமிழ் எழுத்து. தமிழ்மொழி வரலாறு: தமிழின் தொல் வரலாறு, தமிழ்மொழி வரலாறு - பழந்தமிழ்க் காலம், இடைத்தமிழ்.

கூறு: 4 **நேரம்: 12**
தொல்காப்பியமும் ஒலியியலும் - தொல்காப்பியமும் சொல்லியலும் - தமிழ் ஒலிகளின் பிறப்பு விளக்கம் - புணர்ச்சி வகை. தமிழ் உருபனியலும் தொடரியலும் - தலைமை இலக்கணக் கூறுகள் - தொடரமைப்பு இலக்கணம். பெயர்த்தொடர் அமைப்புகள்: மொழியின் பெருமை - எழுத்தும் பேச்சும் - கிளை மொழிகள் தோற்றம் - இலக்கியக் கிளைமொழி- வட்டாரக்கிளை மொழிகள்.

கூறு: 5 **நேரம்: 12**
தமிழ் வளர்ச்சி - தமிழ் ஆட்சிமொழி வரலாறு - தமிழ் கல்விமொழி வரலாறு - கலைச் சொல்லாக்கம் - அறிவியல் தமிழ் வளர்ச்சி-உலகத் தமிழ் மாநாடுகள்- உலக அரங்கில் தமிழ் - தமிழ் அமைப்புகள்- உலகத் தமிழாராய்ச்சி நிறுவனம் - தமிழ்ப்பல்கலைக் கழகம்-செம்மொழி ஆய்வுமையம் - அயல் மாநிலங்களில் தமிழ்.

பார்வை நூல்கள்:

1. தமிழ் வரலாறு - தேவநேயன். ஞா.
2. தமிழ் மொழி வரலாறு - பரிதிமாற்கலைஞர்
3. பழந்தமிழ் - இலக்குவனார் . சி
4. தமிழ் வரலாறு - குணா
5. தமிழ் மொழி வரலாறு - தமிழ் வளர்ச்சி இயக்ககம்
6. ஆட்சித் தமிழ் - புதுவை மொழியியல் பண்பாட்டுக் கழக வெளியீடு
7. இந்திய ஆட்சிப்பணி வழிகாட்டி - முனைவர் ரெ. குமரன்.
8. உலகத்தமிழ் மாநாடுகள் - சாலை இளந்திரையன்
9. தாய்மொழியில் படிக்க வைப்போம் - NCBH வெளியீடு.
10. தமிழ் ஆட்சி மொழி வரலாறு - தமிழ்ப்பல்கலைக்கழகம்.
11. தமிழ் ஆட்சிமொழி வரலாறு - தெ.பொ.மீ.
12. தமிழ் மொழி வரலாறு - சக்திவேல்

Semester	Course Code	Title of the Course	Hours of Teaching / Week	No. of Credits
III	20P3ENEDC	Extra Disciplinary Course - Shakespeare Studies	4	

Objective

- To initiate the non English majoring students to study Shakespeare's plays, and his sonnets.

Outcome

- Gaining appreciative and analytical understanding of Shakespeare's dramas and sonnets.
- Achieving potentiality to situate and relate Shakespeare's wisdom in various current disciplines and media cultures.
- Obtaining a profound perspectives on handling racism, class divisions, gender roles, crime, love, war, death betrayal, hope, loyalty etc., derived from the works

Unit – I

Shakespeare's Sonnets 1, 18, 29, 33, 35, 65 and 130

Unit – II

The Merchant of Venice

Unit – III

Henry IV, Part I

Unit – IV

Othello

Unit – V

Antony and Cleopatra

References:

- Bates, Jonathan. *The Genius of Shakespeare*. London: Picador, 1997.
- Leishman, J.B. *The Theme and Variation in Shakespeare's sonnets*. London: Routledge, 2005.

Semester	Subject Code	Title of the paper	Hours of Teaching/ Week	No. of Credits
III	20P3CMEDC	Entrepreneurial Development	4	-

Objective:

- To make the students to become a successful entrepreneur and to know the process involved in entrepreneurship.

Course Outcome:

- Learn the incentives and subsidies provided to budding entrepreneurs and Become familiar with institutions offering various forms of assistances.

Unit - I

Entrepreneurship - Nature and Characteristics of an Entrepreneur - Difference between Entrepreneur and Manager - Qualities, Types, and Functions of an Entrepreneur - Role of Entrepreneur in Economic Development.

Unit - II

Business Ideas - Sources of Idea - Idea Processing and Selection - Start up Process - Project Identification and Selection - Project Formulation - Project Appraisal.

Unit - III

Factory Design and Layout - Importance - Factors affecting Factory Design - Factory Layout - Objectives - Types - Consideration in Designing Layout - Design Requirements.

Unit - IV

Institutions Assisting to Entrepreneurs - NSIC - SIDCO - SSIB - DIC - TIIC - KVIC - TCO - ITCOT - Commercial Banks and New Entrepreneurial Development Agency.

Unit - V

Entrepreneurship Development Programmes - Need - Objectives - Institutional efforts in Developing Entrepreneurship - Evaluation of EDPs - Problems in the conduct of EDPs - Suggestions to make EDPs effective - Planning EDPs - Role of SISI, SIPCOT and SIDBI - Recent Development in Small Enterprises in India - Government rules and regulations - Rural Entrepreneurship - Need for Rural Entrepreneurship Problems - SHGs and Rural Development - MUDRA Banking /MSME Loans.

Text book:

1. C.B.Gupta., N.P.Srinivasan, (2018), Entrepreneurial Development, Sultan Chand & Sons, New Delhi.

Reference Books

1. Khanka S.S., (2019) Entrepreneurial Development, S.Chand & Co, New Delhi.
2. Saravanavel, P. (2016), Entrepreneurial Development, Principles, Policies and Programmes, Ess Pee Kay Publishing House, Tanjore.
3. Renu Arora, Sood S.K., (2018) Fundamentals of Entrepreneurship and Small Business, Kalyani Publications, Ludhiana.
4. Jayashree Suresh, (2019) Entrepreneurial Development, Margham Publications, Chennai.

Semester	Subject Code	Title of the Paper	House of Teaching / Week	No. of Credits
III	20P3MAEDC	Extra Disciplinary Course- Applicable Mathematical Techniques	4	-

Objectives:

- To discuss various methods of Interpolation

Out comes:After studying this course the student will be able to

- Student will demonstrate the ability to solve financial math problem.

Unit I

12 Hrs

Interpolation with unequal intervals: Newton's divided difference formula - Lagrange's interpolation formula and inverse interpolation. (Only simple Problems)

Unit II

12 Hrs

Assignment problems

Unit III

12 Hrs

Replacement problems (Only simple Problems)

Unit IV

12 Hrs

Decision Analysis

Unit- V

12 Hrs

Game Theory

Text Book:

1. For unit I, **Numerical Methods** – P. Kandasamy, K. Thilagavathy, K. Gunavathy, S.Chand
2. For units II to V, **Operation Research 12th Edition 2004:**KanthiSwarap, P.K. Gupta and Manmohan, Sultan Chanda and sons, New Delhi.

Unit I	:	Chapter - 8 (Sec: 8.5, 8.7)
Unit II	:	Chapter - 11 (Sec: 11.1 to 11.4)
Unit III	:	Chapter - 18 (Sec: 18.1 to18.3)
Unit IV	:	Chapter - 16 (Sec: 16.1 to 16.5)
Unit V	:	Chapter - 17 (Sec: 17.1 to 17.6)

General Reference:

1. S.S. Sastry *Introductory Methods of Numerical Analysis* Prentice Hall of India 2000.
2. H.A. Taha *Operation Research* Prentice Hall of India 1995.

Semester	Subject Code	Title of the paper	Hours of Teaching / Week	No. of Credits
III	20P3PHEDC	Extra Disciplinary Course- Fundamentals of Nanotechnology	4	-

Unit – I Introduction to Nanotechnology

Nanotechnology – Definitions - History of nanotechnology – Nanomaterials: classification – zero, one and two dimensional nanomaterials – Classification based on the composition of materials (metal, semiconductor, ceramic, polymeric and carbon-based nanomaterials) - Properties of nanomaterials – Surface area to volume ratio (S.A/V) – Quantum dots - Challenges in nanotechnology.

Unit – II Preparation Methods

Top-down and Bottom-up approaches – Top down methods: Ball milling - Electron beam lithography – Advantages – Limitations. Bottom-up methods: Vacuum evaporation - Sputter deposition process - Laser ablation – Advantages – Limitations.

Unit – III Fullerenes

Fullerenes – Types of fullerenes – Bucky ball/Buckminster fullerene - Carbon nano tubes (CNTs) - Single walled CNTs – Multi walled CNTs – Differences – mechanical and electrical properties of CNTs - preparation of CNTs – Plasma discharge method – Applications.

Unit – IV Characterization Techniques

Construction, working principle, merits and demerits of X-ray diffractometer - Scanning Electron Microscope (SEM) – Atomic Force Microscope (AFM) - UV-Vis–NIR double beam spectro photometer – Energy dispersive X-ray analysis (EDAX) .

Unit – V Applications

Nanoelectronics – Nanophotonics – Nanomaterials in energy conversion and storage – Nanomaterials as antibacterial agents – Nanomaterials as photocatalysts – Nanomaterial in industrial applications – Bio-medical applications : Targeted drug delivery – Nanomaterial based radiation therapy – Photodynamic therapy (PDT) – Bio imaging.

Books for Study

1. K. Ravichandran, K. Swaminathan, P.K. Praseetha, P. Kavitha, Introduction to Nanotechnology, JAZYM publications.
2. M.Ratner.et al., Nanotechnology; A Gentle intro Practices – hall ISBN 0-13-101400-5, 2003.
3. Nanotechnology; Basic Science and Emerging Technologies, CRC Press

Books for Reference

1. Charles P.Poole Jr and Frank J.Owens. "Introduction to Nanotechnology" Wiley, 2003.
2. A. S. Edelstien and R.C. Cornmarata, Nanomaterials; synthesis, Properties and Applications, 2ed, Iop (U.K), 1996.

Semester	Subject code	Title of the paper	Hours of Teaching/Week	No. of Credits
III	20P3CHEDC	Extra Disciplinary Course - Chemistry in Every Day Life	4	

OBJECTIVES

Students learn about the scientific and chemical principles underlying in everyday life.

- Students learn about the cleaning agents and water chemistry,
- Students understand about the food chemistry,
- Students shall learn about the cosmetic and their effect in health aspects
- Students shall know about the green chemistry and their significance for clean environments
- Students learn about the nano technology and their importance.

Unit-I

Cleaning agents - manufacture and uses of soaps, detergents, baking powder, shampoo, washing powder and bleaching powder **Water** – uses of water Characteristics' of water, soft water and hard water - removal of hardness – ion exchange method. Reverse osmosis method, Water pollution, causes and prevention.

Unit-II

Food – importance – spoilages – causes, preservation – additives – colouring and flavouring agents, beverages. Soft drinks aerated water – manufacturing – mineral water. Fruits, vegetables, dairy product – storage, preservation. Minerals in food and anti oxidants. Preparation of fruit Jam and pickle.

Unit-III

Cosmetics – Face powder – constituents, uses – side – effects. Nail polish, hair dye – composition and side effects. Tooth powder – lotions. Preparation of phenyl, liquid blue and incense sticks.

Unit-IV

Basic concepts of Green chemistry and its significance in day to day life. Polymers – Classification – Types of polymerization – plastics – classification – types of plastics – PVC, Teflon, PET, Bakelite – Rubber – Natural and synthetic – Buna rubber, Butyl Rubber. Vulcanization of rubber, neoprene rubber, Plastic pollution and prevention.

Unit-V

Basic concepts of Nano Technology and its importance in day to day life.
Dyes – importance of food colours – PFA (Prevention of Food Adulteration Act)
Natural dyes – Synthetic Classification importances – Uses of the following Synthetic dyes - Direct dyes, acid dye, Basic dye, mordant dye, Reactive dye, Disperse dye, Fastness – Light and Washing. Application of dyes in food, paper, plastic and lather.

COURSE OUTCOME:

- Students should able to learn about the cleaning agents and water chemistry,
- Students should able to understand about the food chemistry,
- Students should able to learn about the cosmetic
- Students should able to know about the green chemistry
- Students should able to learn about the nano technology

References:

1. Norrish Shreave. R. and Joseph A. Brink Jr Chemical Process Industries, McGraw Hill, Industrial Book Company London 1978.
2. Brain A.C.S. Reinhold, Production and properties of Industrial chemicals 11th Ed, John Wiley & Sons, New York.
3. Burgh, A. Fermentation Industries, Inter science, 4th Ed, 1983, A *Inter science*, New York.
4. Ramani,V. Alex, Food Chemistry(2009),MJP publishers.

Semester	Subject Code	Title of the Paper	Hours of Teaching / Week	No. of Credits
III	20P3BOEDC	Extra Disciplinary Course – Medicinal Botany and Pharmacognosy	4	-

Objectives

- ❖ To enable the students to identify local medicinal plants.
- ❖ To enable the students to prepare herbal medicines for curing human ailments.
- ❖ To impart knowledge to students on Botany and Phyto chemistry of medicinal plants.

Unit I

Medicinal Botany: Definition, Introduction, History, – Classification – Common medicinal plants cultivation, storage, collection and habitats of medicinal plants (*Catharanthus, Coleus, Aloe*) – Importance of medicinal plants.

Unit II

Indian systems of medicine – AYUSH - Siddha, Ayurveda, Homeopathy and Unani – Indigenous medicinal plants – Useful parts – Chemical constituents – medicinal uses – medicinal plant drugs.

Unit III

Herbal medicines for human ailments – Heart, kidney, liver, eye, skin, hair, stomach problems, diabetics, blood pressure, headache, cough, cold, fever, digestive problems, joint pains and wounds.

Unit IV

Pharmacognosy – History, Introduction, commercial drugs, crude drugs – classification of drugs – Chemistry of drug and drug evaluation of natural products.

Unit V

Drug adulteration and detection – Substitution – Detection of Adulterations – Elementary knowledge on alkaloids and flavonoids – Preparation of herbal oil, herbal tooth powder, herbal soup, herbal immune boosters.

Books for Reference

- Kumar, N.C., (1993). An introduction to Medical Botany and Pharmacognosy.
- Shah, S.C. and Quadry (1990). A text book of Pharmacognosy.
- Nadkarni, (1981). Indian MateriaMedica.
- Jain, S.K., (1980). Indian Medicinal Plants.
- Balu, S., Murugan, R. and Pandiyan, P., (2005). Herbal Technology.

Outcome

After completion of this course, students would be able to

- Understand the various Indian system of medicine
- Learn about the vital role of herbal medicines for human ailments
- Outline and classify the crud drugs
- Trained about drugs adulteration and direction

Semester	Subject Code	Title of the Paper	Hours of Teaching / Week	No. of Credits
III	20P3MBEDC	Extra Disciplinary Course – Mushroom Technology	4	-

Objectives

- ❖ To know the various types of edible mushroom and their nutritional value.
- ❖ To understand the methods of cultivation of mushrooms.
- ❖ To know the types of food prepared from mushroom and their importance in human health.
- ❖ Marketing of mushrooms in India and abroad.
- ❖ Mushroom cultivation unit visit- mandatory –Neighbouring District –one day.

Unit I

Introduction – history – scope of edible mushroom cultivation – Types of edible mushrooms available in India – *Calocybeindica*, *Volvariellavolvacea*, *Pleurotuscitrinopileatus*, and *Agaricusbisporus*.

Unit II

Pure culture – preparation of medium (PDA and Oatmeal agar medium) sterilization – preparation of test tube slants to store mother culture – culturing of *Pleurotusmycelium* on petriplates, preparation of mother spawn in saline bottle and polypropylene bag and their multiplication.

Unit III

Cultivation Technology: Infra structure – Mushroom bed preparation – paddy straw, sugarcane thrash, maize straw, banana leaves. Factors affecting the mushroom bed preparation – Low cost technology. Composting technology in Mushroom production.

Unit IV

Storage and nutrition: Short-term storage (Refrigeration – upto 24 hours) Long term Storage (canning, pickles, papads), drying, storage in salt solutions. Nutritive value – proteins – amino acids, mineral elements – Carbohydrates, Crude fibre content – Vitamins.

Unit V

Food Preparation – Types of food prepared from mushroom; Soup, Cutlet, Omlette, Samosa, Pickles, Curry – Research Centres – National level and Regional level – Cost benefit ratio – Marketing in India and abroad, Export value.

Books for Reference:-

- Marimuthu, T., Krishnamoorthy, A.S., Sivaprakasam, K. and Jayaranjan, R., (1991). Oyster Mushrooms, Department of Plant Pathology, Tamil Nadu Agricultural University, Coimbatore.
- Swaminathan, M., (1960). Food and Nutrition. Bappco, The Bangalore Printing and Publishing Co. Ltd., No.88, Mysore Road, Bangalore 560 018.
- Tewari, Pankaj Kapoor, S.C., (1988). Mushroom Cultivation, Mittal Publications, Delhi.
- Nita Bahi (1984-1988). Handbook of Mushrooms, II Ed, Vol. I & II.
- Paul Stamets, J.S and Chilton J.s (2004). Mushroom cultivation. A practical guide to graining mushroom at home Agarikon Press.

Semester	Subject Code	Title of the Paper	Hours of Teaching / Week	No. of Credits
III	20P3ZOEDC	Extra Disciplinary Course – Clinical Lab Technology	4	-

Objectives:

1. To study the various sterilization techniques.
2. To know the disposal of waste.
3. To identify the blood group and urine sugar.
4. To identify the bacteria and fungus.
5. To know the various diagnostic equipment.

Unit I

12 Hrs

Scope for study of Clinical Technology. Sterilization – Methods of Sterilization – Dry heat method – Wet heat method – Chemical method of sterilization – Disposal of hospital wastes and infected material - Disinfection laboratory glassware and equipments.

Unit II

12 Hrs

Composition of blood–ABO blood typing–Rh blood typing–Blood cells counting – Total erythrocyte count, total WBC count and differential count – Sugar level in Blood – Hypoglycemia, Hyperglycemia conditions. Composition of urine – Physical characters of urine–Method of urine analysis for sugars.

Unit III

12 Hrs

Analysis of Semen, Sputum and stool, Identification of blood parasites, Bacterial culture in NA medium, Fungal culture in PDA medium, Histological study of cells – Histological procedure for the preparation of tissue slides.

Unit IV

12 Hrs

Diagnostic equipment and apparatus – ECG, EEG, Colorimeter, pH meter, PCR, laminar airflow inoculation chamber, Binocular microscope and Incubator.

Unit V

12 Hrs

Immuno techniques – ELISA, HLA typing, VDRL Test.

Viral , bacterial and fungal diseases, First aid- definition and types and applications

Reference:

1. Medical Laboratory Technology (1994) (4th edition), By Ramik Sood, Jaypee Brother Medical Publishers (P) Ltd., New Delhi 110 002.
2. Medical Laboratory Technology, K.M. Samuel.
3. Clinical Pharmacology (1987), by Dr. Lawrance and P.N. Bennett (Sixth Edition), ELBS, English Language Book Society, Churchil Livingstone, England.
4. District Laboratory Practice in Tropical countries, part I, By Mouica Cheesbrough, Cambridge Las Priced Edition, Cambridge University Press, Cambridge, U.K.
5. Basic Clinical Paraitology (1993), W.Harold Brown and A.Franklin Neva (5th edition), Prntice Hall Internation Edition.
6. Biological Chemistry – Leringer.

7. Human Physiology by Pearse.
 8. The Biology of Animal Parasites (1984), Cheng, T. Toppan C9 Ltd., Japan.
 9. Medical Laboratory Technology: A procedure manual for routine diagnostic tests Volume – I-II By Kanai, L. Mukherjee, Tata McGraw – Hill Publishers, New Delhi.
 10. Basic Clinical Parasitology 5th Edn, Harrold, W. Harold Brown and A. Franklin Neva-prentice Hall International Editions, U.S.A.
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Web Links:

https://www.sunydutchess.edu/academics/catalog/current/courses/medical_laboratory_tech/index.pdf (Dutchess Community College, New York).

<https://www.sunydutchess.edu/academics/catalog/current/programs/medicalandalliedhealth/mlt.pdf> (Dutchess Community College, New York).

[https://makautwb.ac.in/syllabus/BSc%20\(Medical%20Lab%20Technology\)28.02.2018.pdf](https://makautwb.ac.in/syllabus/BSc%20(Medical%20Lab%20Technology)28.02.2018.pdf)

Course Outcome

- Prepare the way for basic idea of various aseptic technique.
- Understanding the significance of waste disposal.
- Knowledge on Blood grouping and Blood sugar & urine sugar level.
- Gaining knowledge on culture of Bacteria, fungi and expertise on histological slide preparation.
- Operation technique of Diagnostic apparatus.
- Understanding for various immune techniques.

Semester	Subject Code	Title of the Paper	Hours of Teaching / Week	No. of Credits
III	20P3BTEDC	Extra Disciplinary Course – Trends in Biotechnology	4	-

Objectives:

1. To study the concept and scope of Biotechnology.
2. To Understand r-DNA Technology.
3. To aware the programmes of cell culture, preparations of hormones and vaccines, transgenic animals and human genome project.
4. To study the Bioprocess technology and their applications.
5. To study the Environment Biotechnology and aware the biodiversity and their conservation.

Unit I

Hrs12

Biotechnology – Introduction and Scope of Biotechnology – Gene Cloning, Cell –free protein production – Production of Health care Products, Medical and Forensic application (RFLP, RAPD, DNA finger printing). Applications of PCR and LCR in disease diagnosis.

Unit II

Hrs12

Nuclear transplantation, Transgenic Animals Development and uses – mice, goat, fish and sheep. Tendered meat production. Transgenic Plant: Insect resistance, fungus resistance, virus resistance, drought, cold resistance, saline resistance, Transgenic plant with vitamin A, Gene Production of therapeutic antibodies and edible vaccine.

Unit III

Hrs12

Bioprocess technology – Scope – Fermentor –Bioprocess products: Organic acids – Citric acid, Lactic acid, acetic acid. Antibiotics – Wide and Narrow specxtrum antibiotics. Aminoacids – Glutamic acid, Lysine, Isoleucine, Aspartic acid and Proline. Production of SCP. Enzyme Production – Amylase, Pectinase and Cellulase. Dairy products and Biofuel production.

Unit IV

Hrs12

Biofertilizers – N₂ fixing microbes (Azolla, Azatobacter, Azospirillum) for use in Agriculture – A. tumifasciens for crop improvement – Biopesticides. Biopolymer and its Application – Biosensor and its application – Bioleaching- Biomining – Biotechnology in oil recovery – Bioremediation of Xenobiotics – superbug – its application. Biodegradation.

Unit V

Hrs12

Regulations of Biosafety: possible dangers of GEO, Biohazards of rDNA technology. National and International biosafety guidelines, Primary and secondary containments and implementation. Web based information of biosafety on GMO.

Reference:

1. Dubey, R.C. – A Text Book of Biotechnology, S. Chand & Co., Ltd, New Delhi, 1996.
2. Gupta, P.K. – Elements of Biotechnology, Rastogi and Co., Meerut, 1994.
3. Kumar, H.F. A text book on Biotechnology, Affiliated East & West Press Pvt., Ltd, N-Delhi.
4. D.Balasubramanian *et. al.*, - Concepts in Biotechnology.
5. Singh, R.S. – Introductory Biotechnology, Central book deport, Allahabad.
6. Primrose, R. – Molecular Biotechnolgy, ASM Press.
7. Lick, E.R. and Pastenak – J.J. Molecular Biotechnology.
8. Ignachimuthu – Plant biotechnology, Oxford IBH Publishers, New Delhi.
9. Ranga – Fishery Biotechnology.
10. Primrose, R. – Molecular Biotechnology, ASM Press.
11. Purohit – A Text Book of Biotechnology, Agrobions, Jodhpur.

Semester	Subject code	Title of the course	Hours of Teaching/ Week	No. of Credits
III	20P3CSEDC/ 20P3ITEDC	Extra Disciplinary Course- E-Learning Technologies	4	-

Objective

- To learn the various E-learning approaches and components.
- To understand the types of design models of E-Learning.
- To explore the models for E-learning courseware development.
- To learn about E-learning authoring tools.
- To know about evaluation and management of E-learning solutions.

UNIT I INTRODUCTION

Need for E-Learning – Approaches of E-Learning – Components of E-Learning – Synchronous and Asynchronous Modes of Learning – Quality of E-Learning – Blended Learning: Activities, Team and Technology – Work Flow to Produce and Deliver E-Learning Content – Basics of Design Thinking.

UNIT II DESIGNING E-LEARNING COURSE CONTENT

Design Models of E-Learning – Identifying and Organizing E-Learning Course Content: Needs Analysis – Analyzing the Target Audience – Identifying Course Content – Defining Learning Objectives – Defining the Course Sequence – Defining Instructional Methods – Defining Evaluation and Delivery Strategies – Case Study.

UNIT III CREATING INTERACTIVE CONTENT

Preparing Content: Tips for Content Development and Language Style – Creating Storyboards: Structure of an Interactive E-Lesson – Techniques for Presenting Content – Adding Examples – Integrating Multimedia Elements – Adding Examples – Developing Practice and Assessment Tests – Adding Additional Resources– Courseware Development Authoring Tools – Types of Authoring Tools – Selecting an Authoring Tool

UNIT IV LEARNING PLATFORMS

Types of Learning Platforms – Proprietary Vs. Open – Source LMS – LMS Vs LCMS – Internally Handled and Hosted LMS – LMS Solutions – Functional Areas of LMS.

UNIT V COURSE DELIVERY AND EVALUATION

Components of an Instructor-Led or Facilitated Course – Planning and Documenting Activities – Facilitating Learners Activities – E-Learning Methods and Delivery Formats – Using Communication Tools for E-Learning – Course Evaluation.

REFERENCES:

1. Clark, R. C. and Mayer, R. E, "eLearning and the Science of Instruction", Third Edition, John Wiley, 2016.
2. Means, B., Toyama, Y., and Murphy, R, "Evaluation of Evidence – Based Practices in Online Learning: A Meta – Analysis and Review of Online Learning Studies", Centre for Learning Technologies, 2010.
3. Crews, T. B., Sheth, S. N., and Horne, T. M, "Understanding the Learning Personalities of Successful Online Students", Educause Review, 2014.
4. Johnny Schneider, "Understanding Design Thinking, Lean and Agile", O'Riley Media, 2011.
5. Madhuri Dubey, "Effective E – learning Design, Development and Delivery", University Press, 2011.

Course Outcomes:

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

- Distinguish the phases of activities in the models of E-learning.
- Identify appropriate instructional methods and delivery strategies.
- Choose appropriate E-learning authoring tools, Create interactive E-Learning courseware, Evaluate the E-learning courseware, Manage the E-learning courseware.

Semester	Subject Code	Title of the Paper	Hours of Teaching / Week	No. of Credits
III	20P3LSEDC	Extra Disciplinary course Documentation Centers in India	4	-

Objectives:

- To promote and support adoption of standards in library operations.
- To coordinate with other regional, national & international network for exchange of information and documents

Unit I

Components of information systems-Libraries, Documentation centers, Information centers.

Unit II

Data banks, Information analysis centers, Referral centers, Clearing Houses, Reprographic and translation centers-Their function and services.

Unit III

National Information systems: DESIDOC, NASSDOC, SENDOC, NISCAIR and INFLIBNET.

Unit IV

Information Aggregators, Databases Proquest, EBscohost, J-gate, POPLINE, Shodhganga, NDL,.

Unit V

Information products and series – Newsletters, House Bulletins in – house Journals, state of art reports, digest and Technical Digest.

Outcome:

The students shall be able to:

- Know the standards in library operations.
- Understand the regional, national & international network for exchange of information and documents

Reference:

1. Date, C.J. An Introduction to Database System, ed.7, Delhi: Pearson Education (Singapore), 2002
2. Desai, Bipin C. An Introduction to Database System, New Delhi, Galgetia, 2001
3. Karts Henry F, DBS Computer, New Delhi, McGraw Hill, 2000.
4. Raghu Ramakrishnan, DBMSS, New Delhi, McGraw Hill, 2000.
5. Gangadharaiah G, Management of Information Products and Services in University Libraries, Common Wealth, New Delhi, 2012.