ఆంధ్రప్రదేశ్ కేంద్రీయ విశ్వవిద్యాలయం आंध्रप्रदेश केंद्रीय विश्वविद्यालय

CENTRAL UNIVERSITY OF ANDHRA PRADESH

(Established by an act of Parliament in 2019)

SCHOOL OF ARTS, HUMANITIES AND SOCIAL SCIENCES

DEPARTMENT OF ECONOMICS

Postgraduate Programme Structure
as per the UGC Credit Framework (NEP 2020)

Vidya Dadati Vinayam

(Education Gives Humility)

M.Sc. Economics

"Economics is a study of mankind in theordinary business of life"

- Alfred Marshall (1890)

Programme Structure

(With effect from AY 2025 - 26)

SCHOOL OF ARTS, HUMANITIES AND SOCIAL SCIENCES
DEPARTMENT OF ECONOMICS

M.Sc. Economics

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M.Sc. Economics

1. Introduction to the Programme

- The core courses can help the students to write the competitive examinations (like UGC NET, IES) to pursue Economics at the later years.
- Courses such as quantitative techniques, statistics and econometrics contain deeper analysis for economic modeling and research. The Master of Science in Economics (MEC) is one of the advanced postgraduate programmes being offered at Central University of Andhra Pradesh since 2021-22 academic year. The programme aims to produce competent and well-equipped graduates, who are capable of making meaningful contributions to the research, economic policy making, armed with both theoretical knowledge and practical experience. It has a strong foundation on both economics and statistical applications with latest packages through core courses.
- Through this programme the students have the opportunity to put their skills into practice through talks with industry professionals, internship, dissertations, and field surveys. Such a multidisciplinary approach helps students to gain hands-on experience, refining their skills and preparing them for real-world challenges. These practical components not only deepen students' understanding but also foster professional growth, ensuring they are well-equipped to thrive in various professional settings. This programme provides the students with great opportunity in job seeking, higher education and research. While preparing the syllabus of the core courses and the basket of elective courses one has to take into account to provide the following points.
    - Computer applications in economics create ability to plot the graphs, tabulation and data analysis.
    - The elective courses facilitate the student to seek jobs or for the specialization in research.
    - This programme additionally provides freedom to the students to choose elective courses that are inter-disciplinary.
    - The student-centric approach of the curriculum has been designed to equip learners with appropriate knowledge, skills and values of the discipline.

2. Programme Vision

The vision for the programme is to be a globally recognized leader in providing advanced education that integrates economic theory with econometrics and statistical applications with latest packages. It aspires to empower students with the knowledge, skills, and ethical framework necessary to excel in a dynamic and interconnected world. Through innovative research, interdisciplinary collaboration, and a commitment to excellence, it aims to prepare our graduates to address complex economic challenges and make meaningful contributions to society. The vision is to create a vibrant learning community that fosters intellectual curiosity, critical thinking, and lifelong learning, and equips students to become leaders in academia, industry, government, and beyond.

3. Programme Objectives

Upon completion of the M.Sc. Economics seek to:

- Prepare students to improve critical thinking and pragmatic investigation about several economic and also socio-economic issues quantitative and qualitatively.
- Train the students to acquire the ability to associate the gap between theory and practice in the applied manner.
- Equip the student with skills to analyse problems, formulate and hypothesis, evaluate and validate results and

draw reasonable conclusions thereof.

- Prepare students innovatively to grab employment through entrepreneurship, research and other careers.
- Prepare students to gain knowledge, own thinking capacity, delivering opinions regarding contemporary national or international issues and policies.

4. Learning Outcomes

On successful completion of the programme students:

- Acquire the theoretical and practical knowledge in core economic areas, i.e., microeconomics, macroeconomics, growth theories and also Mathematics, statisticsand econometrics.
- Comprehend the basic hypothesis in distinct economic theories and augment capabilities of developing ideas based on them.
- Instruct, train and encourage in higher academics like research studies in economics specifically preparing questionnaire, data collection through various sources like secondary, primary (field) survey, research writings.
- Knowledge a wide range of econometric techniques using statistical software.
- Better furnished in policy formulation and economic administration.
- Motivate in preparing for various competitive examinations, NET, GATE, SET, Indian Economic Service etc., by developing or gaining value addition from currentupdates.

5. Pedagogy of the Programme

The pedagogy for M.Sc. in Economics involves creating an engaging learning environment that integrates theory with practical application. The programme emphasizes interactive lectures, group discussions, problem-solving activities, and hands-on projects. Field visits, household surveys, and dissertation work with faculty guidance enable students to analyze real-world economic issues, apply theoretical concepts, and enhance critical thinking skills. Collaboration and peer learning are encouraged, fostering teamwork and communication. Students gain practical experience with statistical software, enhancing their technological proficiency in applied economics and business. The curriculum also includes interdisciplinary studies, exposing students to intersections with fields like computer science, business, and public policy to provide a comprehensive understanding of economic phenomena and their implications. Projects and research assignments challenge students to address complex societal challenges, developing their analytical and problem-solving abilities. The programme culminates in a capstone project or thesis, allowing students to apply their knowledge and skills to significant research questions or practical problems in economics and data analytics.

6. Programme Structure

- The Master of Economics (MEC) programme is structured over two years, divided into four semesters, comprising a total of 91 credits.
- The curriculum is meticulously designed to incorporate Core Courses, Discipline- Specific Electives, Multidisciplinary Courses, and MOOCs, ensuring a comprehensive and enriching learning journey.
- With a focus on meeting the current demands of the Government, non-government, and private sectors, the programme offers a selection of nine discipline-specific electives, providing students with a broad range of courses to choose from.
- Throughout Semesters I, II, and III, students will specialize by selecting a Discipline Specific Elective and completing all related courses.
- To augment their learning experience, students are expected to complete one MOOCs course in each of the first three semesters.
- Following the completion of the second semester, students will embark on a two- month summer internship, where they will gain practical experience and submit a comprehensive report during the third semester.
- In the final semester (Semester IV), students will undertake a Dissertation Work, allowing them to apply their acquired knowledge and skills in a practical setting and contribute meaningfully to the field of education.

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M.Sc. Economics - Semester and Course wise Credits

Semester	Course Code	Discipline Specific Elective	IDE	CCC	SIP	Dissertation	Lab	Total Credits
1	MEC101 (4) MEC102 (4) MEC103 (4) MEC104 (4)	MEC111 (4)	MEC112 MOOC (3)	-	-	-	MEC104 (1)	**23**
II	MEC201 (4) MEC202 (4) MEC203 (4) MEC204 (4)	MEC211 (4)	MEC212 MOOC (3)	MEC213 (4)	-	-	MEC203 (1)	**27**
III	MEC301 (4) MEC302 (4) MEC303 (4)	MEC311 (4)	MEC312 MOOC (3)	MEC313(4)	MEC314 (2)	-	MEC303 (2)	**25**
IV	MEC401(4)	-		-	-	MEC411 (16)		**20**
Total	**48**	**12**	**09**	**08**	**02**	**16**	**3**	**95**

IDE: Inter-disciplinary Electives

CCC: Common Compulsory Course

SIP: Summer Internship Project

 # Lab: Credits are excluded from total credits to avoid double count.

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M.Sc. Economics: Programme Structure

Sl. No.	Course Code	Title of the Course	Credit Points	Credit Distribution		
				L*	P/S*	T/L*
Semester I						
1	MEC101	Microeconomic Theory -I	4	3	1	
2	MEC102	Macroeconomic Theory -I	4	3	1	
3	MEC103	Mathematical Methods for Economics	4	3	1	
4	MEC104	Statistical Methods for Economics	4	3		1
5	**Elective-I: Any one of the following**		4	3	1	
	MEC111	Public Economics				
		Money and Banking				
		Industrial Economics				
6	MEC112	*IDE-I: MOOCs	3	3		
Total			**23**	**18**	**4**	**1**
Semester II						
1	MEC201	Microeconomics Theory -II	4	3	1	
2	MEC202	Macroeconomics Theory -II	4	3	1	
3	MEC203	Indian Economy	4	3	1	
4	MEC204	Econometrics - Theory and Applications	4	3		1
5	**Elective-II: Any one of the following**		4	3	1	
	MEC211	Financial Economics				
		Health Economics				
		Public Policy Analysis				
6	MEC212	*IDE-II: MOOCs	3	3		
7	MEC213	CCC-1: Introduction to Artificial Intelligence and Machine Learning	2	2		
		Lab: Introduction to Artificial Intelligence and Machine Learning	2			2
Total			**27**	**20**	**4**	**3**
Semester III						
1	MEC301	Economics of Growth and Development	4	3	1	
2	MEC302	International Economics	4	3	1	
3	MEC303	Research Methodology and Data Analysis using SPSS	2	2		
		Lab: SPSS and LaTeX	2			2
4	**Elective-III: Any one of the following**		4	3	1	
	MEC311	Time Series Econometrics				
		Insurance Economics				
		Entrepreneurship Development				
5	MEC312	*IDE-III: MOOCs	3	3		
6	MEC313	CCC-II: Building Mathematical Ability and Financial Literacy	4	3	1	
7	MEC314	Summer Internship Programme	2			2
Total			**25**	**17**	**4**	**4**
Semester IV						
1	MEC401	Agriculture Economics	4	3	1	
2	MEC411	Dissertation	16			16
Total			**20**	**3**	**1**	**16**
Grand Total			**95**	**58**	**13**	**24**

Note: *As per the choice of the students and the instructor
L: Lectures; **P/S:** Presentation/Seminars; **T/L:** Tutorials/Lab

Note: 1. MOOCs are chosen by the student based on the availability of the courses offered on SWAYAM & other related platforms suggested or approved by the Department.

2. The Programme template and the title of the courses are tentative, any changes as required may be made.

M.Sc. Economics: Semester wise Credit Distribution

Semester	Total Credits	Cumulative credit at the end of the semester
1	23	23
II	27	50
III	25	75
IV	20	95

- **Required Credit:** The minimum required credit to be earned by the student to award the degree is 95. However, they can earn credits in excess of 95 by taking other courses. The upper limit will be 98 credits.
- **Assessment Pattern:**
  - **Theory Course:** 40% of internal [formative evaluation – two best out of three tests (for a maximum of 15 marks each = 30 marks) - and seminar/assignments/ attendance (10 marks)] and 60% (summative evaluation- semester end examination).
  - **Lab Components:** 60% of internal exam / lab and 40% (summative evaluation – semester end examination).
- **End Semester Examination:** Maximum Marks: 60 Time :3 Hours
- **Dissertation/Project Report**: Evaluation: 60 marks and Viva-Voce: 40 marks

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M.Sc. Economics

Important Information to Students

i. Eligibility: A Bachelor's degree in Economics with at least 50% marks in aggregate and at least 50% marks in Economics; Or Bachelor's degree with at least 60% marks in any of the allied subjects viz. Commerce, Statistics, Mathematics, Engineering or any of the Social Sciences subjects.

ii. The minimum duration for completion of the programme is four semesters (two academic years) and the maximum duration is eight semesters (four academic years) or as per amendments made by the regulatory bodies from time to time.

iii. A student should attend at least 75% of the classes, seminars, practicals in each course of study.

iv. All theory courses in the programme carry a Continuous Internal Assessment (CIA) component to a maximum of 40 marks and Semester End Examination (SEE) for a maximum of 60 marks. The minimum pass marks for a course is 40%.

v. All lab components carry a Continuous Internal Assessment (CIA) component to a maximum of 60 marks and Semester End Practical Examination (SEE) for maximum of 40 marks. The minimum pass marks for a course in 40%.

vi. A student should pass separately in both CIA and the SEE, i.e., a student should secure 16 (40%) out of 40 marks for theory and 24 (40%) out of 60 marks in the lab components in CIA. A student should secure 24 (40%) out of 60 marks for theory and 16 (40%) out of 40 marks for lab components in the SEE.

vii. There are 3 CIA tests for each course per semester from which the best 2 performances are considered for the purpose of calculating the marks in CIA. A record of the continuous assessment is maintained by the academic unit. A record of the continuous assessment is maintained by the academic unit.

viii. Each CIA contains 15 marks, out of the best 2 tests scores are considered for 30 marks. Out of the remaining 10 marks, 5 marks are awarded for assignments, class presentations and class participation and the remaining 5 marks are awarded for punctuality, and attendance of the student.

Marks for the Attendance will be considered as follows:

S. No	Attendance (%)	Marks
1	95% or more	5
2	90-94%	4
3	85-89%	3
4	80-84%	2
5	75-79%	1

ix. A student failing to secure the minimum pass marks in the CIA is not allowed to take the semester end examination of that course. S/he has to redo the course by attending special classes for that course and get the pass percentage in the internal tests to become eligible to take the end semester examination.

x. Semester-end examination shall consist of objective type questions, descriptive type questions, short answer questions and case studies or any other recommended by the Board of Studies (BoS).

xi. Students failing a course due to lack of attendance should redo the course.

xii. Re-evaluation is applicable only for SEE papers and shall not be entertained for other components such as lab/practical /thesis/ dissertation/ internship etc.

xiii. An on-campus elective course is offered only if 10 or 50% of the students registered, whichever is higher.

SEMESTER WISE DETAILED SYLLABUS

SEMESTER-I

Course Code : **MEC101** Course Type : **Core** No. of Credits : **4.00** No. of Hours : **60**	Course Title **Microeconomic Theory-I**

Course Objectives:

The aim of this course is to:

- Familiarize the students with the economic behaviour of individuals, firms and markets.
- Analyse the various aspects of consumer behaviour, theory of production, price and output determination and theory of general equilibrium.

Course Learning Outcomes:

By the end of the course, students can be able to;

- Understand economic behaviour of individuals, firms and markets.
- Apply mathematical tools and techniques to study behaviour of economic agents.

Course Outline:

Unit-I: [15 Hours]

Theory of Consumer Behaviour: Consumption Decision - Optimisation under alternative preference structures - Utility, indifference curves and revealed preference; Comparative statics of the consumer's decision; Elasticity; Consumer surplus; Utility theory under Uncertainty.

Unit-II: [15 Hours]

Production and Cost Analysis: Production functions; Rate of technical substitution, technical progress, cost functions; economies of scale and scope, profit maximization, cost minimization, Traditional and modern theories of Costs.

Unit-III: [20 Hours]

Market Equilibrium: Perfect Competition; price-controls and shortages; Sources of monopoly power, monopoly market equilibrium, price discrimination, Monopolistic Competition; Oligopoly – non-collusive and collusive oligopoly models.

Unit-IV: [10 Hours]

Pricing Principle: Pricing principle - Break-even Analysis - Average or full cost pricing - Mark up pricing - Limit pricing theory - Bains version - Silos - Labini model of limit pricing.

Suggested Readings:

Gravelle, H and R. Rees, *Microeconomics*. Pearson Education, 3rd Edition, 2004

Henderson, M. and R.E. Quandt, *Microeconomic Theory: Mathematical Approach*. McGraw Hill, 3rd Edition, 1980

Mas-collel, Whinston and Green, *Microeconomic Theory*. OUP, 1995.

Varian, H. R., *Microeconomic Analysis*.Indian Edition, W. W. Norton and Co., 2009.

References:

Anindya Sen, *Microeconomics Theory and Applications*, OUP India, 2nd Edition.

David M. Kreps, *Microeconomic Foundations I: Choice and Competitive Markets*, Princeton University Press, 2013

Hal R. Varian, *Microeconomic Analysis*, W. W. Norton & Company; 3rd Edition, June 1992.

Koutsoyiannes. A, *Modern Microeconomics*. Macmillan Press Limited, New York, 2000.

Salvatore, Dominick, *Micro Economics Theory & Applications*, OUP, New York, 2003.

Stigler. G, *Theory of Price*, Prentice Hall of India. 4th Edition, New Delhi, 1996.

Varian, H. R., *Intermediate Microeconomics: A Modern Approach*. 3rd Edition, 2010.

Nicholson, W, *Microeconomic Theory: Basic Principles and Extensions*. 8th Edt, South Western Thomson Learning, 2002.

Course Code : **MEC102** Course Type : **Core** No. of Credits : **4.00** No. of Hours : **60**	Course Title **Macroeconomic Theory -I**

Course Objectives:

The main aim of this course is to:

- Build the theoretical understanding of Macroeconomics theories.
- Develop analytical skills in understanding Indian Macroeconomic policy.

Course Learning Outcomes:

By the end of the course, students are expected to:

- Understand the implication of the trend of change of macroeconomic variables like income, employment, and prices on an economy.

Course Outline:

Unit-I: [15 Hours]

National Income Accounting: Accounting structure, key concepts in accounting, circular flow of income, computational problems - Expenditure approach, income approach and value added approach for measurement, input-output tables.

Unit-II: [15 Hours]

Theories of Consumption: The Psychological Law of Consumption - Kuznets's Consumption Puzzle - Fisher's Inter-temporal Choice Model - Permanent Income Hypothesis - Life Cycle Hypothesis.

Unit-III: [15 Hours]

Theories of Investment, Demand and Supply of Money: The Neoclassical Theory of Investment - Capital Theory and Theory of the Firm - Finance and the Cost of Capital - The Accelerator Theory of Investment - The Stock Market and Tobin's Q Theory; Baumol Inventory Theory of Money, Quantity Theory of Money, High Powered Money, Money Multiplier.

Unit-IV: [15 Hours]

Neoclassical and Keynesian Macroeconomic Models: Fiscal and Monetary Policy in IS-LM Model, Relative Efficacy, Aggregate Supply and Aggregate Demand, Open Economy Models.

Suggested Readings:

D'souza Errol, *Macroeconomics*. Person Publication, New Delhi, 2008.

David Romer, *Advanced Macroeconomics*. 4th Edition, McGraw-Hill Irwin, 2012.

References:

Blanchard, O., and S. Fischer, *Lectures on Macroeconomics*. Cambridge, MA: MIT Press, 1989.

Brian Snowdon and Howard R. Vane, *Modern Macroeconomics: It's Origins*, *Development and Current State.* Edward Elgar, UK, 2005.

Dornbusch et al, *Macroeconomics.* 10th Edition. Tata McGraw Hill, New Delhi, 2008.

Mankiw, N. Gregory, *Principals of Macroeconomics*. Seventh Edition, Cengage Learning, 2014.

Obstfeld, M., and K. Rogoff, *Foundations of International, Macroeconomics*. Cambridge, MA: MIT Press, 1996.

Samuelson, P. A and Nordhaus W. D, *Macroeconomics*, McGraw Hill, 2012.

Scarth, W. *Macroeconomics: An Introduction to Advanced Methods, Titles on Demand*, 2010.

Course Code : **MEC103** Course Type **Core** No. of Credits : **4.00** No. of Hours : **60**	Course Title **Mathematical Methods for Economics**

Course Objectives:

The course aims at teaching the learners to:

- Understand the calculus technique, optimization tools, and their application in economics.
- To examine economic variables by the use of mathematical equations.

Course Learning Outcomes:

By the end of the course, students are expected to;

- Familiar with differential calculus, Linear algebra, optimization, and dynamics.
- Apply quantitative techniques for economics analyze and research.

Course Outline:

Unit-I: [15 Hours]

Linear Algebra: Vectors, matrices, inverse, simultaneous linear equations, Cramer's rule for solving system of linear equations, input-output model, Hawkin - Simon condition, open and closed models quadratic equation, characteristic (eigen) roots and vectors.

Unit-II: [15 Hours]

Differential Calculus: Functions and Real Analysis; Derivatives, functions of several variables, implicit function theorem, higher order derivatives and Young's theorem, Taylor's approximation, convex sets, convex and concave functions, Linear homogenous functions, Euler's theorem; Economic Applications.

Unit-III: [20 Hours]

Linear and Non-linear Optimisation techniques: Quadratic functions, unconstrained optimization, constrained optimization with equality constraints; Duality theory, constrained optimization with inequality and non-negativity constraints, Linear Programming–solutions using graphical and Simplex methods, applications from economics and finance.

Unit-IV: [10 Hours]

Dynamics Functions: Definite and indefinite integrals – Measurement and Applications; Differential equations-Phase diagrams, Cobweb model, Growth Models.

Suggested Redings:

Efe A. Ok, *Real Analysis with Economic Applications*. Princeton University Press, 2007.
Simon, C. and L. Blume, *Mathematics for Economists*. Norton, London, 1994.

References:

Chiang, A. C., *Fundamental Methods of Mathematical Economics*. McGraw-Hill, 1984.
M.D. Intriligator, *Mathematical Optimization and Economic Theory*. Prentice- Hall, 1971.
Sydsaeter, K.,et al., .*Further mathematics for economic analysis*. Pearson Education, 2008
Wainwright, K, *Fundamental methods of mathematical economics*/Alpha C. Chiang, 2005.
Bartle, R. G., &Sherbert, D. R, *Introduction to real analysis*.(Vol. 2). New York: Wiley, 2000.
Knut Sydsaeter and Peter J. Hammond, *Mathematics for Economic Analysis*. Pearson Education, Asia, 1995.
Roberts. B. and D. L. Schultze, *Modern Mathematics and Economic Analysis*. W.W. Norton and Company, 1973.

Course Code : **MEC104** Course Type : **Core** No. of Credits : **4.00** No. of Hours : **60**	Course Title **Statistical Methods for Economics**

Course Objectives:

The aim of this course is to:

- Grasp fundamental concepts of descriptive statistics, data presentation, and probability theory.
- Apply statistical methods for data collection, processing, analysis, and visualization.
- Analyze relationships between variables using correlation and regression, and distinguish various probability distributions.
- Evaluate hypotheses using appropriate statistical tests and interpret results for economic conclusions.

Course Learning Outcomes:

By the end of the course, the students will understand/able to:

- Understand and apply basic statistical concepts and terminology used in economics.
- Critically evaluate the appropriateness of different statistical methods for specific economic questions.
- Conduct hypothesis testing and construct confidence intervals for population parameters
- Understand the concepts of probability and random variables, including distributions.

Course Outline:

Unit-I: [15 Hours]

Data Presentation and Descriptive Statistics: Introduction to statistics; Understanding the Data, Tabular and Graphical presentation of data; Central tendency- dispersion, skewness, kurtosis and moments; Census, population and sample; Parameters and estimators; Sampling methods and distributions, Sampling errors; Point and interval estimates of parameters.

Unit-II: [15 Hours]

Probability Distribution: Introduction to probability; Approaches to assigning probabilities; Rules for computing probabilities; Contingency tables and tree diagrams; Principles of counting; Bayes' theorem; Random Variable; Discrete and Continuous probability; Probability Distribution - Pdf, Pmf and Cdf; Mathematical Expectation

Unit-III: [20 Hours]

(A) Correlation and Regression: Introduction to correlation - Correlation coefficient, Introduction to regression - Regression versus Correlation, Simple linear regression, Method of ordinary least square, Multiple regression; **(B) Introduction to Time Series Analysis (C) Introduction to Index Numbers.**

Unit-IV: [10 Hours]

Tests of Hypothesis: Introduction to Hypothesis - Simple versus composite hypothesis, Level of significance and critical region; Type-I and type-II error; z, t, F and $\chi 2$ statistic; Goodness-of-fit test- Analysis of variance; The analysis of contingency tables (Chi-square test for testing independence of two classification criteria).

Suggested Readings:

Anderson, D. R. et. al, "*Statistics for Business and Economics"*, Cengage India Pvt. Ltd., 11th Edition, 2011.
Bluman, Allan G, "*Elementary statistics: a step by step approach*", Boston: McGraw-Hill, 11th Edition, 2022
Gupta, S. C., *Fundamentals of Statistics*, Sultan Chand and Sons, New Delhi, 2020.

References:

Ken Black, *Business statistics*. John Wiley, student edition, 2004.
Ross, S. M, *Introduction to probability models*. Academic press, 2014.
Allen Webster, *Applied Statistics for Business and Economics*. McGraw-Hill International, New Zealand, 2011.
Clark, Megan J. and John A. Randal, *A First Course in Applied Statistics*. Pearson Education, 1998.
Hogg, R. and A. Craig, J., *Introduction to Mathematical Statistics*, McGraw-Hill, 1965.
Levin R.I, *Statistics for Management*. Prentice hall Inc., Paperback, 2008.
Miller, I. and M. Miller, *Mathematical Statistics*. 6th Edition, Prentice Hall Inc., 1999.
Mood, Graybill and Boes, *Introduction to the Theory of Statistics*, McGraw-Hill, 1974.
Nagar, A. L. and R. K Das, *Basic Statistics*, Oxford University Press, 1983.

Course Code : **MEC111** Course Type : **Elective-I** No. of Credits : **4.00** No. of Hours : **60**	Course Title **Public Economics**

Course Objectives:
The main objective of this course is to:

- Gain a comprehensive understanding of government interventions in improving efficiency and provision of public goods and improving efficiency.
- Develop the ability to critically evaluate public policies related to taxation, expenditure, and redistribution.
- Equip students with the analytical tools and knowledge needed to make informed decisions and recommendations about public finance and policy.

Course Learning Outcomes:
Upon successful completion of the course students will be able to:

- Understand critically the role of Government in market mechanism
- Critically analyze and explain the rationale behind various government interventions in the economy, including the provision of public goods
- Assess the economic impact of different types of fiscal policies, including taxation and expenditure programs.
- Understand the status social welfare and security in the economy
- Apply theoretical frameworks and empirical evidence to formulate well-founded policy recommendations for addressing contemporary public economic issues

Course Outline:

Unit-I: [15 Hours]

Public Economics: Role of government, mixed economy, Market failure, externalities, Fundamental principle of public finance; Indian tax system; Revenue of the Union, State and local bodies; Direct and Indirect taxes; Tax and non-tax revenue, Principle of taxation.

Unit-II: [15 Hours]

Public Expenditure: Trends in Public expenditure, Causes and effects of Public expenditure - Theories of public expenditure, Social Security; income distribution and welfare programs; welfare policies in the India.

Unit-III: [15 Hours]

Public Debt: Sources and importance of public borrowing, effects of public debt, tax vs. debt, burden of public debt, Methods of debt redemption, trends and pattern of public debt in India, issues in public debt management.

Unit-IV: [15 Hours]

Budgetary Policy and Fiscal Federalism: Indian Budget policy and types of budgets – Zero based budget, budget as an instrument of economic policy, Objectives of fiscal policy and monetary policy; Fiscal federalism in India; Resource transfer from Union to States, Centre-State financial relation.

Suggested Readings:
Gruber, J, *Public Finance and Public Policy*, Worth Publishers, 5th Edition, 2016.
Musgrave, R.A. and P. B. Musgrage, *Public Finance in Theory and Practice*. McGraw Hill, Tokyo, 2017.
Rosen, H. and Gayer, T, *Public Finance*, McGraw-Hill, 10th Edition, 2014.

References:
Atkinson, A and Stiglitz, J, *Lectures in Public Economics*. McGrawHill, New Delhi, 1980
Auerbach, A., Chetty, R., Feldstein M. and Saez, E, *Handbook of Public Economics*. Vol. 5, 2013.
Cullis, J. and P. Jones, *Public Finance and Public Choice*, OUP, 2nd Eedition, 1998.
D K Srivastava, *Issues in Indian Public Finance*, New Century Publications, Delhi, 2005.
Goode, R, *Government Finance in Developing Countries*. TMH, New Delhi, 1986
Government of India: Ministry of Finance, Budget Documents, various years.
Raja J Chelliah, Et al., *Development and Public Finance: Essays in Honour of Raja J. Chelliah*, SAGE, New Delhi, 2012.

Course Code : **MEC111** Course Type : **Elective-I** No. of Credits : **4.00** No. of Hours : **60**	Course Title **Money and Banking**

Course Objectives:

The objectives of this course are to

- Provide an understanding on operation of monetary forces, evolution of money, and development banking and banking sector reforms.

Course Learning Outcomes:

- The learners will get an information and understanding about Indian banking system.
- The learners will learn in detail about the operation of monetary forces through multitude of channels - market, non-market, institutional and money market.

Course Outline:

Unit-I: [15 Hours]

Introduction: Concept of money and its functions – Role of money: Monetary policy, output stabilization and inflation control; Role of banks for the economy: Financial intermediation, Commercial banks, RRB and NBFCs.

Unit-II: [15 Hours]

Demand and Supply of Money: Quantity theory of money, Supply of Money: Central bank, money-multiplier and money supply; Empirical analysis of money demand and money supply with special reference to India

Unit-III: [15 Hours]

Reserve Bank of India and its Monetary Policy: Overall monetary policy framework –instruments, targets and objectives – transmission mechanism: Money versus credit view –channels of monetary transmission; Adoption of Inflation Targeting by RBI.

Unit-IV: [15 Hours]

Banking Supervision and Regulation in India: Supervisory role of RBI – CAMELS - Management of credit risk, market risk and operational risk; Incidence of high NPAs of banks in India in recent years.

Suggested Readings:

Mishkin, Frederic, *The Economics of Money, Banking, and Financial Markets*, Pearson Addition Wesley, New York, 7th Eedition, 2008.

Pierce D.G. and P.J. Tysome, *Monetary Economics: Theories*, Evidence and Policy, 2nd Edition, Butterworths, London, 1985.

References:

Enoch, Charles and John H. Green (ed.) *Banking Soundness and Monetary Policy: Issues and Experiences in the Global Economy*, International Monetary Fund, 1997.

Reserve Bank of India: *Report on Currency and Finance*, various issues.

Samantaraya, Amaresh, *Conduct of Monetary Policy in India: Changing Dimensions in the Post-reform Period*, TR Publications, Chennai, 2015.

Course Code : **MEC111** Course Type : **Elective-I** No. of Credits : **4.00** No. of Hours : **60**	Course Title **Industrial Economics**

Course Objectives:

- To provide an introduction to theory and empirical work in Industrial Economics.
- To analyze various aspects of strategic interaction between firms and the determinants of industrial structure.
- Discusses the role of policy in the context of competition and industrial policies and regulation.

Course Learning Outcomes:

By the end of this course students can be able to:

- Analyze and interpret deals the concepts of industry, market product, industrial locations and industrial marketing and various aspects of strategic interaction between firms and the determinants of industrial structure.

Course Outline:

Unit-I: [15 Hours]

Organizational Form Structure and Productivity: Organizational forms- Types and choice of form of organization; Business motives –Market structure: Seller's Concentration; Product Differentiation; Profitability; Nature and Innovation – Industrial Productivity-Measurement and factors of productivity.

Unit-II: [15 Hours]

Theories of Industrial Location and Pattern: General determinants of industrial location; Approaches to industrial location analysis: -Alfred Weber's theory; Sergeant Florence's theory of industrial location, - Need for balanced regional development of industries; Government policy and approach for the development of backward regions in India.

Unit-III: [15 Hours]

Indian Industrial Growth and Labour: Industrial policy in India - Role of Public and private sectors; recent trends in Indian industrial growth; policies and program for the development of Micro, Small Medium enterprises (MSME) in India. Industrial labour- Problems, policies and reforms in India; Industrial legislation and social security measures in India.

Unit-IV: [15 Hours]

Industrial Finance: Importance of finance to industrial development, Owned, and external funds for industrial development; Role, and types of institutional finance- Role of IFCI, IDBI, SIDBI, MSFC,ICICI, SFCs, SIDC, commercial banks, etc., in industrial development, trend and problems of industrial finance in India.

Suggested Readings:

AhluwaliaI. J., *Industrial Growth in India*, Oxford University Press, New Delhi, 1985.
Barthwal, R.R., *Industrial Economics*, Wiley Eastern Ltd., New Delhi, 1985.
Cherunilam, F., *Industrial Economics - Indian Perspective*, Himalaya Publishing House, Mumbai, 3rd Edition, 1994.

References:

Cabral, L.M.B., Introduction to Industrial Organization, MIT Press, 2nd Edition, 2017.
Belleflamme, P., Peitz, M. *Industrial Organization. Markets and Strategies,* CUP, 2nd Edition, 2015.
Hay,DA and Morris DJ, *Industrial Economics: Theory and Evidence*, OUP, New Delhi, 1979.
Divine, P.J. et.al., *An Introduction to Industrial Economics*, George Allenand Unwin Ltd., London, 1976.
Barthwal, R.R, *Industrial Economics*, Wiley Eastern limited, New Delhi, 1985.
Seth R, *Industrial Economics*, Ane Books Pvt Ltd, 2010.
Reserve Bank of India, *Special Issues on Industry and Government of India, Economic Survey* (Annual).
Sai Singh, A. and A.N. Sadhu., *Industrial Economics*, Himalaya Publishing House, Bombay 1988.

SEMESTER-II

Course Code **: MEC201** Course Type **: Core** No. of Credits **: 4.00** No. of Hours : **60**	Course Title **Microeconomic Theory-II**

Course Objectives:

This course is a continuum to Microeconomics-I. The aim of this course is to:

- Familiarize students with the fundamental concepts and topics in microeconomic theory.
- Understand the inter-connectedness between micro and macroeconomics.
- Discuss the theoretical concepts for appreciating the developments indifferent branches in economics.

Course Learning Outcomes:

By the end of the course, students can be able to;

- Understand economic behaviour of individuals, firms and markets.
- Apply mathematical tools and techniques to study behaviour of economic agents.

Unit-I: [15 Hours]

Managerial Market Models: Baumol's sales-revenue maximization model; Williamson's model of managerial discretion; Marris model of managerial enterprise; Behavioral model of Cyert and March.

Unit-II: [15 Hours]

General Equilibrium Theory: Partial Equilibrium versus General Equilibrium analysis, Pure Exchange Model-absolute versus relative prices, perfectly competitive price and Edgeworth box - Contract curve, Pareto improvement and efficiency, Walrasian equilibrium, money in general equilibrium.

Unit-III: [15 Hours]

Welfare Economics: Arrow-Debreu economy, welfare theorems, existence of Walrasian equilibrium, fixed-point theorem, optimal taxations, Jensen's Inequality, Social welfare function-Criteria of Social Welfare, Maximisation of Social Welfare, Welfare Maximisation and Perfect Competition, Critique and Extensions.

Unit-IV: [15 Hours]

Public Goods and Market Failure: Reasons for market failure - market imperfections, public goods; theory of public goods, externality, government intervention; Moral hazard problem, adverse selection, principal agent problem, implications of asymmetric information, market signaling, hidden information modeling.

Suggested Readings:

Hal R. Varian *Microeconomic Analysis* W. W. Norton Company, 1992.
Mas-colell, Whinston and Green, *Microeconomic Theory*, OUP, 1995.
Gravelle, H and R. Rees, Microeconomics. Pearson Education, 3rdEdition, 2004.

References:

Henderson, M. and R.E. Quandt, *Microeconomic Theory: Mathematical Approach*. McGraw Hill, 3rd Edition, 1980.
Koutsoyiannes.A, *Modern Microeconomics*. Macmillan Press Limited, New York, 1979.
Varian, H. R., Intermediate Microeconomics: A Modern Approach, W W Norton & Co Inc, 8th Edition 2009.
Salvatore, Dominick, *Micro Economics Theory & Applications*, Oxford University Press, Inc. New York, 2003.
Hal R. Varian, *Intermediate Microeconomics with Calculus,* W W Norton & Co Inc, 2014.
David M. Kreps, *Microeconomic Foundations I: Choice and Competitive Markets*, PUP, 2013.
Walter Nicholson and Christopher Snyder, *Microeconomic Theory Basic Principles and Extensions*, 12th Edition.

Course Code : **MEC202** Course Type : **Core** No. of Credits : **4.00** No. of Hours : **60**	Course Title **Macroeconomic Theory-II**

Course Objectives:

This course is a continuum to Macroeconomics-I. The aim of this course is to:

- Provide a rigorous analysis of macroeconomic theory with emphasis on the role of monetary policy, fiscal policy and open economy influences on economic outcomes.
- Discuss the theories and conceptions of Macroeconomic and Macroeconomic Crises, and Policy Issues.

Course Learning Outcomes:

By the end of the course, students are expected;

- To distinguish between the ideas of the different schools of thought, as they are apparent in policy discussions.
- To equip with methodological and analytical skills and will be able to fruitfully apply these skills to macroeconomic policy formulation.

Course Outline:

Unit-I: [15 Hours]

The Labour Market: Measuring the Unemployment Rate - Unemployment, GDP and the Okun's Law; Profit Maximization and Labour Demand - Utility and Labour Supply - Aggregate Supply- Neoclassical Labour Market Equilibrium - Unemployment - Principles of Effective Demand.

Unit-II: [15 Hours]

Inflation and Unemployment: The Phillip's Relationship - Theoretical Underpinnings of Phillip's Curve - Natural Rate Hypothesis - Theory of Adaptive Expectation - Expectation Augmented Phillip's Curve - The Rational Expectation and Luca's Supply function-Rational Expectation and Implications of Monetary Policy.

Unit-III: [15 Hours]

Theories of Business Cycles: Multiplier - Accelerator Interaction Model - Monetarists Interpretation of Business Cycles - Real Business Cycle Theory - Political Business Cycle Model.

Unit-IV: [15 Hours]

Macroeconomic Crises and Policy Issues: Targets, Indicators and Instruments - Inflation Targeting - Political Economy of Stabilisation and Adjustment, monetary policy rules, Analysing economic crises: policy responses to external crises Causes, Global Financial crisis; conventional and unconventional monetary and fiscal policy.

Suggested Readings:

Blanchard, O., and S. Fischer, *Lectures on Macroeconomics*. Cambridge, MA: MIT Press, 1989.
David Romer, *Advanced Macroeconomics*. McGraw- Hill Irwin, 4th Edition, 2012.
Olivier Blanchard et. el*, Progress and Confusion: The State of Macroeconomic Policy*. (edt), MIT Press, 2016.

References:

Barro, R.J., *Macroeconomics*. Fifth Edition, MIT Press, 1997.
Barro, Robert J. and Sala-i-Martin, Xavier. *Economic Growth,* Prentice Hall of India, 2nd Eedition, 2007.
Joseph E, et al. *America, Free Markets, and the Sinking of the World Economy*. W. W. Norton & Company, 2010.
Robert Z. et al. *Manias, Panics, and Crashes: A History of Financial Crises*, Seventh Edition 7th Edition, 2015.
Sargent, T., *Macroeconomic Theory*. Academic Press, 1987.
Stephen D. Williamson, *Macroeconomics*, Pearson; International Edition, 5th Revised Edition, 2013.

Course Code : **MEC203** Course Type : **Core** No. of Credits : **4.00** No. of Hours : **60**	Course Title **Indian Economy**

Course Objectives:

- Main objective of this course is to provide a detailed analysis of the modern history of various sectors of the Indian economy.

Course Learning Outcomes:

After completion of the course student can be able to:

- Understand the structure of Indian Economy with sectoral comparison.
- Understand the various development indices associated with the development of the economy.
- Understand the Indian economy and help them to prepare for competitive exams.
- Evaluate the effectiveness of various government programmes and propose alternative policy Directions.
- Understand social Infrastructure and social security measures in India
- Understand India's international trade and with international organizations

Course Outline:

Unit-I: [15 Hours]

Structure of Indian Economy: Features of Indian Economy-Demographic, Development indices, Inequality, Poverty, Unemployment, Inflation, Healthcare system, Education; Trends in National Income Growth and Structure. **(B) Sectoral comparison of Indian Economy:** Agriculture- Growth and issues, Industry- Performance, problems and prospects, Service Sector- Growth and performance.

Unit-II: [15 Hours]

Planning and Economic Development: Economic Planning in India; Five Year Plans; Planning commission v/s NITI Ayog; Industrial Policies in India - New Economic Policy; Make in India – Start-ups - MSMEs – Industry 4.0.

Unit-III: [15 Hours]

Social Infrastructure and Social Security: Social security measures in organized and unorganized sector; Pension; Health and medical insurance; disability benefits; Maternity benefits; Poverty alleviation schemes; Distribution; Housing; Food Security Act.

Unit-IV: [15 Hours]

India and Foreign Trade: India's foreign trade value composition and direction; Balance of payment since 1991; Foreign capital flow; WTO and India; Impact of Global financial crisis.

Suggested Readings:

V.K. PuriS.K. Misra, Indian Economy, 39th Edition, Himalaya Publishing House, 2021.
Agarwal, A.N. Indian Economy. Vikash Publishing Co. Delhi, (Latest Edition).
Datt, R. and K.P.M. Sundaram Indian Economy. S. Chand and Co. New Delhi, (Latest Edition).

References:

J Bhagwati and TN Srinivasan, *India's Economic Reforms* 1993.
Arvind Panagariya. *India's Trade Reform*. India Policy Forum, 2004.
François Bourguignon, *The Globalization of Inequality*. Princeton University Press, 2015.
Gupta, S.B. (Latest Edition): Monetary Planning in India, Oxford University Press, Delhi, (Latest Edition).
Jean Dreze and Amartya Sen, An Uncertainty Glory: India and its Contradictions. PUP, 2013.
Uma Kapila, Indian Economy Performance and Policies, 22nd Edition, Academy Foundation, 2021-22.
Indira Dutta and VInod Sen, Contemporary issues of India (Latest Edition)
Uma Kapila, Indian Economy since Independence A comprehensive and critical analysis of India's economy, 1947-2021, 32nd Edition 2021-22
S.P. Singh, Agricultural Economics, 2021
Economic Survey (Latest)

Course Code : **MEC204** Course Type : **Core** No. of Credits : **4.00** No. of Hours : **60**	Course Title **Econometrics - Theory and Applications**

Course Objective:

The aim of this course is to:

- Introduce the basic econometrics tools.
- Understand the methods of econometric analysis and their application in empirical research.

Course Learning Outcomes:

By the end of the course, students will be able to;

- Learn classical linear regression model, statistical inference in regression model, problems in regression and uses of dummy variables and estimation with independent and limited dependent dummy variables.
- Use econometric models for economic research.

Course Outline:

Unit-I: [15 Hours]

The Linear Regression Models: Bi-variate and multi-variate linear regression models, CLRM assumptions, Ordinary Least Squares estimation, Properties of OLS and the Gauss- Markov theorem; Hypothesis testing, goodness of fit; matrix approach to linear regression models.

Unit-II: [15 Hours]

Functional Forms of Regression Models: Choice of functional forms-Log-linear, Double log and lin-Log models, Reciprocal and polynomial models, Choice of functional form, Interpreting coefficients in different functional forms and applications, Specification error and tests for specification error.

Unit-III: [20 Hours]

Relaxation of CLRM Assumptions and Problems in Regression: Violation of CLRM assumptions and its consequences, detection and remedial measures of multicollinearity, heteroskedasticity and autocorrelation.

Unit-IV: [10 Hours]

Maximum Likelihood Estimation: Introduction to binary and limited dependent variable, Limitation of the linear probability model (LPM), Method of maximum likelihood estimation and its properties (including consistency), Probit and Logit models, Multinomial models.

Suggested Readings:

Greene, William H, *Econometric Analysis*. Prentice Hall, 6th Edition, 2008.
Gujarati, D and Porter, *Basic Econometrics*, McGraw Hill/Irwin, 5th Edition, 2009.

References:

Greene, William H, *Econometric Analysis*, Prentice Hall, 6th Edition, 2008.
Johnston J. and DiNardo, J, *Econometric Methods*. McGraw-Hill, 4th Edition, 1997.
Ramanathan, Ramu, *Introductory Econometrics with Applications,* Thomson Asia Pvt Ltd., Singapore, 5th Edition 2002.
Stock, James H., and Mark W. Watson, *Introduction to Econometrics*, Addison-Wesley Series in Economics, 2nd Edition, 2006.
Wooldridge, J., *Introductory Econometrics: A Modern Approach*. Nelson Education, 2015.
G. S. Maddala, *Introduction to Econometrics*. Wiley Publishers, 4th Edition, Indian Edition, 2009.
Christopher Dougherty, *Introduction to Econometrics*. OUP, 3rd Edition, Indian Edition, 2007.

Course Code : **MEC2I1** Course Type : **Elective-II** No. of Credits : **4.00** No. of Hours : **60**	Course Title **Financial Economics**

Course Objectives:

The objectives of this course are to:

- Provide a comprehensive understanding of the functioning of financial markets in the emerging context of regulation and globalization of markets.
- Equip the students with the tools and technical apparatus necessary to analyze financial markets and financial institutions.

Course Learning Outcomes:

On successful completion of this course, students can be able to:

- Familiar with the basic economic and financial economic concepts necessary to understand the functioning of the financial institutions / markets, and public systems.

Course Outline:

Unit-I: [15 Hours]

Introduction to Financial Markets: Definition & Functions of Financial Markets, Classification of Financial Markets, Money Market, Capital Market and Instruments, Credit Rating, Introduction to Ratio Analysis.

Unit-II: [15 Hours]

Securities and Equity Price: The supply of securities; Corporate securities, capital asset pricing model, Introduction to Mutual Funds**,** Role of Mutual Funds in Financial Markets, Advantages; Disadvantages of Mutual Funds Types of Mutual Funds Mutual Fund & AMFI.

Unit-III: [15 Hours]

Derivative Market: Introduction to Derivatives, Concept of Derivatives, Importance of Derivatives in Financial Markets, Participants in the Derivatives Market, Types of Derivatives, SEBI Guidelines for Derivatives Trading in India.

Unit-IV: [15 Hours]

Financial Market Regulations: Importance of Regulations in Financial Markets Objectives of Financial Market Regulations, Role of Government & Regulatory Bodies, Key Financial Regulators in India, Ethics in Finance. Securities Contract Regulation Act.

Suggested Readings

Campbell, J.Y, A.W. Lo and A.C. Mackinlay, *The Econometrics of Financial Markets*. PUP, 1997.
Chandra, P, *Financial Management: Theory and Practice*. Galgotia Publishers, 1999.

References:

Benninga, S, *Financial Modelling*. MIT Press, 1997.
Bhole, L.M, *Financial Institutions and Markets: Structure, Growth and Innovation*. Tata McGraw-Hill Publishing Company Limited, New Delhi, 1991.
Black, F, M.C. Jenson and M.A. Scholes, *"The Capital Pricing Model: Some Empirical Tests"*, in M.C. Jenson (ed.) Studies in the Capital Markets, Praeger, New York.
Brahmaiah, B. and P. Subba Rao, *Financial Futures and Options*, Himalaya Publishing House, Mumbai, 1998.
Chi-Fu Huang and R.H. Litzenberger, *Foundations for Financial Economics*. North Holland, New York, 1988.
Damodharan, Aswath, *Corporate Finance Theory and Practice*, John Wiley and Sons, 1997.
E. J. Elton and M. J. Gruber, *Modern Portfolio Theory and Investment Analysis*, Wiley, London.
Eicjberger, Jurgen and I R Harper, *Financial Economics*. Oxford University Press, 1997.
Grainblatt, M. and S. Titman, *Financial Markets and Corporate Strategy*. McGraw Hill International edt., 1998.

Course Code : **MEC211** Core/Elective : **Elective-II** No. of Credits : **4.00** No. of Hours : **60**	Course Title **Health Economics**

Course Objective:

- To enable the students to understand how scarce healthcare resources are allocated among competing interventions and among groups in society.
- Students can explore the basic concepts and practical issues faced by decision makers at all levels in the health system in allocating scarce resources.

Course Learning Outcomes:

The students will be able to

- Equip with analytical reasoning and tools of health economics and their normative foundations and ethical implications.
- Use economic models to understand behaviors of actors in the health care sector
- Undertake economic evaluation in healthcare, with an emphasis on identifying, measuring, valuing and analyzing health outcomes and costs.

Course Outline:

Unit-I: [15 Hours]

Health and Economic Development: The state and scope of health economics, Human Capital and health, Health dimensions of development; dual Relationship between Health and Economic Status, Determinants of health: Poverty, Malnutrition and Environmental quality, Components of economic appraisal of health programme.

Unit-II: [15 Hours]

Costs and Benefits of Health Services: Private benefits and costs of providing health services, the failure of the market to provide essential health services, the provision of health services by the government. Application of cost benefit analysis to public health and family planning projects, benefits and costs (both private and social) of training to professional manpower in health sector.

Unit-III: [15 Hours]

Health and Human Capital: Health as human capital approach: measurement of mortality: value of statistical of life, years of life lost; morbidity valuation: Cost of illness, Burden of disease: Meaning and significance.

Unit-IV: [15 Hours]

Disability-adjusted life years (DALYs): The DALY framework: Components and postulates, Disability-adjusted life years (DALYs) versus Quality-Adjusted Life Year (QALY), the Global Burden of Disease (GBD) assessment, Burden of Disease (BD) and Disability-adjusted life years (DALY): A critical appreciation. Health Accounting: National health accounts and Health expenditure efforts.

Suggested Readings:

Anthony J. Cuyler and Joseph P, Handbook of Health Economics, Newhouse NorthHolland,e.d. Elsevier Science, 2000.

References:

Clewar, Ann, and David Perkins. 1998. Economics of Health Care Management. London Prentice Hall, 1998.

Folland, Sherman, Allen Goodman, and MironStano, The Economics of Health and Health Care, New York: MacMillan, 3rd Edition, 2001.

Sherman Folland, Allen C.Gkoodman, and MironStano, The Economics of Health and Health, 2004.

William, Jack, Principles of Health Economics for Developing Countries. WB Institute Development Studies, 1999.

World Development Report, Investing in Health.The World Bank, 1993.

Bhattacharya, J., Hyde, T., Tu, P, Health economics, Palgrave Macmillan, 2014.

World Health Organisation, The economics of the social determinants of health and health inequalities: A resource book. World Health Organisation, 2013/Latest.

Course Code : **MED211** Course Type : **Elective-II** No. of Credits : **4.00** No. of Hours : **60**	Course Title **Public Policy Analysis**

Course Objectives:

The course has been designed to enable the students to:

- Recognize the theoretical and empirical tools required for policy design and evaluation.
- Create policy reports using case studies and real-world examples by analysing economic tools.

Course Learning Outcomes:

On successful completion of this course, students can be able to:

- Get detailed information on economic policy and analysis and a critical awareness of the latest developments in professional practice.
- Understand major economic policy debates and a systematic understanding of the theoretical and empirical dimensions of the international economic environment.

Course Outline:

Unit-I: [15 Hours]

A. Introduction to Policy Analysis: Meaning and Definition - Public Policy - Basic Concepts and Theoretical Background for Policy Analysis: **B. Macroeconomic Policies and their impact:** Macro Economic Policies and Development Role of Monetary and Fiscal Policies in Developing Countries - Financial Policy - Inflation and Economic Development - Resources Mobilization, Impact of WTO: TRIPs, TRIMs, & GATS.

Unit-II: [15 Hours]

Agriculture policies and performance in India: National Policies on Agriculture - Agriculture Policy Vision 2020 - Subsidies - Minimum Support Prices - Public Distribution System - Terms of Trade in Agriculture - Agricultural Policy in the Context of WTO - Impact of Agricultural Policy on Agricultural Sector. Agriculture: policies and performance; production and productivity; credit; labour markets and pricing; land reforms; regional variations.

Unit-III: [15 Hours]

Industrial policies and performance in India: Industrial Policy: Industrial Policy in India since Independence - Industrial Licensing Policy – LPG- New Economic Policy - Impact of Policy Changes on Industrial Production - Structural Changes - Corporate Social Responsibility (CSR). Industry: policies and performance; production trends; small scale industries; public sector; trade and foreign investment policy, labour regulation.

Unit-IV: [15 Hours]

Social Sector Policies in India Population Policies: Demographic Dividend - Population Policy 2000 - Poverty and Unemployment Policies - MGNREGA - Unorganised Sector Labour Policies - Health Policies. Education Policies & Right to Education (RTE) - Food Security and Right to Food - Right to Employment - Right to Information - MDGs and SDGs.

Suggested Readings:

Acharya Shankar, *India's Economy: Some Issues and Answers*, Academic Foundation, New Delhi, 2003.

Anthony E. Boardman, et. al., *Cost Benefit Analysis: Concepts and Practice*, Englewood Cliffs, New Jersey, 2001.

Bhagwati, J., Panagariya, A. *A multitude of labor laws and their reforms. in India's tryst with destiny*. CB, 2012.

References:

Bardach,, *A Practical Guide for Policy Analysis: The Eightfold Path to More Effective Problem Solving*, W. D.C., 2011.

Chanda, R., *Services Led Growth*. In K. Basu, A. Maertens (eds.): New Oxford companion to economics in India. OUP, 2012.

David L. Weimer and Aidan R. Vining, *Policy Analysis: Concepts and Practice*, Englewood Cliffs, New Jersey, 2010.

DuttRuddar, and K. P. M.Sundaram, *Indian Economy*, S. Chand and Company, New Delhi, 2004.

Dye, T. (2013) *Understanding Public Policy*, Englewood Cliffs, NJ, Prentice Hall.

Hanson., and Kathuria, *India-A Financial Sector for the Twenty-First Century*, World Bank, (Edt) OUP, 2001.

HanumanthaRao C. H., *Agriculture, Food Security, Poverty Environment - Essays on Post Reform India*, OUP, 2006.

Kapila Uma, *Indian Economy since Independence*, Academic Foundation, New Delhi, 2015.

Course Code : **MEC213** Course Type : **CCC-I** No. of Credits : **4** No. of Hours : **L 30 T/L 60**	Course Title **Introduction to Artificial Intelligence and Machine Learning**

Course Objectives:

- To familiarize students with the fundamental concepts, theories, and applications of artificial intelligence. Students will gain insight into the various subfields of AI, such as machine learning, natural language processing, computer vision, and robotics.
- To introduce students to the basics of Python programming, enabling them to write code, solve problems, and understand programming constructs. This objective emphasizes building a programming foundation as a prerequisite for implementing AI algorithms.

Learning Outcomes:

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

- Understand the fundamental concepts and terminology of Artificial Intelligence, enabling them to discuss and comprehend AI-related topics.
- Proficient in writing Python programs, understanding syntax, and applying programming constructs.

Course Outline

Unit-I: [15 Hours]

Introduction To Artificial Intelligence: Definition – Future of Artificial Intelligence - Characteristic of Intelligent Agents – Typical Intelligent Agents –Problem Solving Approach to Typical AI problems. Problem solving by Searching: Uninformed and informed strategies and implementation; Path planning; Constraint Satisfaction Problems (CSP).

Unit-II: [20 Hours]

Knowledge Representation: Logical Agents– Propositional and first order Predicate logic - inference - Knowledge representation and Automated Planning– Uncertain Knowledge and Reasoning: Quantifying uncertainty– probabilistic reasoning.

Unit-III: [25 Hours]

Machine learning & AI Applications: Machine learning basics - Learning from examples - forms of learning (supervised, unsupervised, reinforcement learning) - simple models (linear & logistic regression) - Deep Learning AI applications: Natural Language Processing - Language Models - Machine Translation; Speech Recognition; Computer Vision - Image classification.

Unit-IV: [15 Hours]

Python Programming: Introduction-The Python Programming Language, History, features, Installing Python, Running Python program, Debugging: Syntax Errors, Runtime Errors, Semantic Errors – Experimental Debugging, Formal and Natural Languages, The Difference between Brackets, Braces, and Parentheses. **Variables and Expressions:** Values and Types - Variables, Variable & Keyword Type conversion - Operator and Operands – Expressions – Interactive – Mode and script Mode, Order of Operations. **Conditional Statements:** if, if- else, nested if –else -**Looping**: for, while, nested-loops. **Control statements:** Terminating loops, skipping specific conditions.

Unit-V: [15 Hours]

Functions: Function Calls, Type Conversion Functions, Math Functions, Adding New Functions, Definitions and Uses, Flow of Execution, Parameters and Arguments, Variables and Parameters. **Strings:** Strings, String Slices, Strings are immutable, and Searching–Looping–and counting String methods - the in operator–String Comparison – String operations **Lists:** Values and Accessing Elements, Lists are mutable, traversing a List, Deleting elements from List–, Built-in List Operators, Concatenation, In Operator, Built-in List functions and methods.

Suggested Reading:

M.Tim Jones, *Artificial Intelligence: A Systems Approach* (Computer Science), Jones and Bartlett Publishers, NC.; 1st Edition, 2008.

Burkahard A Meier, *Python GUI programming Cookbook*, Packt Publication 2nd Edition.

S. Russell and P. Norvig, *Artificial Intelligence: A Modern Approach*, Prentice Hall, 4th Edition 2022.

References:

Barry, P., *Head first Python: A brain-friendly guide*. " O'Reilly Media, Inc.". Lutz, 2016.

Lavika Goel, *Artificial Intelligence: Concept and Applications*, Willy, 2021

Mark Lutz, *Learning python: Powerful object-oriented programming*. "O'Reilly Media, Inc.", 2013.

Nils J. Nilsson, *The Quest for Artificial Intelligence*, Cambridge University Press, 2009.

SEMESTER-III

Course Code : **MEC301** Course Type : **Core** No. of Credits : **4.00** No. of Hours : **60**	Course Title **Economics of Growth and Development**

Course Objectives:
The objective of this course is to:

- Grasp economic growth and development concepts, including various indices.
- Analyze human resource dynamics, population impacts, and labor market development.
- Evaluate classical and neo-classical growth and development theories.
- Apply insights from growth models, including Neo-Keynesian theories, to income and distribution.
- Synthesize interdependencies between demographics, labor, and economic theories for development challenges.

Course Learning Outcomes:
After completion of the course students can be able to:

- Distinguish between the concepts of growth and development.
- Acquire a basic understanding of the issues and policy debates on economic growth and development.
- Analyze the reasons behind persistence of poverty and inequality in developing countries and suggest suitable policies for tackling them.

Course Outline:

Unit-I: [15 Hours]

Measures of Economic Development: Introduction to Growth and Development; Historical Experiences - GDP Per-Capita to Sustainable Development; Development Gap - Poverty and measurements - HDI and HPI; Inequality - Gini Index and Lorenz Curve; Capability Approach; Globalization and regional development.

Unit-II: [15 Hours]

Human Resources and Labour Markets: Population as a challenge; Malthusian notion-Simon's Challenge; Changing demographic structure, Demographic dividend; Migration - Types, Causes and Impact; Labor market segmentation; Unemployment - Different concepts in unemployment.

Unit-III: [15 Hours]

Theories of Economic Growth and Development: Classical theories The Keynesian Theory; Rostow's Stages of Economic Growth; Harrod - Domar model; Neo-classical growth theories; Endogenous theories of growth; Lewis theory of development; Balanced growth; Rosenstein-Rodan, Nurkse, Hirschman and Lewis unbalanced growth; Lebienstien's view.

Unit-IV: [15 Hours]

Neo-Keynesian Models of Growth and Distribution: Kaldor and L. Pasinetti; Contribution of labour, capital and technology neutrality of technical change; Embodied and Dis-embodied Technical Change**;** Money and Growth - James Tobin and H. G. Johnson.

Suggested Readings:

Debraj Ray, *Development Economics*. Oxford University Press, 1999.
Jhingan, M.L. *The Economics of Development and Planning*, Delhi, Vrinda publication Ltd. 42nd Edition.
Todaro, Michael P., Smith, Stephen C. *Economic Development*. Harlow: Pearson, 12th Edition, 2015.

References:

AK Sen, *Growth Economics*. Penguin, 1970.
Alain De Janvry and Elisabeth Sadoulet, *Development Economics: Theory and Practice*. Routledge, 2016.
Barro, Robert J. and Xavier Sala-i-Martin, *Economic Growth*. McGraw-Hill, Latest.
Ehrman and T.NSreenivasan, *Handbook of Economic Development*. Vol.3, Elsevier Amsterdam.
Ghatak S, *An Introduction to Development Economics*. Routledge, London, 2003.
H.G. Jones, *An Introduction to Modern Theories of Economic Growth*. McGraw-Hill Book Company, Latest.
K. Basu, *Analytical Development Economics*. MIT Press, 1997.
Krugman, *Development, Geography and Economic Theory*. MIT press, 1995.
Perkins, Radelet, Lindauer and Block, *Economics of Development.*, W. W. Norton & Company, 2012.
Sen, Amartya, *Development as Freedom*. Oxford University Press, New Delhi, 2000
Thirlwall, *Growth and development with special reference to developing countries*.Palgrave Macmillan, 2006.

Course Code : **MEC302** Course Type : **Core** No. of Credits : **4.00** No. of Hours : **60**	Course Title **International Economics**

Course Objectives:

The main aims of this course are to:

- Provide an understanding of theories of international trade, trade policies, balance of payments, international institutions, economic integration and Trade Policies in India.
- Improve the analytical skills of the students to relate theory with current trade affairs.

Course Learning Outcomes:

After completion of the course, students can able to:

- Develop a strong theoretical background of international trade.
- Interpret the empirical aspects such as international trade reforms and their impact on Indian economy.

Course Outline:

Unit-I: [15 Hours]

Introduction to Trade: Absolute Advantage, Comparative Advantage: Trade, Growth, and Economic Interrelatedness; Trade and National Characteristics, the Structure of Trade, Gains from trade with homogenous and heterogeneous agents, Offer curves: Equilibrium Terms of Trade.

Unit-II: [15 Hours]

Trade Theories: Hecksher-Ohlin model, Stolper-Samuelson, Rybcznski theorem and factor-price equalization theorem, Leontief paradox; Tariffs and welfare dynamics for small and large countries perspective; Tariffs versus quantitative restrictions; the optimum tariff; Empirical modelling of trade policy; Monopolistic competition models of trade, Tariff versus quota.

Unit-III: [15 Hours]

Balance of Payments and Macro Adjustment Mechanisms: Balance of Payments, Capital Flows, National Accounts, Determinants and Foreign exchange Market Equilibrium, Monetary Policy and Fiscal Policy, Fixed and Flexible Exchange Rate Regimes, Sterilization, Devaluation and BOP Crisis.

Unit-IV: [15 Hours]

Economic Integration and International Institutions: Forms of Economic and regional Integration: Regional Agreements, ASEAN, NAFTA, European Union, Customs Union, Trade Creation and Trade Diversion; IMF, IBRD, WTO, Free trade areas.

Suggested Reading:

Krugman P. R. and Obsfeild M, *International Economics- Theory and Policy,* Addison Wesley, 5th Edition, 2006.
Soderston, B. and Reed G, *International Economics*, McMillan Press, 3rd Edition 1998.
Carbaugh, R. J, *International Economics*. 11th Edition, Thomson South Western, New Delhi, 1994.

References:

Bhagwati, J., A. Panagariya, and T. Srinivasan. *Lectures on International Trade*, MIT Press, 2nd Edition, 1998.
Caves Frankel & Jones, World Trade & Payments: An Introduction, Pearson Education, 2007.
Caves, R, R. Jones, and J. Frankel, *World Trade and Payments: An Introduction*. Addison- Wesley, 1993.
Dornbusch, *Open Economy Macro Economy*, Basic Books, New York, 1980.
Feenstra. R., *Advanced International Trade: Theory and Evidence*. PUP, 2009.
Henry Thompson, *International Economics: Global Markets and Competition*, CUP, 2nd Edition, 2009.
James Gerber, *International Economics*. Pearson, 6th Edition, 2013.
Keith Pilbeam, International Finance. 3rd Edition, Palgrave, 2001.
Paul R. Krugman& Maurice Obstfeild*: International Economics*, Pearson Education, 2005.
Salvatore, D, International Economics. Wiley India, New Delhi, 8th Edition, 2000.
Van Marrewijk, C., *International Economics*, Oxford University Press, 2007.

Course Code : **MEC303**	Course Title
Course Type : **Core**	**Research Methodology and Data Analysis using SPSS**
No. of Credits : **4.00**	
No. of Hours : **L 30 T/L 60**	

Course Objective:

The aim of this course is to

- Enable students to gain insight that how academic research is conducted.
- Help them in review of literature, data collection, hypothesis testing, and report writing.

Course Learning Outcomes:

After completion of this course, student can be able to:

- Develop an understanding on procedures involved in undertaking research.
- Follow sampling framework, use of data analysis tool, and writing report.

Course Outline:

Unit-I: [15 Hours]

Introduction: Definition, Characteristics and Classification of Research, Types of Research; Steps of research, identifying research problem, Hypothesis- Importance and definition - Null and Alternative Hypothesis, Types of errors in testing of Hypothesis, Testing of Hypothesis and level of significance.

Unit-II: [15 Hours]

(A) Collection, Processing and Analysis of Data: Primary and secondary data, Methods of collection of Primary Data; Editing, coding and classification of data; Tabular and graphical presentation. **(B) Report Writing:** Types of research reports - Structure of a research report - Presentation of tabular data and figures; Preparing bibliography-foot notes and annexure; Style of reference writing; Ethics in research and Plagiarism.

Unit-III: [30 Hours]

Introduction to SPSS (Statistical Package for Social Sciences): Data entry and cleaning; Tabulation; Central Tendencies, Measures of Distribution, Measures of Asymmetry; Graphs; Transform / Select Data; Correlation and Linear Regression; Estimation and Hypothesis Testing; and other Statistical Dependence techniques.

Unit-IV: [30 Hours]

Introduction to LaTeX: Installation of the software LaTeX; Understanding Latex compilation - Basic Syntax-Writing equations; Page Layout- Titles, Abstract Chapters, Sections, References, citation; Table of contents, Figure handling - numbering, List of figures, List of tables, Generating index; Packages: Geometry, Hyperref, amsmath, amssymb, algorithms, algorithmic graphic, color; Classes: article, book, report, slide, etc.

Suggested Readings:

Kothari, C. R. *Research Methodology: Methods and Techniques*. New Age Int. Publishers, New Delhi, Latest Edition.
LokeshJasrai, *Data Analysis Using SPSS*, SAGE Publications India Pvt Ltd, New Delhi, 2020.
Panneerselvam R, *Research Methodology*, Prentice Hall India Learning Private Limited; Second Edition, 2013.
W LNeuman, *Social Research Methods, Quantitative and Qualitative Approaches*.Pearson, 2012.
Firuza K A, *A Short Introduction to Latex: A Book for Beginners*, Create space Independent Publishing Platform, 2019.

References:

Bernard, H. R. *Analysis of Qualitative Data*. Sage, UK, 2010.
Bose, Pradip Kumar, *Research Methodology*. ICSSR, New Delhi, 1995.
Bryman, Alan, *Quality and Quantity in Social Research*, Unwin Hyman, London Hughes, 1998.
Bryman, Alan, *Social Research Methods*. Oxford University Press, 2nd edition, 2004.
Fink, Arlene & J Kosecoff, *How to Conduct Surveys A step by step Guide*. Sage, UK, 1998.
Hoyle H.Rick et al, *Research Methods in Social Relations*, Wadsworth, Publication, 2002.
Keith, *Introduction to Methodology*, Sage Publication India Pvt Ltd., New Delhi, 1986.
William J Goode and Paul K Hatt: *Methods in Social Research*, McGraw- Hill. Latest Edt.

Course Code : **MEC311** Course Type : **Elective-III** No. of Credits : **4.00** No. of Hours : **60**	Course Title **Time Series Econometrics**

Course objective:

- To familiarize students with time series econometric techniques used in financial analysis, policy formulation and academic research.
- To provide lab sessions where students apply these concepts using relevant data.

Learning outcomes:

- The students will be able to choose and estimate the appropriate econometric models by using time series data.

Course Outline:

Unit-I: [15 Hours]

Basic concepts of Time series: The concept of data generating process - Stochastic process and Deterministic process, white noise process, stationary and non-stationary stochastic process, difference stationary and trend stationary process, concept of unit root, tests for detecting unit root.

Unit-II: [15 Hours]

Univariate Time Series Models: Autoregressive (AR) model, Moving Average (MA) model, ARMA, ARIMA and SARIMA models, Box Jenkins Methodology – model identification, diagnostics, forecasting – dynamic vis-à-vis static forecasts, Smooth transition models

Unit-III: [15 Hours]

Multivariate time series models: Cointegration – Engle Granger and Johansen Juselius methodology, error correction model - VAR models –lag length selection, factorization – Cholesky decomposition and structural factorization, Causality tests in VAR framework, impulse response functions, variance decomposition - ARDL approach – cointegration with mix of I(0) and I(1) variables, bounds testing, error correction model; NARDL model.

Unit-IV: [15 Hours]

Volatility modelling: Modelling high frequency data; testing for ARCH effect, estimating ARCH models – ARCH, GARCH, ARCH – M, TGARCH, EGARCH, diagnostic checks.

Suggested Readings:

Chris Brooks, *Introductory Econometrics for Finance*. Cambridge UP, 2002.
James D. Hamilton, *Time Series Analysis*. Princeton University Press, 1994.
Kerry Patterson, *An Introduction to Applied Econometrics*. Palgrave Macmillan, 2000.

Reference:

Bernardo, et al,. *Bayesian Theory*. Wiley Series in Probability and Statistics, John Wiley & Sons, 1994.
Chan, Joshua, et. al., *Bayesian Econometric Methods*, 2nd Edition, Cambridge University Press, 20119.
Davidson, R., & MacKinnon, J. G., *Econometric theory and methods.*(Vol. 5). New York: OUP, 2004.
Koopmans, L. H., *The spectral analysis of time series*. Elsevier, 1995.
Pesaran, M. H. (2015). *Time series and panel data econometrics*. OUP.
Walter Enders, *Applied Econometric Time Series*, 4th Edition, Wiley, 2015.
Peter Kennedy, *A Guide to Econometrics*, 6th Edition, Blackwell Publishing, 2008.
Priestley, M. B. *Spectral analysis and time series: probability and mathematical statistics*, Academic Press, 1981.
Verbeek, M. *A guide to modern econometrics*.John Wiley & Sons, 2008.

Course Code : **MEC311** Course Type : **Elective-III** No. of Credits : **4.00** No. of Hours : **60**	Course Title **Insurance Economics**

Course Objectives:

The course is aimed to:

- Create knowledge among the students about the dynamics of insurance sector in India.
- Develop research skill in the Insurance sector

Course Learning Outcomes:

After completion of the course, students can be able to:

- Evaluate the growth and Development of Insurance Business.
- Understand the working and functioning of the Insurance Sector.
- Study the inter-relationship between Insurance & Risk Management.

Course Outline:

Unit-I: [15 Hours]

Introduction to Insurance Economics: Economic Security; Role and definition of insurance; Risk pooling and risk transfer; Economic and legal perspectives, Social vs. private insurance; Life vs. non-life insurance; Classification of life, health and general insurance policies.

Unit-II: [15 Hours]

Fundamentals of Life & Health Insurance: Functions of life & health insurance; Mathematical basis of life insurance; Plans of life insurance; Legal aspects; Provisions of policies; Individual health insurance; Uses and types of evaluation; Principles of underwriting of life & health insurance; Group insurance and superannuation (pension) schemes IRDA.

Unit-III: [15 Hours]

Uncertainty & Risk in Insurance: Pure risk & speculative risk; Expected utility and decision-making under uncertainty; Moral hazard and insurance demand Unit- Concept of risk management; Essentials of risk management; Elements of risk assessment; Risk control & risk financing. Reinsurance distribution systems.

Unit-IV: [15 Hours]

Introduction to General Insurance: Concept of short-term risk; Basics of the following concepts - Common law, equity, proposal/accidence, indemnity, insurable interest, contribution subrogation; representation; utmost good faith, material fact, physical hazard, moral hazard, policy endorsements.

Suggested Readings:

Black. K. Jr. and H.D. Skipper Jr., *Life & Health Insurance*, Prentice Hall, Upper Saddle River, New Jerssey, 2000.
Dionne, G. and S.E. Harrington (eds.), *Foundations of Insurance Economics*, Kluwer Academic Publishers, Boston, 1997.
Pteffer, I. And D.R. Klock, *Perspectives on Insurance,* Prentice Hall Inc., Engleword Cliffs, 1974.
Williams Jr., C.A. M.L. Smith and P.C. Young, *Risk Management and Insurance*, McGraw Hill, New York, 1995.

References:

Government of India, *Old Age and Income Security* (OASIS) Report (Dave Committee Report), New Delhi, 1998.
Insurance Institute of India, General Insurance Underwriting, (IC-22), Mumbai.
Insurance Institute of India, Life Assurance Underwriting, (IC-22), Mumbai.
Insurance Regulation and Development Authority, IRDA Regulations, New Delhi. 2001.
Skipper Jr., H.D.(ed.) *International Risk & Insurance : An Environmental Managerial Approach*, Irwin McGraw Hill, Boston, 1998.
UN Conference on Trade and Development, *The Promotion of Risk Management in Developing Countrie*s, UNCTAD, Geneva, 1987.

Course Code : **MEC311** Course Type : **Elective-III** No. of Credits : **4.00** No. of Hours : **60**	Course Title **Entrepreneurship Development**

Course Objectives:

- To enable the students to understand the concept of Entrepreneurship and to learn the professional behavior of an entrepreneur.
- To identify changes and trends which create business opportunities and to analyze the environment for potential business opportunities.
- To provide conceptual exposure on converting idea to a successful entrepreneurial firm.

Course Learning Outcomes:

On completion of syllabus student can be able to

- Understand on the basic concepts of entrepreneurship promotion and business opportunities to familiars with knowledge about business and project reports for starting a new ventures on team based.

Course Outline:

Unit-I: [15 Hours]

Introduction: Meaning and types, Traits of entrepreneurship, Barriers to entrepreneurship, the entrepreneurial culture, Stages in entrepreneurial process, Women entrepreneurship.

Unit-II: [15 Hours]

Entrepreneurship development: Opportunity Identification and Evaluation, Generation and screening the project ideas, Market analysis, Technical analysis, Cost-benefit analysis and network analysis, Project formulation, Setting up of Enterprises.

Unit-III: [15 Hours]

Business Planning Process: Meaning of business plan- Business plan process- Advantages of business planning- preparing a model project report for starting a new venture (Team-based project work).

Unit-IV: [15 Hours]

Funding and Sources of Finance: Long term, Medium term and Short term sources - Venture capital- Venture capital process- Business angles- Commercial banks- Government Grants and Schemes.

Suggested Readings:

Reddy, *Entrepreneurship: Text & Cases* - Cengage, New Delhi.
Kuratko/rao, *Entrepreneurship: A South Asian Perpective*.-Cengage, New Delhi.
Leach/Melicher, *Entrepreneurial Finance*, Cengage. , New Delhi.
K.Sundar, *Entrepreneurship Development*, Vijay Nicole Imprints private Limited
Khanka S.S., *Entrepreneurial Development*, S.Chand& Co. Ltd., New Delhi, 2001.
Sangeeta Sharma, *Entrepreneurship Development*, PHI Learning Pvt. Ltd., 2016.

References:

Barringer, B., *Entrepreneurship:Successfully Launching New Ventures*, Pearson, 3rd Edi, 2011.
Bessant, J., and Tidd, J., *Innovation and Entrepreneurship*, John Wiley & Sons, 2nd Edition 2011.
Desai, V., *Small Scale Industries and Entrepreneurship*, Himalaya Publishing House, 2011.
Donald, F.K., *Entrepreneurship- Theory, Process and Practice*, Cengage Learning, 9th Edition, 2014.
Hirsch, R.D, et al., *Entrepreneurship*, Tata McGraw-Hill Education Pvt.Ltd., 6th Edition, 2006.
Mathew, J.M., *Entrepreneurship Theory at Cross Roads: Paradigms and Praxis*, Dream Tech, 2nd Edition, 2006.
Morse, E., and Mitchell, R., *Cases in Entrepreneurship: The Venture Creation Process*, Sage South Asia, 2008.
Nagendra and Manjunath, V.S., *Entrepreneurship and Management*, Pearson, 2010.
Reddy, N., *Entrepreneurship: Text and Cases*, Cengage Learning, 2010.
Roy, R., *Entrepreneurshi*p, Oxford University Press, 2nd Edition, 2011.
Stokes, D., and Wilson, N., *Small Business Management and entrepreneurship*, Cengage, 6th Edition, 2010.

Course Code : **MEC313** Course Type : **CCC-II** No. of Credits : **4.00** No. of Hours : **60**	Course Title **Building Mathematical Ability and Financial Literacy**

Course Objectives:

- Master basic set theory, permutations, combinations, and mathematical logic. Apply logical reasoning to analyze propositions and conditional statements.
- Understand financial instruments like stocks, shares, loans, insurance, and income tax liabilities.
- Analyze data using graphical representations. Compute measures of central tendency, dispersion, correlation, and regression.
- Understand money functions, banking operations, and monetary policy tools. Evaluate the role of Reserve Bank of India and monetary policy objectives.
- Apply mathematical and statistical techniques to financial scenarios. Make informed decisions about personal finance and economic policies based on analytical reasoning.

Learning Outcomes:

After completion of the course student should be able to:

- Ability to apply set theory, permutations, combinations, and logical reasoning to solve problems effectively. Proficiency in analyzing propositions and conditional statements using mathematical logic.
- Competence in calculating cost price, profit, loss, and various financial aspects like simple and compound interest.
- Proficiency in understanding and managing financial instruments such as stocks, shares, loans, insurance, and income tax liabilities.
- Competency in analyzing and interpreting data through graphical representations. Proficiency in computing measures of central tendency, dispersion, and conducting correlation and regression analyses.
- Financial Literacy Enhancement Understanding the functions of money, banking operations, and monetary policy tools. Ability to evaluate the role of the Reserve Bank of India and comprehend monetary policy objectives.

Course Outline:

Unit-I: [15 Hours]

Mathematics: Basic set theory and Permutations and combinations. Mathematical logic: Introduction, proposition and truth values, logical connectives, tautology and contradiction, logical equivalences, converse, inverse and Contrapositive of a conditional statement.

Unit-II: [15 Hours]

Commercial Mathematics: Cost price, selling price, profit and loss, simple interest, compound interest (reducing balance and flat rate of interest), stocks and shares. Housing loan and insurance, simple equated monthly installments (EMI) calculation. Income tax: simple calculation of individual tax liability.

Unit-III: [15 Hours]

Statistics: Sources of data: primary and secondary; types of data, graphical representation of data. Population, sample, variable, parameter. Statistic, simple random sampling, use of random number tables. Measures of central tendency: arithmetic mean, median and mode; measures of dispersion: range, variance, standard deviation and coefficient of variation. Bivariate data: scatterplot, Pearson's correlation coefficient, and simple linear regression.

Unit-IV: [15 Hours]

Financial Literacy: Definition, Function and Theories of Money: Money and its functions–The concepts and definitions of money-Measurement of money –Advantages of money – Scheduled and Non-scheduled Banks-Commercial Banks, its functions and credit creation –High powered Money-usage of debit and credit cards-Functions of a central bank-Quantitative and qualitative methods of credit control-Bank rate policy-Cash reserve ratio – Open market operations–Statutory liquidity ratio-Repo rate–Reverse Repo rate-Selective credit control-,role and functions of Reserve Bank of India-Objectives and limitations of monetary policy With special reference to India.

Suggested Reading:

Building Mathematical Ability, Foundation Course, University of Delhi, S. Chand Publications.

J. Medhi. *Statistical Methods* (An Introductory text); Wiley Eastern Ltd. (latest edition).
Lewis, M. K. and p. d., *Monetary Economics*. Oxford University press, Newyork, 2000.

References:

Brahmaiah, B. and P. Subbarao, *Financial Futures and Options*, Himalaya Publishing House, Mumbai, 1998.
C Rangarajan: *Indian Economy: Essays in Money and Finance*, UBS Publishers' Distributors Ltd, 1999.

Course Code **: MEC314** Course Type **: SIP** No. of Credits **: 4.00** No. of Hours : **4 to 6 Weeks**	Course Title **Summer Internship Programme**

The Internship is 2 credits course for duration of 4 to 6 weeks during the summer vacation (approximately May-June) of the first year to be carried out in an organization. Internship is intended to gain practical knowledge related to economic concepts and econometric applications. The students are expected to learn how organizations in practice apply economic concepts and econometric techniques in their operations. The students should submit their Internship report along with the nature of work done during the Internship and the certificate from the organization where the Internship was carried out. The candidates should also present their Internship repot in the seminar before the department faculty which will evaluate the Internship work. The internship report carries marks of 60 (sixty) and remaining 40 (Forty) marks would be for Viva-Voce that will be conducted by the Department as per the rules and regulations of the University.

SEMESTER-IV

Course Code : **MEC401** Course Type : Core No. of Credits : **4.00** No. of Hours : **60**	Course Title **Agricultural Economics**

Course Objective:

The main objective of this course is to

- Provide basic understanding about the use of economic theories on agriculture production system.

Course Learning Outcomes:

The expected outcome after learning this course is that the student will be able to:

- Understand the agricultural production system and
- Use of economic theories in analysing data relating to agriculture.

Course Outline:

Unit-I: [15 Hours]

Introduction to Agricultural Economics: Introduction on Agricultural economics; Nature and Scope of Agricultural Economics; Factors affecting agricultural development: technological, institutional, and general; Interdependence between agriculture and industry.

Unit-II: [15 Hours]

Production Function in Agriculture: Concept of production function - input-output and product relationship in farm production; Growth and productivity trends in Indian agriculture; Agrarian reforms and their role in economic development with special reference to Indian Economy.

Unit-III: [15 Hours]

Farming System and Farm Size: Farming system in Indian Economy - Farm size and productivity relationship in Indian agriculture; Modern agriculture strategy and Green revolution - Implementation, and its Impact.

Unit-IV: [15 Hours]

Emerging Concepts in Agricultural Economics: Sustainable development - Impact of Climate change on Indian agriculture; Sustainable water management in agricultural sector; Emerging of agro-industries in agribusiness enterprises.

Suggested Reading:

Lekhi R. K. and Singh Joginder, *Agriculatural Economics*. Kalyani Publishers, 2015.
Sadhu An, et. al., *Fundamentals of Agricultural Economics*. Himalaya Publishing House, Delhi 2, 2014.

Reference:

Basu, Kaushik, *India's Foodgrain Policy: An Economic Theory perspective*, in Uma Kapila Ed, Indian Economy since Independence, Academic Foundation, New Delhi, 2012.
Bhaduri, A., *The Economic Structure of Backward Agriculture*, Macmillan, Delhi, 1984.
Dantwala, M.L. et.al, *Indian Agricultural Development since Independence*.Oxford &IBH, New Delhi, 1991.
Gardner, Bruce L and Gordon C Raussereds, *Handbook of Agricultural Economics*.North- Holland, Chapter 1, 2000.
Government of India, Planning Commission: *"Risk Management in Agriculture"*, 2007.
World Bank, *Agriculture for Development* reports. Latest.

Course Code **: MEC411** Course Type **: Core** No. of Credits **: 4.00** No. of Hours : **One Semester**	Course Title **Dissertation**

The students are required to submit the synopsis on any selected research topic as per the prescribed guidelines. The M. Sc. Economics students in the final semester would be required to submit dissertation. The research work is to be related to the specialization area chosen by the student. For example a student who has chosen Labour Economics as specialization will have to do a field work or collect secondary data related to labour economics, then data analysis and finally submit a dissertation. Dissertation submitted by the students would be evaluated by Internal examiner/research supervisor appointed by the Department for marks of 60 (sixty). Remaining 40 (Forty) marks would be evaluated by external examiner as Viva-Voce appointed by the University.