



Department of Economics

BOARD OF STUDIES 2023-24

MINUTES

Annexure – I

(Resolution – 1)

M.A. ECONOMICS (Two Year) Programme REVISED COURSE STRUCTURE – 2023-2024

Course		m · / 1	Hou	ırs	-		NZ 1	
Code	Cour	se Title	We	ek	L		Mark	S
			С	Р		CI A	ESE	Total
		Semester – I						
23ECOC101	1.1 Core I:	Advanced Microeconomics	5		5	25	75	100
23ECOC102	1.2 Core II:	Statistics for Economists	5		5	25	75	100
23ECOC103	1.3 Core III:	Indian Economic Development and Policy	4		4	25	75	100
23ECOE104	1.4-Discipline	Modern Economic Thought	3		3	25	75	100
23ECOE105	Centric Elective I	Regional Economics	3		3	25	75	100
23ECOX001	1.5-Generic Elective – I	Economics in Everyday Life	3		3	25	75	100
		Total	20		20			
		Semester – II						
23ECOC201	2.1 Core –IV	Monetary Economics	5		5	25	75	100
23ECOC202	2.2 Core – V	Mathematical Economics	5		5	25	75	100
23ECOC203	2.3 Core – VI	Labour Economics	4		4	25	75	100
23ECOE204	2.4-Discipline	Urban Economics	3		3	25	75	100
23ECOE205	Centric Elective II	Resource Economics	3		3	25	75	100
23ECOX002	2.5-Generic Elective - II	Economics of Natural Disasters	3		3	25	75	100
23TSSC200	2.6 SEC I	Academic Writing Skill	2		2	25	75	100
		Total	22		22			
		Semester – III	·			·		·
23ECOC301	3.1 Core-VII	Advanced Macroeconomics	5		5	25	75	100
23ECOC302	3.2 Core-VIII	Public Economics	5	l	5	25	75	100
23ECOC303	3.3 Core-IX	Econometric Methods	5		5	25	75	100
23ECOC304	3.4 Core – X	Research	4		4	25	75	100

		Methodology						
23ECOE305	3.5-Discipline	Economics of Social Issues	3		3	25	75	100
23ECOE306	III	Entrepreneurial Development	3		3	25	75	100
23TSSC300	3.6 SEC II	Employability Skill	2		2			
23ECOI307	3.7 Internship / I	ndustrial Activity	2	2				
		Total	26		26			
		Semester - IV						
23ECOC401	4.1 Core-XI	International Economics	5		5	25	75	100
23ECOC402	4.2 Core-XII	Development Economics	5		5	25	75	100
23ECOC403	4.3	Project with Viva- voce	7		7			
23ECOC404	4.4 Elective (Industry / Entre preneurship)	Computer Application in Economics	3		3	25	75	100
23ECOC405	4.5 Skill Enhancement Course/ Professional Competency Skill	Cost Benefit Analysis	2		2	25	75	100
23ECOX406	4.6 Exter	nsion Activity	1					
	Ĩ	`otal	23		23			
	Tot	tal Credit Points	91					

Annexure – II

(Resolution - 4(i))

Existing

Semester- I

19ECOC101: Advanced Microeconomics

Credits:5 Hours: 75

Learning Objectives (LO):

- 1. To equip the students in micro economic theories with graphic illustrations.
- 2. To develop the skills of application of the principles to the real world problems.

Course Outcomes

At the end of course, the students will be able to

- CO1 Apply the basic concepts in microeconomics to study the functioning of markets
- CO2 Appreciate the importance of competition in the economy
- CO3 Understand the characteristics of a competitive market
- CO4 Explain market structures wherein firms have market power
- CO5 Evaluate policies to control market power and promote competition
- CO6 Understand the rationale of the various types of goals pursued by firms
- CO7 Analyse alternate perspectives on income distribution
- CO8 Understand the conditions for efficient resource allocation

Unit -1 Market Theories-I

- 1. Perfect competition Short run and long run equilibrium of the firm and industry Price and output determination Optimum firm.
- 2. Monopoly Short run and long run equilibrium Price discrimination, monopoly control, and regulation Contestable Market.
- 3. Monopolistic competition-Chamberlin Model- selling costs Excess capacity.

Unit -2 Market Theories-II

- 1. Oligopoly Non-collusive Models Cournot Bertrand Chamberlin Edgeworth Sweezy Stackelberg
- 2. Oligopoly Collusive Models Cartels and mergers Price leadership Base point price system
- 3. Monopsony Price and output determination Workable competition.

Unit - 3 Alternative Theories of Firm

- 1. Duopoly price game dominant strategy Nash Equilibrium
- 2. Full cost pricing rule Bain's limit pricing theory Sylos Labini Model
- 3. Input output model linear programming applications in decision marking.

Unit – 4 Distribution Theories

- 1. Neo-classical approach Marginal productivity theory; Product exhaustion theorem; Hick's technical progress.
- 2. Modern theory of distribution Factor Pricing in imperfect product and factor markets.
- 3. Determination of Wages Labour supply and wage determination Role of trade unions and collective bargaining

Unit – 5 Welfare Economics

1. Concept of Welfare Economics- role of value and judgment

 Pareto optimality theory – Scitosky double criterion theory –Arrow's theory of social choice

3. Amartyasen on Arrows impossibility theorem

Unit-6 Current Streams of Thought

The Faculty will impart the current developments in the subject during the semester to the students and this component will not be a part of Examinations.

Principal Reading

- 1. Ahuja H.L (2017) Advanced Economic Theory (Sultan Chand Co., New Delhi).
- 2. Hal R. Varian (2004), Intermediate Micro Economics (East-West Press: New Delhi).
- 3. Ruffin Roy. J (1992) Intermediate Micro Economics (Harper & Collins Publishers-New york).
- 4. Sundaram K.P.M. and Vaish M.C. (2004), Micro Economic Theory (S.Chand)

Supplementary Reading

- 1. Koutsyiannis A. (1985) Modern Micro Economics, (Macmillan- London).
- 2. Ferguson C.E. (1986) Micro Economic Theory, (Homewood, U.S.A).
- 3. Salvatore, Dominick (2016), Micro Economic Theory (Tata Mcgraw Hill-New Delhi).
- 4. Watson (1975) Price Theory and its uses, (Scientific Book Company, Calcutta).

со/Ро	P01	PO2	P03	P04	PO5	PO6	P07	PO8	P09	P010	P011	P012	PS01	PS02	PS03	PS04	PSO5	PS06	PS07
CO1	3	2	2		3			1						1	3		2	3	2
CO2	3	2	2		3	3		1						1	3	2	2	3	2
CO3	3	2	2		3	3		1						1	3	2	2	3	2
CO4	3	2	2	1	3	3		1						1	3	2	2	3	2
CO5						3								1	3		2		2

Credits:5

Semester- I 23ECOC101 : Advanced Microeconomics

Learning Objectives:

- 1. To make the students to understand consumer behavior with the theories of Demand and Production.
- 2. To elaborate various market structure and the theories of distribution.

Course Outcomes (Cos):

Upon Completion of this course, the Students will be able

No.	Course Outcomes
CO1	To illustrate and analyse the theories of consumer behavior
CO2	To illustrate and identify the choice under uncertainty.
CO3	To compare how price and output is determined in different market situations and evaluate the market structures
CO4	To identify and examine the alternative theories of firms.
CO5	To define, explain, and compare the theory of distribution.

Unit I: Consumer Choice

Cardinal and ordinal utility - Indifference curve approach – Slutsky's Decomposition of price effect into substitution effect and income effect – Consumer surplus - Marshall's and Hicksian measures – Compensatory Demand Curve-Revealed Preference Theorem- and derivation of Marginal Utility schedule for money income.

Unit II: Economics of Information

Informational asymmetry – Choice under Uncertainty - N-M Index – Inter-temporal choice -Market for lemons- Adverse selection – Insurance market and adverse selection – Solution to principal agent problem- Hidden action (Moral Hazard) - Signaling and Screening.

Unit III: Market Structure Models

- a. Perfect competition Price and output determination Optimum firm-
- b. Monopoly Short run and long run equilibrium Price discrimination monopoly control, and regulation Contestable Market-
- c. Monopolistic competition-Chamberlin Model- selling costs Excess capacity
- d. Oligopoly Duopoly price game-dominant strategy-Nash Equilibrium Noncollusive Models - Cournot- Bertrand – Chamberlin – Edgeworth –Sweezy – Stackelberg- Oligopoly - Collusive Models - Cartels and mergers -Price leadership - Base point price system
- e. Monopsony Price and output determination Workable competition.

Unit IV: Theories and Strategies of Pricing

Full Cost Pricing Rule- Limits pricing theory- Bains Theory- Sylos- Labini Model-Modigliani's Models- Peak Load Pricing – Administered Pricing- Purchasing Power Parity Price.

Unit -V: Distribution Theories

Neo-classical approach – Marginal productivity theory; Product exhaustion theorem; - Modern theory of distribution – Factor Pricing in imperfect product and factor markets- Determination of Wages –Labour supply and wage determination – Role of trade unions and collective bargaining- Theories of Interest- Theories of Profit.

Text Books:

- 1. Jhingan M.L, (2004 Reprint) Advanced Economic Theory (Vrindha Publications (P) Ltd., New Delhi.
- 2. Agarwal, H.S. Micro Economic Theory, (Ane's Books Pvt. Ltd.,) New Delhi.

References:

- 1. Hal R. Varian (2004), Intermediate Micro Economics (East-West Press: New Delhi).
- 2. Ruffin Roy. J (1992), Intermediate Micro Economics Harper & Collins Publishers.
- 3. Koutsyiannis A. (1978), Modern Micro Economics, (Macmillan-London).

Web Resources:

- 1. <u>http://open.oregonstate.education/intermediatemicroecon</u> <u>omics/chapter/module-1</u>
- 2. <u>http://saylordotorg.github.io/text_introduction-to-</u> economic analysis/s16-monopoly.html
- 3. <u>http://saylordotorg.github.io/text_introduction-to-</u> <u>economic analysis/s17-games-and -strategic-</u> <u>behaviour.html</u>

CO/PO	P01	P02	PO3	P04	PO5	PO6	PO7	PO8	P09	P010	P011	P012	PS01	PS02	PS03	PS04	PSO5
CO1	3	2	2		3			1						1	3		2
CO2	3	2	2		3	3		1						1	3	2	2
CO3	3	2	2		3	3		1						1	3	2	2
CO4	3	2	2	1	3	3		1						1	3	2	2
CO5						3								1	3		2

16

Existing

Semester-I

Credits:5 Hours: 75

Learning Objectives (LO):

To introduce the students with the important contemporary schools in Macroeconomics. **Course Outcomes**

At the end of course, the students will be able to

- CO1 Understand how the important schools of macroeconomic thought explain economic fluctuations.
- CO2 Evaluate macroeconomic policies from the perspective of contending macroeconomic paradigms.
- CO3 Analyse alternate perspectives on the role and efficacy of the market and the state in stabilising economic activity.
- CO4 Analyse the role of the Central Bank and its relationship with the government from diverse theoretical viewpoints.
- CO5 Integrate the central insights of macroeconomic schools of thought for a holistic understanding of the state of the economy
- CO6 Apply macroeconomic theories to reflect on Indian economic scenario.

Unit-1 Modern Keynesian Macroeconomics

- 1. Central propositions of Keynesian macroeconomics
- 2. Mundell-Fleming model
- 3. Minsky's financial instability hypothesis
- 4. The Great Recession and the revival of Keynesian macroeconomics

Unit-2The New Classical Macroeconomics

- 1. Assumptions of Rational Expectation Hypothesis
- 2. Policy Ineffectiveness Theorem
- 3. Aggregate supply hypothesis
- 4. Policy implications of new classical approach

Unit-3 Real Business Cycle Theory

- 1. Source of Productivity shocks in Real Business Cycle Theory
- 2. Stabilisation Policy and Unemployment
- 3. Role of money in Real Business Cycle Theory'.
- 4. Policy implications of real business cycle theory

Unit-4 New Keynesian Macroeconomics

- 1. Core propositions of new Keynesian macroeconomics
- 2. Wage and Price Rigidities
- 3. New Keynesian business cycle theory
- 4. Policy implications of new Keynesian macroeconomics

Unit-5 Austrian Macroeconomic Theory

- 1. Basic Principles of Austrian Economic Theory
- 2. Austrian Theory and Business Cycles
- 3. Policy Implications of Austrian Theory

Unit-6 Current Streams of Thought

The Faculty will impart the current developments in the subject during the semester to the students and this component will not be a part of Examinations.

Principal Reading

Business Cycle Economics by Todd A. Knoop(Santa Barbara, California: Praeger)

Supplementary Reading

1. *Modern Macroeconomics : Its origins, development and Current Stateby* Brian Snowden and Howard R Vane (Cheltenham and Massachusetts : Edward Elagar 2005

co/P o	PO1	P02	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	P011	P012	PS01	PS02	PS03	PSO4	PSO5
CO1	3				3				2						3	2	2
CO2	3				3										3	2	2
CO3					3				2							2	2
CO4					3											2	2
CO5																	

Semester- III Core 3.1 23ECOC301 : ADVANCED MACROECONOMICS Credits:5

Learning Objective:

No.

- 1. This course on macroeconomics intends to make the students understand the working of the economy as a whole, integrating the different markets.
- 2. This course also gives the Classical and Keynesian perspectives on the economic factors affecting an economy's general equilibrium.

Course Outcomes (Cos):

Upon Completion of this course, the students will be able to

Course Outcomes

- **CO1** Defines and understand the concepts of general Equilibrium in the Economy and its models and approaches
- **CO2** Define, Illustrate and examine the role of rational expectations influencing macroeconomics variables, models of income and the various approaches to the working of business cycles.
- **CO3** To demonstrate, identify and to understand the functions of the major propositions of new Keynesian macroeconomics
- **CO4** To understand how, Evaluate and to analyse the open economy model in post Keynesian era
- **CO5** To explain and apply the role of stabilization policies such as fiscal and monetary policy on the economy and to analyze, elaborate and to know the importance government policies and tax frame work

Unit 1: Classical, Keynesian and Post Keynesian Macroeconomics

Classical Theory of Output and Employment- Full employment equilibrium- AD-AS Model-Keynesian Theory of Output and Employment- Under employment equilibrium- Effective Demand-Hicks Hansen IS-LM- BP Model.

Unit 2: The New Classical Macroeconomics

Assumptions of Rational Expectation Hypothesis- Policy Ineffectiveness Theorem-Aggregate supply hypothesis- Policy implications of new classical Approach- Source of Productivity shocks in Real Business Cycle Theory- Stabilisation Policy and Unemployment- Role of money in Real Business Cycle Theory'- Policy implications of real business cycle theory- DAD-DAS Model.

Unit 3: New Keynesian Macroeconomics

Core propositions of new Keynesian macroeconomics- Wage and Price Rigidities-New Keynesian business cycle theory- Policy implications of new Keynesian macroeconomics

Unit 4: Open Economy Macroeconomics

Openness in goods in financial market- output interest rate and exchange rateexchange rate regimes- exchange rate and balance of payments- Mundell- Fleming Model.

Unit 5: Macroeconomic Policies

Stabilisation policies- Theory of policy- Tinbergens Approach- Fiscal Policy-Monetary Policy- Optional Policy Mix- Crowding out effect- Bond Financed and Tax Financed Government Expenditure- Rules Vs Discretion- Government Budget and Budget Deficit.

Text Books

1. Dornbusch, Rudiger, Stanley Fischer, and Richard Startz (2000). Macroeconomics, Tata McGraw-Hill Publishing Company, New Delhi.

2. Roger E.A. Farmer (2002), Macro Economics, Thompson Asia Pvt. Ltd., Singapore.

Reference Books

- Michl, T. R. (2015). Macroeconomic Theory: A Short Course: A Short Course. Routledge.Levacic, R. (1982). Macroeconomics: an introduction to Keynesianneoclassical controversies (No. 339.2 L4.).Macroeconomics: Dornbusch, Fischer, and Startz (Ninth Edition), 2004. Tata McGraw-Hill
- Blanchard, O., & Giavazzi, F. (2003). Macroeconomic effects of regulation and deregulation in goods and labour markets. The Quarterly Journal of Economics, 118(3), 879-907.Romer D., 1996,Advanced Macroeconomics, McGraw-Hill International.
- Obstfeld, M., Rogoff, K. S., & Wren-lewis, S. (1996). Foundations of international macroeconomics (Vol. 30). Cambridge, MA: MIT press.Krugman, P.R., and M. Obstfeld, 2003, International Economics: Theory and Policy, 6th edition, India: Pearson Education.

Web Resources

- 1. <u>https://www.econlib.org/library/Enc/bios/Keynes.html</u>
- 2. <u>https://www.postkeynesian.net/post-keynesian-economics/</u>
- 3. https://www.bu.edu/econ/files/2014/08/DLS1.pdf

со/Ро	PO1	PO2	PO3	P04	PO5	PO6	PO7	PO8	PO9	PO10	P011	P012	PS01	PSO2	PSO3	PSO4	PSO5
CO1	3				3				2						3	2	2
CO2	3				3										3	2	2
CO3					3				2							2	2
CO4					3											2	2
CO5																	

Existing

Semester- III

19ECOC302: Econometric Methods

Credits:5 Hours: 75

(Resolved that in Quantitative Papers, at least 50 percentages of Questions must be asked to solve problems in view of increasing Numerical and application skills)

Learning Objectives:

- 1. To teach the students about important applications of econometric tools
- 2. To familiarize the students with econometric model building

Course Outcomes (Cos):

At the end of course, the students will be able to

- **CO1:** Differentiate dynamic econometric models
- **CO2:** Demonstrate the meaning and uses of dummy variables and features of Quality Response models
- **CO3:** Have familiar with the types of simultaneous equation model and methods and their significance
- CO4: Appreciate the types of stochastic processes and its properties in time series econometrics
- **CO5:** Have familiar with the use of dummy dependent variables model
- **CO6:** Apply Econometric techniques to the real world economic problems.
- **CO7:** Become a critical reader of literature concerning empirical analyses

Unit-1 Dynamic Econometric Model

- 1. Auto-regressive model Distributed lag model Koyck's partial adjustment.
- 2. Adaptive expectation Almon model.

Unit -2 Dummy Variables

- 1. Meaning and uses of dummy variables Seasonal Analysis Dummy independent and dependent variables.
- 2. Probit, Logit and Tobit models.

Unit-3 Simultaneous Equation Model

- 1. Structural model Reduced form model Recursive model Simultaneity bias.
- 2. Identification problem Rules for identification and choice of econometric methods.

Unit-4 Simultaneous Equation Methods

- 1. Reduced form method (or) indirect least squares method of estimation Methods of instrumental variables.
- 2. Two stage least squares method Generalized least squares.

Unit- 5 Introduction to Time Series Econometrics

- 1. Stochastic Process Stationary and Non Stationary stochastic process-Unit root stochastic process.
- 2. Trend stationary and difference stationary stochastic process-Integrated stochastic process Properties.
- 3. Unit root tests Cointegration Economic Applications.

Principal Reading

- 1. Gujarathi, D.N. (2012). Text Book of Econometrics [McGraw-Hill, New Delhi]
- 2. Koutsyiannis, A. (2002). Theory of Econometrics[MacMillan, London]

3. Madnani, G.M.K. (2009). Introduction to Econometrics [Oxford IBH Pub. Co., New Delhi]

Supplementary Reading

- 1. Klein, L.R. (2001). An Introduction to Econometrics [Prentice Hall, New Delhi]
- 2. Lange, O. (2001). An Introduction to Econometrics [MacMillan, New York]
- 3. Madalla, G. (2006). Econometric Methods [McGraw-Hill, New Delhi]

co/P o	PO1	PO2	P03	PO4	PO5	PO6	P07	PO8	60d	P010	P011	P012	PS01	PS02	PS03	PSO4	PSO5
C01	3	2		1	3		1	1							3	2	2
CO2	3	2		1	3		1	1							3	2	2
CO3	3	2		1	3		1	1							3	2	2
CO4	3	2		1	3		1	1							3	2	2
CO5	3	2		1	3		1	1							3	2	2

Revised

Semester- III Core 3.3

23ECOC303 : ECONOMETRIC METHODS

Credits:5

Learning Objectives

- 1. To teach the students about important applications of econometric tools
- 2. To familiarize the students with econometric model building

Course Outcomes (Cos):

At the end of course, the students will be able to

- **CO1:** Differentiate dynamic econometric models
- CO2: Demonstrate the meaning and uses of dummy variables and features of
- **CO3:** Have familiar with the types of simultaneous equation model and methods
- **CO4:** Appreciate the types of stochastic processes and its properties in time series
- **CO5:** Have familiar with the use of dummy dependent variables model
- **CO6:** Apply Econometric techniques to the real world economic problems.

Course Objectives:

- 1. To provide an understanding on the knowledge of Econometrics and its use for Economists and social scientists, how economic theories are used to test empirical data.
- 2. To provide in depth knowledge on the Econometric models and to examine the meaning and applicability of dummy variables and to recall the basic methods of time series data.

Unit I: Basic Regression

Analysis nature and scope of econometrics – simple regression model: specification, OLS method, assumptions of CLRM and Gauss Markov theorem, hypothesis testing and goodness of fit – extensions of simple regression model: regression through origin, scaling and units of measurement, functional forms of regression model – maximum likelihood estimation.

Unit II: Dummy Variable

Dummy Variables- Nature of Dummy Variables- ANOVA Models, ANCOVA Models-Dummy Variable alternative to Chow test- Uses of Dummy Variables Seasonal Analysis-Piecewise Linear Regression. Qualitative response Regression Model-Linear Probability Model, Logit Model, Probit Model, Tobit Model.

Unit III: Dynamic Econometric Model

Dynamic Econometric Model: Autoregressive model and Distributed lag model – Estimation of Distributed Lag Models, The Koyck approach to Distributed—Lag models-Adaptive Expectations Model, Partial Adjustment Model. Estimation of Autoregressive Model- Almon approach to Distributed-Lag Models.

Unit IV: Simultaneous Equation Model

Simultaneous Equation Model-Simultaneous equation bias- Identification Problem-Rules for Identification- Test of Simultaneity-Test of Exogeneity. Simultaneous Equation Methods- Recursive models and ordinary least squares- Methods of Indirect Least squares-Method of Two-Stage least squares- Generalized least squares.

Unit V: Time Series Econometrics

Introduction to Time Series Econometrics: Stochastic Process - Stationary and Non Stationary stochastic process-Unit root stochastic process- Trend stationary and difference stationary stochastic process-Integrated stochastic process – Properties-Unit root tests – Co integration Model.

Text Books:

- 1. Damodar N.Gujarati & Sangeetha (2019)Basic Econometrics Tata McGraw-Hill Publishing company Limited New Delhi
- 2. K.Dhanasekaran (2012) Econometrics, Vrinda Publications.

References:

- 1. Gujarathi, D.N. (2005), Text Book of Econometrics [McGraw-Hill, New Delhi].
- 2. Kalirajan, K.P. (1995,. Applied Econometrics [Oxford and IBH, New Delhi].
- 3. Suresh, J. Ghosh (1994), Econometric Theory and Applications [Prentice Hall of India, New Delhi],

Web Resources:

- 1. https://learneconometricsfast.com.
- 2. <u>https://inomics.com</u>.
- 3. https://economicsnetwork.ac.uk.

co/P o	PO1	P02	PO3	P04	PO5	PO6	P07	PO8	P09	P010	P011	P012	PS01	PS02	PSO3	PS04	PSO5
C01	3	2		1	3		1	1							3	2	2
CO2	3	2		1	3		1	1							3	2	2
CO3	3	2		1	3		1	1							3	2	2
CO4	3	2		1	3		1	1							3	2	2
CO5	3	2		1	3		1	1							3	2	2
CO6															3	2	2

Existing

Semester 19ECOC303: Computer Application in Economics Credits:5 III (Practical) Hours:75

Learning Objectives (LO):

To equip skill in applying statistical tools to Economics using computers

Course Outcomes

At the end of course, the students will be able to

- CO1: Able to do text processing i.e., formatting, page setting proofing through MS Word
- CO2: Organize data sets using MS excel
- **CO3:** Apply statistical tools through functions installed, and capable of incorporating their own functions in MS Excel, Create Graph using MS Excel
- **CO4:** Build master table to organize data collected through primary survey and analyse them through SPSS
- CO5: Learn to create questionnaire for primary data collection using google forms

Unit-1 Text Management with MS-WORD

- Creating new Documents -Document template Typing Text Editing Text -Insert Text - Go to, Find, and Replace text or word - Formatting of Text - Format painter - setting Margin - page layout - page orientation
- Cut and Paste utility Copying Document/text in the same or Different file or Document - Drag and drop of typed text
- **3.** Using Bullets and numbering creating tables using auto correct, dictionary thesaurus
- **4.** Formatting a project work: Title page, Certificate page, Contents page, Table of Contents Chapters Bibliography

Unit-2 Managing Data

- 1. EXCEL The typical worksheet or spread sheet cell and their properties formatting cell text, numbers, currency, accounting, date, time, and percentage, scientific formats.
- 2. Formula using arithmetic and relational operators in a worksheet -Advanced Formulas -
- 3. Sum, count, Average, Max, Min, Product -Using auto format
- 4. Economic concepts through excel: consumer utility, Cost, Revenue, production

Unit-3 Graphs and Charts using Economics data sets

- 1. Bar diagrams, pie charts, Area,
- 2. Building Line Diagrams, Histograms, Scatter plots, XY Graphs
- 3. Frequency Graphs, Ogive, Lorenz curve, Time Series

Unit-4 Data Analysis (SPSS)

- 1. Naming variables Coding and Recoding of data Arithmetic calculations with in variables
- 2. Descriptive Statistics: Frequencies, Descriptive, Explore, Cross Tabulation
- 3. Compare Means: One sample T- test, Independent Sample T test, paired sample T test, One way ANOVA
- 4. Correlation: Bivariate, Partial,
- 5. Regression: Linear, Curve Estimation, Multiple Regression

Unit-5: Google Forms

 Introduction to google forms – types of questions – adding description to questions – making questions mandatory / optional – adding sections within a form – sending link to respondents – exporting of data received.

Principal Reading

- 1. Andy Field (2000). *Discovering Statistics Using SPSS for Windows Advanced Techniques for the Beginner* [Sage Publications, New Delhi]
- 2. Dr.K.Dhanasekaran (2010) Computer Applications in Economics First Edition ISBN978-81-8281-296-3
- 3. Darren George Paul Mallery SPSS for Windows step by step Sixth Edition

CO/P O	P01	P02	PO3	P04	PO5	PO6	P07	PO8	P09	PO10	P011	P012	PS01	PS02	PS03	PS04	PSO5
CO1	2	2	1								2		1				2
CO2	2	2	1								2		1				2
CO3	2	2	1								2		1				2
CO4	2	2	1								2		1				2
CO5	2		1			1	1								2		2

Revised

Semester- IV 4.4 Elective (Industry/Entrepreneurship)

23ECOC404 : COMPUTER APPLICATION IN ECONOMICS

Credits:3

Learning Objectives

To equip skill in applying statistical tools to Economics using computers **Course Outcomes (Cos):**

At the end of course, the students will be able to

- **CO1:** Organize data sets using MS excel, apply statistical tools through functions installed, and capable of incorporating their own functions in MS Excel
- CO2: Create Graph using MS Excel using economic data sets
- **CO3:** Build master table to organize data collected through primary survey and analyse them through SPSS and analying univariate data
- **CO4:** Analyse multivariate data using SPSS

CO5 Collect primary data through Google forms

Unit-1 Managing and analyzing data using MS Excel

The typical worksheet or spread sheet – cell and their properties – formatting cell – text, numbers, currency, accounting, date, time, and percentage, scientific – formats - Formula using arithmetic and relational operators in a worksheet -Advanced Formulas - Functions: Sum, count, Average, Max, Min, Product -Using auto format - Economic concepts through excel: consumer utility, Cost, Revenue and production

Unit- 2 Creating Graphs and Charts using Economics data sets

Bar diagrams, pie charts, Area - Building Line Diagrams, Histograms, Scatter plots, XY Graphs - Frequency Graphs, Ogive, Lorenz curve, Time Series

Unit-3 Introduction to SPSS and analysing Univariate Data

Naming variables –types of data – Nominal, ordinal, Scale - Coding and Recoding of data - Arithmetic calculations with in variables - Descriptive Statistics: Frequencies, Descriptive, Explore, Cross Tabulation - Compare Means: One sample T - test, Independent Sample T - test, paired sample T test, One way ANOVA

Unit-4 Analysing Multivariate Data using SPSS

Correlation: Bivariate, Partial - Regression: Linear, Curve Estimation, Multiple Regression

Unit-5: Data collection using Google Forms

Introduction to google forms – types of questions – adding description to questions – making questions mandatory / optional – adding sections within a form – sending link to respondents – exporting of data received.

Principal Reading

- Andy Field (2000). Discovering Statistics Using SPSS for Windows – Advanced Techniques for the Beginner [Sage Publications, New Delhi]
- 2 Dr.K.Dhanasekaran (2010) Computer Applications in Economics First Edition ISBN 978-81-8281-296-3
- 3. Darren George Paul Mallery, SPSS for Windows step by step Sixth Edition

CO/ PO	P01	P02	PO3	P04	P05	PO6	PO7	P08	P09	P010	P011	P012	PS01	PS02	PSO3	PSO4	PSO5
CO1	2	2	1								2		1				2
CO2	2	2	1								2		1				2
CO3	2	2	1								2		1				2
CO4	2	2	1								2		1				2
CO5	2		1			1	1								2		2

Annexure – III

(Resolution - 5)

Semester- I 23ECOC102: STATISTICS FOR ECONOMISTS Credits:5

Learning Objective:

- 1. To provide a strong foundation in statistical concepts and develop skills in data handling and research.
- 2. The course facilitates in inferring the intensity of relationship between multiple variables and building appropriate statistical models. The models thus formulated can be tested for their significance and can be used for forecasting

Course Outcomes (Cos):

Upon Completion of this course, the Students will be able to

No.

Course Outcomes

- **CO1** Summarize the basic Probability rules and understand theoretical distributions.
- **CO2** Acquire knowledge on the various sampling methods and testing of Hypotheses
- **CO3** Use t test and chi square for analysis
- **CO4** Understand the importance of one and two way ANOVA
- CO5 Know the various Decision making tools available

Unit I: Probability

Probability - Addition and Multiplication Theorems - Conditional Probability -Discrete and Continuous - Random Variables - Mathematical Expectations – Bayes Theorem - Theoretical Distributions - Binomial, Poisson and Normal.

Unit II: Sampling and Hypothesis Testing

Sampling Theory - Types of Sampling - Sampling Distributions - Parameter and Statistic - Testing of Hypothesis - Level of Significance - Type I and Type II Errors -Standard Error - Properties of Estimator.

Unit III: Test of Significance Large and Small Sample

Difference between Large and Small Samples - Test of Significance for Large Samples - Test for Two Means and Standard Deviations - Proportion and Confidence Interval - Small Sample Test - t-test - Paired t- test - Chi-square Test-Test of Goodness of Fit.

Unit IV: Analysis of Variance

F test: Assumptions in F test - Analysis of Variance: Assumptions – One-Way and Two-Way Classifications.

Unit V: Statistical Decision Theory

Definitions – Concepts – Maximin - Minimax - Bayes Criterion - Expected Monetary Value - Decision Tree Analysis: Symbols - Steps - Advantages and Limitations.

Text Books

- 1. Gupta S.P., Statistical Methods, Sultan Chand and Sons, New Delhi, 2017.
- 2. Anderson, Sweeney and Williams, "Statistics for Business and Economics", Cengage, 2014.

References:

- 1. Aggarwal. Y.P (2002), "Statistics Methods Concepts Application and Computation", Sterling Publishers Private Ltd., New Delhi.
- 2. Vittal P.R., Mathematical Statistics, Margham Publications
- 3. Pillai R.S.N. and Bagavathi V (2010), Statistics, Sultan & amp; Chand Sons, New Delhi.

Web Resources

- 1. https://www.statista.com.
- 2. https://techjury.net
- 3. https://dss.princeton.edu/online_help/analysis/interpreting_regression.htm

CO/P O	P01	P02	P03	P04	PO5	PS01	PS02	PS03	PSO4	PSO5
CO1	3	2			3	3	2	3	2	2
CO2	3	2			3	3	2	3	3	3
CO3	3	2			3	3	3	3	3	3
CO4	3	2			3	3	3	3	3	3
CO5	3	2		1	3	2	3	3	2	3

Semester- II
Core 2.223ECOC202 : MATHEMATICAL ECONOMICSCredits:5

(Resolved that in Quantitative Papers, at least 50 percentages of Questions must be asked to solve problems in view of increasing Numerical and application skills)

Learning Objectives (LO):

- 1. To equip the students with the knowledge of mathematical techniques
- 2. To train the students with the applications of mathematics in economics

Course Outcome (Cos):

At the end of course, the students will be able to

- **CO1:** Demonstrate economic applications of partial and total derivatives
- **CO2:** Distinguish between types of integral calculus and understand their applications in economics
- **CO3:** Appreciate different orders of differential equations and their uses in economic analysis
- **CO4:** Derive total from the marginal values and their uses in economic valuations
- **CO5:** Understand the role of difference equations in economics and Economic Models

Unit-1: Introduction to Linear Algebra

Relations and functions – Types of functions-Matrixs and Determinants – Simultaneous linear equations-Cramer's rule – Input output model – Hawkins-Simon's condition – open and closed models.

Unit 2: Differential Calculus

Introduction to Functions, Limits and Continuity, Derivatives – Concept of maxima & minima, elasticity and point of inflection. Profit & revenue maximization under perfect competition, under monopoly. Maximizing excise tax revenue in monopolistic competitive market, Minimization of cost

Unit 3: Optimization Techniques

Functions of several variables - first and second order simple, partial and total derivatives – Elasticities and Growth rates - Homogenous function, Euler's theorem – Cobb Dougla's production function - Optimisation techniques - Maxima and Minima Economic Applications

Unit – 4: Constrained Optimization

Lagrange's multiplier method - First and Second Order Conditions -Consumer equilibrium – Slutsky equation - Producer equilibrium – Least cost combination of inputs – Expansion path – Minimizing cost with output constraint – Maximizing profit with output constraints.

Unit – 5: Economic Dynamics

Differential Equations - Basic Ideas - Types-Solution of Differential Equations (Homogenous and Exact) - Linear Differential Equations with Constant Coefficients (First and Second Order) - Applications- Solow's Model-Harrod-Domar Model-Applications to Market models - Difference Equations - Types - Linear Difference Equations with Constant Coefficients (First and Second order) and solutions – Applications - Samuelson's Accelerator - Multiplier model - Cobweb model.

Principal Reading

1. Geoffrey Renshaw, Mathematics for Economics, Oxford University Press, 2012

Supplementary Reading

- 1. Renshaw, Georf (2012), Maths for Economics, Oxford University Press, UK
- 2. Edward T.Dowling, Introduction to Mathematical Economics, Tata McGraw Hill,Scaum Outline,2004.

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со/ро	PO1	PO2	PO3	P04	PO5	PO6	P07	PO8	P09	PO10	P011	P012	PS01	PS02	PSO3	PS04	PSO5
CO1	3	2			3			1							3	2	2
CO2	3	2			3			1							3	2	2
CO3	3	2			3			1							3	2	2
CO4	3	2			3			1							3	2	2
CO5	3	2		1	3			1							3	2	2

Semester-II **23ECOC203** : LABOUR ECONOMICS Credits:4

Learning Objectives:

Core 2.3

No.

- 1. To enable and acquire the knowledge the relating to the significance of labour market
- 2. To understand the man power in Economic Development.

Course Outcomes (Cos):

Upon Completion of this course, the students will be able to

Course Outcomes

- **CO1** study the recent trends of labour and their productivity
- **CO2** assess the determination of employment and wages
- understand the trade unions and their impact on labour market CO3
- **CO4** evaluate the Industrial relation
- **CO5** analyze the current trends of social security measures

Unit I: Labour Market and Policies

Labour Market- Nature and Characteristics, Demand for Labour in relation to size and pattern of investment, Choice of technologies and labour policies Supply of Labour, Growth of Labour Force, Labour Market Policies, Mobility and Productivity

Unit II: Employment and Wage Determination

Employment and Development relationship- poverty and unemployment, Unemployment- Types, concepts and measurement, Employment Policy Wage Determination- Classical, Neo-classical and Bargaining theories; Concepts of minimum wage and efficiency wage; Non-wage component

Unit III: Trade Union Movement

Since Independence and Present Scenario of the Trade Union Movement- AITUC -INTUC - HMS - UTUC - Association of Indian Trade Unions with International Trade Unions – Problems of Trade Unions – Essentials for success of a Trade Union - The Trade Union Act, 1926- Recent policies relating to Trade union act

Unit IV Industrial Relation

Need for Industrial Relation Machinery-Preventive and Curative methods-Collective Bargaining, Arbitration and Adjudications-industrial Democracy, the concept of Workers participation in management- Role of State in Industrial Relations.

Unit V: Social Security and Reforms

Social Security- Concepts and evolution, Social assistance and insurance, Review and Appraisal of State Policies, Special Problems- Child labour, discrimination, bonded labour -Labour market Reforms- Exit Policy, safety requirements, National Commission on Labour, Globalisation and labour markets, mobility of labour.

Text books

- 1. Pant C.(1978),Indian Labour Problems,(Allahabad,Chaitanya Publishing House).
- 2. Singh S.S., and Metha S.(1989), Labour Economics, (Ajanta Prakasham New Delhi).

References

- 1. Tyagi P.B.(1995),Labour Economics and Social elfare,(JaiprakashNath&Co.Meerut),
- 2. Baholiwal T.N.(1981), Economics of Labour and Industrial Relations,(SahityBhawan, Agra).
- 3. Giri V.V.(1985), Labour Problems in Indian Industry (Asia Publishing House, Bombay).

Web resources

1.https://fac.ksu.edu.sa >sites>defaultfiles>Moder.. 2.http://students.aiu.edu >resources>onlineBook>q... 3. http://assets.vmou.ac.in > PGDLL06

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	P011	P012	PS01	PS02	PSO3	PSO4	PSO5
CO1	3	2	2		3	3		1	2	2	3		1		3	2	2
CO2	3	2			3	3	1	1	2	2			1		3	2	2
CO3	3	2			3	3	1	1	2	2	3				3	2	2
CO4	3	2	2		3	3	1	1	2						3	2	2
CO5	3	2	2		3	3	1	1	2	2					3	2	2

Semester- III Core 3.2

Credits:5

Learning Objectives:

1. To understand the economics of government expenditure and taxation.

2. To discuss the implications of policy for efficiency and equity.

Course Outcomes (Cos):

Upon Completion of this course, the students will be able

No.	Course Outcomes
CO 1	To label and interpret the basic theories of public finance.
CO2	To explain, identify and analyse the public expenditure.
CO3 CO4	To recall, outline and determine about taxes To organize, examine and evaluate about fiscal policy.
CO5	To summarize, develop and explain about Indian public finance.

Unit I: Introduction

Introduction Role of public finance - Major Fiscal functions- Private and Public goods - Mixed goods - Merit goods- Social goods-Market failure Public goods and externalities.

Unit II: Theories of Public Expenditure

Public Expenditure Theories of Public Expenditure – Musgrave – Wagner - Peacock Wiseman– Growth of Public Expenditure – Canons and Evaluation of Public Expenditure.

Unit III: Taxation

Taxation and Public Debt Direct and Indirect taxation – Cannons and Principles of Taxation – Theory of optimal taxation – modern theory of incidence- Classification and Sources of public debt–Burden of public debt–Principles of public debt– Methods of repayment of public debt–Compensatory aspects of public debt policy.

Unit IV: Fiscal Policy

Fiscal Policy and Fiscal Federalism Objectives and Instruments of Fiscal policy – Compensatory Fiscal policy – Fiscal policy for Economic stability and growth– Effectiveness of fiscal policy- Fiscal federalism – Role of finance commission – Principles – Recommendations of 14th Finance Commission and Terms of Reference of the 15th Finance Commission – Transfer of resources from Union and States and States to Local Bodies.

Unit V: Financial Administration

Indian Public Finance - Financial Autonomy in India – Tax Reform proposals of Kelkar Committee Tax structure and Working of Fiscal federalism in India – Resource transfer from union to state of Tamil Nadu – VAT – Merits and Demerits-GST design, implementation and impact- Fiscal consolidation in India since 20012002 – Fiscal responsibilities of central and state- FRBM Act 2003- Central and State government Budgets – issues of fiscal deficit- Fiscal policy and Economic downturn : Fiscal correction versus additional Stimulus.

Text Books:

- 1. Tyagi B.P., Public Finance, Jai Prakash Nath & Company, 2014
- 2. AmerashBagchi (2005), Readings in Public Finance, Oxford University Press, New Delhi.

References:

- 1. Amerash Bagchi (2005), Readings in Public Finance, Oxford University Press, New Delhi.
- 2. Rao, M. Govida and Nirvikar Singh, (2005), The Political Economy of Federalism in India, Oxford University Press, New Delhi.
- 3. Government of India, Economic Survey (Annual issues). Ministry of Finance, New Delhi. Tamilnadu State Council for Higher Education 15.

Web Resources:

- 1. <u>https://www.india.gov.in/my-government/documents/policy</u>
- 2. <u>http://www.niti.gov.in</u>
- 3. https://www.indiabudget.gov.in/

co/P 0	P01	P02	PO3	PO4	PO5	PO6	P07	PO8	P09	P010	P011	P012	PS01	PS02	PS03	PS04	PSO5
CO1		2			3	3	1	1	2							2	
CO2	3	2		1	3	3		1	2	2		2	1		3	2	2
CO3	3	2			3	3		1	2		3	2			3	2	2
CO4	3	2			3	3		1	2			2			3	2	2
CO5	3	2			3	3	1	1			3	2			3	2	2

Semester- IV Core 4.2 23ECOC402: DEVELOPMENT ECONOMICS Credits: 5

Learning Objectives:

- 1. Tracing the evolution of theories of economic development
- 2. To impart ideas on economic development and economic growth and its determinants and to familiarize the students about the index of measuring economic development

Course Outcomes (Cos):

No.

Upon Completion of this course, the students will be able to

- **CO1** Understand the concepts of Development
- **CO2** Acquire knowledge about the theories of economic development
- **CO3** Ability to understand the concepts related to Poverty , Inequality, Health and Education
- **CO4** Gain knowledge about the insights of Rural Development
- **CO5** Understand the role of State in Fiscal Management

Unit I: Introduction conceptualizing development

Introduction Conceptualizing development: (a) GNP) as development indicator (b) Sen's capabilities approach to development: The Human Development Index- The structural characteristics of developing economies-Factors of development : (a) Capital accumulation (b) Labour (c) Natural resources (d) Technological Progress (e) Social institutions cultural values and entrepreneurial ability.

Unit II: Theories of Development as growth

Theories of Development as growth: (a) Harrod-Domar model (b) Rostow's stages of growth theory (c) Lewis theory (d) balanced and unbalanced growth (e) Neo classical growth theory –Solow Model- Contemporary theory of development: (a) New growth theory: Romer model (b) Underdevelopment as Co-ordination failure (c) Kremer's O-Ring theory of development-Dependency theory-path dependence in development: QWERTY- Geography and development: Krugman's theory.

Unit III: Poverty, Inequality and Human Capital Measurement

Poverty, Inequality and Human Capital Measurement of inequality and poverty-Inverted –U hypothesis - Cause of inequality- Investing in education and health-the human capital approach Education and Development (a) social and private benefits of education- (b) education, inequality and poverty (c) Women's education and development Health system in development (a) health and productivity (b) financing health system in developing economics (c) Gender perspective in health care.

Unit IV: Agriculture and Rural Development

Agriculture and Rural Development The role of agriculture in development-Agricultural policy: (a) agricultural taxation (b) pricing policy- Risk aversion and uncertainty in subsistence farming-sharecropping and interlocking factor markets- Rural urban migration –Todaro model –Rural credit markets (a) providers and characteristics (b) theories of informed credit markets: lender's monopoly and default collateral.

Unit V: Policies for Market Development

Policies for development Market and the state in development:(a) The Washington consensus components and critical evaluation (b) The role of state in development (c) market failure state failure and development- Trade Policy in development : (a) import substitution (b) export promotion- Fiscal policy for development: (a) direct Vs indirect taxes (b) pattern and level of taxation.- Financial system in development: (a) the role of financial system in development (b) role of central banks (c) financial liberalization.

Text Books:

- **1.** Jhingan M.L. Jhingan B K.,2019 The Economics of Development and Planning.,42 ed.,Vrinda Publications
- **2.** Agrawal, A.N., Indian Economy: Problems of Development and Planning

References

- 1. Michael P. Todaro and Stephen C. Smith (2004), Economic Development, Pearson Education, Singapore cha- 2, 6,7, 8.
- 2. Yujiro Hayami (2003), Development Economics: Oxford University Press, New Delhi. Tamilnadu State Council for Higher Education 17.
- 3. Debraj Ray (2009), Development Economics, Oxford University Press, New Delhi.

Web Resources

- 1. https://economicsconcepts.com/human_development_index_(hdi).htm
- 2. <u>https://hdr.undp.org/data-center/human-development-index#/indicies/HDI</u>
- 3. <u>https://web.stanford.edu/~chadj/facts.pdf</u>

co/P 0	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	P09	P010	P011	P012	PS01	PSO2	PS03	PSO4	PSO5
CO1	3		2		3	3		1	2	2	3		1	1	3	2	2
CO2	3	2			3			1	2	2				1		2	2
CO3	3		2	1	3	3	1		2	2				1	3	2	
CO4	3		2	1	3	3	1		2	2	3		1		3	2	2
CO5	3		2		3		1		2				1		3	2	2

Semester-I 23ECOE104 : MODERN ECONOMIC THOUGHT Credits:3

Learning Objectives:

- 1. To trace the ideas of Modern Economists
- 2. To understand the contribution of the Economists.

Course Outcomes (COs):

Upon completion of this Course, the students will be able to

S.No	Course Outcomes
CO1	understand modern economic concept of role of Entrepreneur
	Innovation, Business Cycles and Capitalism and Socialism.
CO2	ability to understand about Capital Formation, Disguised
	Unemployment Imperfect Competition and Mathematical Economic
	Analysis
CO3	understand the ideas of Permanent Income Hypothesis, Revealed
CO4	Preference Theory, Social Welfare Function and Samuelson's Utility gain knowledge about the ideas of Modern Indian Economists-
	Regional Economics, Ecological Theory of Population - Economics of
CO5	Growth and Development-Economics of Fast understand economic ideas like role of Technological Progress-
	Poverty -Deficit Financing and Public Expenditure, Human Factor in
	Economic Growth and Inequality and Concept of Capability

Unit I: Classical Economic Thought

Economic ideas of Irving Fisher –The Quantity theory of Money- Theory of Interest. Joseph Alois Schumpeter - Method of Study –Deductive Method –Inductive Method-Theory of Economic Development- Role of Entrepreneur – Innovation-Business Cycles – Capitalism and Socialism . J.K. Galbraith – The objective of Economic Progress- Concept of Countervailing Power.

Unit II: Neo Classical Economic Thought

Ragnar Nurske – Foreign Resources – Capital Formation –Disguised Unemployment "Mrs- Joan Robinson –Imperfect Competition – F.Y .Edgeworth –Mathematical Economic Analysis –Three Dimensional Utility

Unit III: Keynesian Economic Thought

Lord Lionel Robbins – Definition of Economics-Causes of Depression -Milton Friedman – Quantity Theory of Money –Permanent Income Hypothesis ,Friedman and Savage Hypothesis , Paul A.Samuelson –Impact of Keynesian Economics – Revealed Preference Theory –Business Cycles –Social Welfare Function-Samuelson's Utility Possibility Approach

Unit IV: Post Keynesian Economic Thoughts

Ideas of Modern Indian Economists-R.K.Mukerjee- Institutional theory of Economics-Regional Economics - Ecological Theory of Population -Planning in India, J.K.Mehta – Static and Dynamic Economics -Economics of Welfare -Economics of Growth and Development-Economics of Fast

Unit V: Indian Economists

C.N.Vakil -Planning- Wage -Goods Model-Role of Technological Progress-Poverty -Deficit Financing and Public Expenditure, V.K.R.V.Rao -Economic Activities -Institutional Development-Deficit Financing-Fiscal Policy-Human Factor in Economic Growth-Amartya Kumar Sen – Poverty and Famine ,Poverty and Inequality-Concept of Capability-Entitlement -Choice of Techniques.

Text Books:

- 1. Dr.U.C.Kulshrestha (1994), History of Economic Thought, Lakshmi Narain Agarwal
- 2. Dr.S.Sankaran (2006) , A History of Economic Thought , Margham Publications

Reference Books:

- 1. Eric Roll (1956) A History of Economic Thought, Prentice Hall, Inc, U.S.A,
- 2. Dr.Pankaj Srivastava (2018) Economic Thinkers , DND Publications ,Jaipur
- 3. M.L.Jhingan,M.Girija and L.Sasikala (2011),History of Economic Thought, Vrindha Publications

Web Resources:

- 1. https://ebrary.net/112930/history/a_brief_history_of_economic_thought
- 2. https://www.exploring-economics.org
- 3. https://www.econlib.org

с <i>о/</i> Р о	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	P09	PO10	P011	P012	PS01	PS02	PS03	PSO4	PSO5
CO1	3		2		3	3		1		2	3	2	1	1	3	2	2
CO2	3		2		3	3		1		2	3	2	1	1	3	2	2
CO3	3		2		3	3		1		2	3	2		1	3	2	2
CO4	3					3					3	2			3	2	2
CO5	3				3						3	2			3	2	2

Semester-I	23ECOE105 : REGIONAL ECONOMICS	Cradite: 2
DCE 1.4	(OPTIONAL)	Credits.3

Learning Objectives

- 1. To equip the analytical skills required to analyse the regional economic issues
- 2. To understand Regional economic growth in India

Course Outcomes (Cos):

No.

Upon Completion of this course, the students will be able to

Course Outcomes

CO1 understand the Nature and scope of regional economics and its need

- CO2 discuss the Models of regional, inter-regional and multi-regional models
- **CO3** evaluate the various theories of regional economic growth
- **CO4** describes the Measurement of interregional economic growth at State level

CO5 apply Regional Aspects of Stabilization and Growth Policy

Unit I: Introduction to Regional Economics

Nature and scope of regional economics – Regional economics and regional science – Regional and Urban Economics: Need for a separate study of regional economics – Concept and types of regions: Administrative, Planning, Agro-climatic, Economic and Functional regions.

Unit II: Approaches to regional growth

Approaches to regional growth: Models of regional, inter-regional and multi-regional models; Export base models – Location Theory - Gravity models – Shift-share analysis

Unit III: Theories of regional economic growth

Neoclassical models – Dualistic models: Social dualism – Labour surplus model of Arthur Lewis- Migration and development: Harris-Todaro – Core-Periphery models: Myrdal's Cumulative Casuation Hypothesis – Regional Input-output models - New Economic Geography models: Paul Krugman's model of industrial location and development

Unit IV: Regional economic growth in India

Administrative regions in India: State, District, Taluk and Village; Urban and Rural regions - Concept, definition and measure of State Income (GSDP) – Rural and urban GDP – Differences in estimation of national income (GDP) and State Income (GSDP) - Measurement of interregional economic growth at State level

Unit V: Regional Aspects of Stabilization and Growth Policy

Post-war Regional Cyclical Behaviour and Policy Measures for Stabilization, Theories to Explain Regional Differences in Growth, Fiscal Programmes, Tax and Transfer Programmes, Fiscal Responses of Power Level Governments, Regional Orientation to Policy Programmes and Central Responsibility.

Text books

- 1. Capello Roberta. (2016). Regional Economics. Routledge (New York).
- 2. Temple, M. (1994). Regional economics. St. Martin's Press.

References

- 1. Harry W Richardson (1973): Regional Growth Theory, Macmillan.
- 2. Harry W. Richardson. (1970). Elements of Regional Economics. Penguin Books (New York).
- 3. Harry W Richardson (1969): Regional Economics: Location theory, Urban structure and regional change, Weidenfeld & Nicolson (London)

Web resources

1.http://www.rri.wvu.edu/WebBook/Giarratani/contents.htm

2.https://researchrepository.wvu.edu >cgi>viewcontent

3. https://ddceutkal.ac.in > Syllabus > MA_Economics

co/P o	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	P011	P012	PS01	PS02	PSO3	PSO4	PS05
CO1	3			1	3	3	1	1	2		3	2	1		3	2	2
CO2	3	2		1	3	3	1	1	2		3	2	1		3	2	2
CO3	3	2		1	3	3	1	1	2		3	2	1		3	2	2
CO4	3	2		1	3	3	1	1	2		3	2	1		3	2	2
CO5	3	2		1	3	3	1	1	2		3	2	1		3	2	2

Learning Objectives

- 1. To equip with theory and measurement of urban economic growth and development, spatial structure of cities and urbanization.
- 2. The course outlines the issues of urban poverty and its impact on urbanization.

Course Outcomes (Cos):

Upon Completion of this course, the students will be able toNo.Course OutcomesCO1understand scope of urban economics and urban economic growthCO2Describe the process of urbanisation and classification or urban
areasCO3Evaluate the various theories of urban growth and spatial structureCO4Explain the urban Labour Market, Labour Force Participation and
Distribution of WorkersCO5Familiarize the urban problems and planning process.

Unit I: Introduction

Definition and Scope of Urban Economics - Sources of Urban Growth – International migration, Trends in growth of urban population in the world - Urban reclassification and physical expansion of urban boundaries –Urbanization and agglomeration economies – industrialization and services sector growth – Urbanization and urban economic growth – Urbanization and globalization.

Unit II: Economics of Urbanization

The Process of urbanization: Nature and dimensions, factors initiating and perpetuating urbanization process - Characteristics of an economy passing through different stages of urbanization - Classification of urban areas by demographic, geographical and economic criteria- Process of sub-urbanization

Unit III: Theories of Urban Growth and spatial structure

Christaller's Central Place Theory - The Human Ecological Approach to Urban Growth - Urban Size: Ratchet-Rank Size Rule - Migration and urban economic growth: Harris-Todaro Model – Concepts of City Structure - The Minimization of Costs of Friction Hypothesis -Location Equilibrium of an Urban Firm - The Concentric Zone Hypothesis - Urban Residential Land Use Models: Alonso, Muth, Siegel, Park Burgess.

Unit IV: Urbanization and Labour Market

Urbanisation and Labour Market - Pull and Push Factors for Urbanisation in India - High Wages and Improved Infrastructure - Employment Opportunities and Educational facilities - Growth of formal and Informal economic activities - Labour Force Participation and Distribution of Workers

Unit V: Urban Problems and Urban Planning

Over Population and congestion - Urban housing problem - Urban environment: Air, Water and Noise Pollution - Urban poverty and inequality - Urban Infrastructure: transport Water Supply, Sanitation and Solid waste management -Need for Urban Planning: Objectives and Techniques - Emerging Planning Process -Comprehensive Development Plan - Master Plan - Jawaharlal Nehru National Urban Renewal Mission - Smart Cities

Text books

- 1. Shukla, V. (1996) Urbanization and Economic Growth, Himalaya Publishers Pvt. Ltd (New Delhi).
- 2. Robert L Bish and Hugh O Nourse (1975), Urban Economics and Policy Analysis, McGraw Hill Kogakusha Ltd (Tokyo).

References

- 1. O' Sullivan (2012), Urban Economics, McGraw Hill Higher Education (Boston).
- 2. Edwin S. Mills. (1987). Handbook on Regional and Urban Economics, Volume 2: Urban Economics. North-Holland (Amsterdam).
- 3. Duranton, G., & Strange, W. C. (1986). Handbook of regional and urban economics: applied urban economics (Vol. 3). Elsevier.

Web resources

1. https://link.springer.com/bfm:978-1-349-15661-0/1.pdf

- 2. https://www.academia.edu · Urban_economics_Arthur_O..
- 3. https://www.ysk-books.com, show, book, regional-a..

co/P o	P01	P02	P03	P04	PO5	PO6	P07	PO8	P09	PO10	P011	P012	PS01	PS02	PSO3	PS04	PSO5
CO1	3				3	3			2	2	3		1		3	2	2
CO2	3	2	2		3				2		3				3	2	2
CO3	3								2	2	3	2	1		3	2	2
CO4	3				3	3			2		3				3	2	2
CO5	3	2		1	3				2		3	2			3	2	2

Semester- II	23ECOE205 : RESOURCE ECONOMICS
DCE 2.4	(Optional)

Credits:3

Learning Objectives:

- 1. To trace the resources in the country
- 2. To understand the quality of the available natural resources.

Course Outcomes (COs):

Upon Completion of this course, the students will be able to

S.No	Course Outcomes
CO1	Ability to understand land resources in India and the issues related to it
CO2	Assess the availability of Forest resources and understand the methods to conserve the resources
CO3	Understand the water resources in the country and related environmental issues
CO4	Trace the mineral resources in the country
CO 5	Ability to know about conservation of Natural Resources

Unit I: Introduction

Land Resources in India - Types of soil- Land resource Classification -Forest ,Barren land, Pastures and grazing land, cultural Waste Land, Fallow Land, Agricultural Land -Net Sown Area - Land degradation and soil Erosion-Preventive Measures.

Unit II: Role of Resources in Economic Development

Forest Resources-Role of Forests in Economic Development-Forest cover in India-Deforestation-Effects of Deforestation-Urban Forestry - Objectives of Urban Forestry- Social Forestry-Constraints in Social Forestry - Collective Participatory Forest Management – Recent National Forest Policy Act

Unit III: Water Resources in India

Water Resources in India -Surface Water –Ground Water –Water Demand and Utilisation- Water Resource Planning- Multi –objective Approach-Benefit Cost Ratio-Capital outlay-Environmental Impact Assessment (EIA)-Manageability of the project-Sustainable Water Management-Recent National Water Policy

Unit IV: Mineral Resources

Mineral Resources- Metallic Minerals-Non Metallic Minerals –Mineral Fuels-Environmental Costs of Extracting Mineral Resources-Environmental Impacts of Mineral Resource Extraction and Use-Mineral Conservation and Development Rules (1988)

Unit V: Conservation and Management of Natural Resources

Conservation and Management of Natural Resources - Meaning and objectives of Conservation. Conservation of Renewable Resources: Soil conservation- Water conservation-Forests conservation-Fish Conservation-Biodiversity Conservation. Conservation of Non Renewable Resources: Energy Conservation-Mineral Conservation

Text Books:

- 1. M.L.Jhingan, Chandar K.Sharma (2007) Environmental Economics Theory, Management and Policy, Vrindha Publications, New Delhi
- 2. G.Paneerselvam (2008) Economics of Natural Resources in India , Abhijeet Publications ,New Delhi

Reference Books:

- 1. Jon .M.Conrod (2010), Resource Economics , Cambridge University Press, U.K
- 2. John C.Bergstrom & Alan Randall (2010), Resource Economics –An Economic Approach to Natural Resource and Environmental Policy, Edward Elgar Pub,Ltd
- 3. Judith Rees (2019) Natural Resources Allocation Economics and Policy,Routledge,UK

Web Resources:

 <u>https://www.india.gov.in/topics/environment-forest/natural-resources</u>
 <u>https://ibm.gov.in/writereaddata/files/09182018162439Mineral%20Scenario%</u> <u>20pdf.pdf</u>

CO/P O	P01	PO2	PO3	PO4	PO5	PO6	PO7	PO8	60d	P010	P011	P012	PS01	PS02	PS03	PS04	PSO5
CO1	3	2		1	3	3	1	1	2		3	2	1		3	2	2
CO2	3	2	2		3	3		1	2	2	3	2	1	1	3	2	2
CO3	3	2		1		3			2		3	2	1			2	2
CO4	3	2		1	3	3	1	1	2		3	2	1	1	3	2	2
CO5	3	2		1	3	3	1	1	2		3	2	1	1	3	2	2

Learning Objectives

- 1. To understand the insights to the economic theory in the design and implementation of public policy related to the social sectors.
- 2. This course finds roots in social economics, health, education and the problem of discriminations in the society.

Course Outcomes (Cos):

Upon Completion of this course, the students will be able to

CO Code	Course Outcomes
CO1	to define social economics and illustrate the role of the government in creating equality in human societies.
CO2	to explain and elaborate the concept of welfare economics with specific reference to healthcare.
CO3	to illustrate and discuss the importance of education in creating human capital; private and social demand for education.
CO4	To recall, classify and compare the various sources of social discrimination, causes and consequences of the same.
C05	To examine, estimate and illustrate the several components of human development index and the importance of these indices on development of the social sector.

Unit I: Introduction – Social Economics

Introduction of Social Economics: Definition – Equality in Human Societies – Role of government – Social security – Subsidies – Social banking – Refugees, Slavery and Beggary. - Principles of Social Doctrines: Marx, Pope and Gandhi.

Unit II: Economics of Health

Concept of Welfare Economics – Health dimensions – Determinants of Health - Demand and Supply of Health care – Financing of healthcare - Concept of human life value – Inequalities in health – Healthcare constraints.

Unit III: Economics of Education

Education as an instrument of economic growth – Concept of human capital – components of human capital – Private and Social demand for education – Educational planning and economic growth – Manpower requirements approach – Human resource mobilization and utilization.

Unit IV: Social Discrimination

Sources of Social Discrimination – Class, Caste, Religion, Race and language – Monopoly power - Consumerism – Provision of information – Economic crimes and their prevention – Violation of Human Rights – Terrorism: Causes and consequences – Need to control terrorism.

Unit V: Human Development Index

Indicators – Life expectancy, Per Capita income and Education - Index – HDI Reports, UNDP - Dimensions - Poverty – Inequality – Gender.

Text Books

- 1. Seeta Prabhu, K. Economic Reform and Social Sector Development, Sage Publications, New Delhi, 2012.
- 2. Dreze, Jean and Amartya Sen, Hunger and Public Action, Clarendon Press, London. 1999

Reference Books

- 1. Baumol, W J, & Oates, W E, Theory of Economical Policy, Cambridge University Press, 2000.
- 2. Culyer, A.J., The Economics of Social Policy, Martin Robertson and Co. Ltd., London. 1993.
- 3. Douglass C. North and Roger Leroy Miller, The Economics of Public Issues, Harper & Row Press, New York. 2001.

Web Resources

- 1. https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad= rja&uact=8&ved=2ahUKEwjI4KeSh
- https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad= rja&uact=8&ved=2ahUKEwjI4KeSh-
- 3. https://link.springer.com/content/pdf/bfm:978-1-349-15632-0/1.pdf

co/P o	P01	PO2	P03	PO4	PO5	PO6	P07	PO8	60d	PO10	P011	P012	PS01	PS02	PSO3	PS04	PSO5
CO1	3	2	2	1	3	3		1	2				1		3	2	2
CO2	3	2		1	3	3		1	2				1		3	2	2
CO3	3	2		1		3		1		2			1		3	2	
CO4	3	2	2	1		3	1	1		2			1		3	2	2
CO5	3	2		1	3	3	1	1	2	2			1		3	2	2

Semester- III 23ECOE306: ENTREPRENEURIAL DEVELOPMENT DCE 3.5 (Optional) Credits:3

Learning Objectives:

1. To understand the concept of Entrepreneurship

2. To understand the responsibilities and process of an entrepreneur

Course Outcomes (COs):

Upon Completion of this course, the students will be able to

S. No	Course Outcomes
CO1	Understand the concept of Entrepreneurship
CO2	Ability to learn the factors involved in business
CO3	Identify the process involved in the project
CO4	Assess the methods of Project Appraisal
CO5	Acquire the knowledge about source of Finance

Unit I: Introduction

Introduction of Concepts Concept of Entrepreneur – characters of an Entrepreneur – distinction between Entrepreneur & Manager – function & Types of Entrepreneur. Concept Entrepreneurial ship – Role in Economic Development, Women Entrepreneurial ship – function, problems recent trends.

Unit II: Entrepreneurial Growth

Entrepreneurial Growth Economic & Non-Economic Factors – Role of Government Entrepreneurial Motivation – Theories – factors- Entrepreneurial Development – Need, Objectives, Phases Evaluation.

Unit III: Project Formulation and Selection

Projects & Entrepreneur Meaning – Identification – Selection- Project Formation: Meaning and Significance - Contents of a Project Report – Formation– Planning Commission Guidelines.

Unit IV: Project Appraisal

Project Appraisal and Finance Concept - methods of Appraisal- Need for financial Planning – Source of finance - Capital structure – Capitalisation –venture capital – Export Finance.

Unit V: Institutional Finance

Institutional Finance to Entrepreneurs Commercial Bank, Industrial Development of India (IDBI),Industrial Finance Corporation of India (IFCI),Industrial Credit & Investment Corporation of India (ICICI) Unit Trust of India (UTI), State Financial Corporation's (SFCs),State Industrial Development Corporation (SIDCO) Exam Bank of India- Institutional Support to Entrepreneur National Small Industries Corporation Ltd.(NSIC)- Small Industries Development Organisation (SIDO)- Small Scale Industries Board (SSIB)- State Small Industries Development Corporations (SSICS)- Small Industries Service Institutes (SISI)- District Industries Centre (DICs).

Text Books:

- Dr.S.S. Khanka (2011), Entrepreneurial Development, S.Chand & Company Ltd, Ram Nagar New Delhi. State Integrated Board of Studies – Economics PG 58.
- 2. Poornima M. Charantimath, (2007), Entrepreneurship Development and Small Business Enterprises, Pearson Education, New Delhi.

Reference Books:

- 1. Vasant Desai, (2008), Dynamics of Entrepreneurial Development and Management, Himalaya Publishing House, New Delhi.
- 2. Robert D. Hisrich, Michael P. Peters and Dean A. Shepherd,(2007) Entrepreneurship, Tata McGraw Hill, New Delhi.
- 3. Khanka, S.S. (2007), Entrepreneurial Development, S.Chand & Company, New Delhi.

Web Resources:

- 1. <u>https://www.startupindia.gov.in/content/sih/en/reources/l-d-listing.html</u>
- 2. <u>https://elearningindustry.com/entrepreneurship-and-elearning-top-5-</u> <u>elearning-options-newbie-entrepreneurs</u>

co/P o	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	P011	P012	PS01	PS02	PS03	PS04	PSO5
C01					3		1		2							2	2
CO2	3	2		1	3	3		1	2				1		3	2	2
CO3	3	2		1	3	3	1	1	2		3	2	1		3	2	2
CO4	3	2		1	3	3	1	1	2		3	2	1		3	2	2
CO5	3	2			3		1	1	2		3		1		3	2	

Annexure – IV

(Resolution - 7)

Semester- II SEC 2.6

23TSSC200: ACADEMIC WRITING SKILLS Credits:2

Learning Objectives:

By introducing the course, it is intended to:

LO1: Enable the students to acquire the skills of writing in English for literary and other purposes

LO2: Enhance the students master the art of writing in English to fulfill their academic and professional goals

LO3: Make the students understand the strategies involved in developing effective and coherent paragraphs

LO4: Make the students get acquainted with the conventions of academic writing in English

LO5: Help them analyse different sentence structures

Course Outcomes (COs) :

At the end of the course, the students will be able to:

- CO1: Construct a variety of flawless sentences in English using appropriate grammatical structures
- CO2: Earn their skills in Technical Writing
- CO3: Draft effective research proposals/reports
- CO4: Exploit the resources of English language for professional development
- CO5: Develop effective introduction and conclusion

Unit I

- 1. Organizing the Theme
- 2. Introduction and Conclusion

Unit II

- 1. The Paragraph
- 2. Logic

Unit III

- 3. Deadwood
- 4. Inflated Diction
- 5. Weak Word
- 6. Cliche

Unit IV

- 7. Sentence Structure: Sentence Fragment, Run-together Sentence, and Comma Splice
- 8. Sentence Structure: Faulty Pronoun Reference
- 9. Sentence Structure: Faulty Parallelism
- 10. Correct Usage
- 11. Agreement

Unit V

Punctuation and Mechanics

The faculty will impart Contemporary Contours at the end of each course. This Contemporary Contours will not be credited in the examinations.

Text Book:

1. Kinsella, Paul. The Techniques of Writing. New York: Harcourt, 1975.

Supplementary Reading:

- 1. Krammer. G. Melinda, et al. *Prentice Hall Handbook for Writers*. New Jersey, 1995.
- 2. Langan, John. Sentence Skills with Readings. New York: McGraw-Hill, 2001.
- 3. Mohan, Krishna & Meenakshi Raman. *Effective English Communication*. New Delhi: McGraw-Hill, 2000.

Semester- III 23TSSC300: EMPLOYABILITY SKILLS Credits:2

Learning Objectives:

- C1 To learn about the employability skills
- C2 To understand dimensions of task oriented skills
- C3 To study on critical problem-solving techniques
- C4 To develop employability skills
- C5 To understand the logical and reasoning skills

Course Outcomes (COs): On completion of this course, students will;

- CO1 Acquire employability skills
- CO2 understand dimensions of task oriented skills
- CO3 study on critical problem-solving techniques
- CO4 develop employability skills
- CO5 understand the logical and reasoning skills

UNIT I INTRODUCTION TO EMPLOYABILITY SKILLS

Meaning – Definition – Hard skills and soft skills –Employability skills and vocational skills – Employability and employment – Employability attributes.

UNIT II UNPACKING EMPLOYABILITY SKILLS

Embedded employability skills – Dimensions of Competency – Task skills –Task Management skills – Contingency Management skills – Job/Role Environment skills.

UNIT III INTER – RELATIONSHIPS OF EMPLOYABILITY SKILLS

Communication – Team work – Problem solving – Initiative and Enterprise – Planning and Organizing – Self management – Learning – Technology.

UNIT IV RESUME WRITING

Meaning – Features of good resume – Model (Exercise). Etiquettes – Dress, Cleanliness, Etiquettes to be followed inside the employment seeking process.

UNIT V Arithmetic and Logical Reasoning Skills – Exercise.

Reading List:

- 1. https://www.jobjumpstart.gov.au/article/what-are-employability-skills
- 2. https://www.simplilearn.com/why-are-employability-skills-important-article
- 3. https://blog.hubspot.com/marketing/employability-skills
- 4. https://www.indeed.com/career-advice/finding-a-job/employability-skills

References Books:

- 1. Soft Skills, Dr. K. Alex
- 2. Winning Interview Skills, Complied & Edited by J.K. Chopra.
- 3. A Modern Approach to Verbal and Non- Verbal Reasoning, R. S. Aggarwal.
- 4. Fafinski, S., Finch, E. (2014). Employability Skills for Law Students. United Kingdom: OUP Oxford.

- 5. Trought, F. (2017). Brilliant Employability Skills: How to Stand Out from the Crowd in the Graduate Job Market. United Kingdom: Pearson Education Limited.
- 6. Chaita, M. V. (2016). Developing Graduate Employability Skills: Your Pathway to Employment. United States: Universal Publishers.

Annexure – V

(Resolution - 9)

Semester- IV 23ECOC405: COST BENEFIT ANALYSIS Credits:2

LEARNING OBJECTIVES

- C1: To understand the use and applications of Cost-Benefit Analysis in the investment projects.
- C2: To gain knowledge on the methods of measuring cost and benefits in the environmental problems
- C3: To gain knowledge on the professional competency skill in the field of Applied Economics.

COURSE OUTCOMES (COs): On completion of this course, students will;

- CO1 Acquire and develop employability skills
- CO2 Understand business dimensions of task oriented skills
- CO3 Gain knowledge on the evaluation techniques of business organizations
- CO4 Gain knowledge on the methods of measuring cost and benefits in the environmental problems

Unit I - Project Formulation and Evaluation

Project Planning and Formulation - Objectives and Techniques of Evaluation.

Unit II - Project Evaluation Techniques

Non-Discounting Criteria: Payback period, Average rate of return – Discounted Cash flow analysis; Net Present Value, Benefit-Cost Ratio, Internal Rate of Return.

Unit III - Social Cost Benefit Analysis

Financial Appraisal Vs Economic Appraisal – Objectives of Social Cost Benefit Analysis – Social Discount rate – Social Cost an Social Benefit.

Unit IV - Environmental Evaluation methods I

Components of Environmental Evaluation - Valuing Environmental Costs and Benefits - Types of Values - Use and Non-use Values - Measures of Value: Direct and Indirect.

Unit V - Environmental Evaluation methods II

State Preference approach: The Contingent Valuation Method (CVM) – Revealed Preference approach: The Travel Cost Method (TCM), Hedonic pricing Method (HRM) – Choice of Techniques.

Text Books

- 1. Chandra Prasanna (2000). *Projects: Planning, Analysis, Selection, Implementation and Review* [Tata McGraw-Hill, New Delhi]
- 2. Pitale, R.L. (1982). Project Appraisal Technique [Oxford and IBH, New Delhi]
- 3. Puttaswamiah, K. (1978). Fundamentals of Project Evaluation [Oxford & IBH, New Delhi]

4. Guy Garrod and Kenneth G. Willis (1999), *Economic Valuation of Environment: Methods and Case studies* [Eward Elgar Publishing Limited NY]

Reference Books

- 1. Das Gupta & D.W. Pearce (1972). Cost-Benefit Analysis in Theory and Practice [ELBS, London]
- 2. John A. King (1967). Economic Development, Projects and their Appraisal [John Hopkins, London]
- 3. Little M.D. and Mirrlees, J. (1974). *Project Appraisal and Planning for Developing Countries* [Oxford and IBH, New Delhi]
- 4. Sonachalam, K.S. (1980). *Benefit-Cost Evaluation of Industrial Projects* [Oxford & IBH, New Delhi]
- 5. David A. Anderson (2016), Environmental Economics and Natural Resource Management Third Edition, New York: Routledge ; (Chapter. 10)