ADAMAS UNIVERSITY

SCHOOL OF LIBERAL ARTS AND CULTURAL STUDIES

DEPARTMENT OF ECONOMICS

M.SC(ECONOMICS) PROGRAMME

(2023-2025)

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ADAMAS UNIVERSITY, KOLKATA
SCHOOL OF LIBERAL ARTS AND CULTURAL STUDIES
DEPARTMENT OF ECONOMICS

NAME OF THE PROGRAMME:

MASTER OF SCIENCE IN ECONOMICS

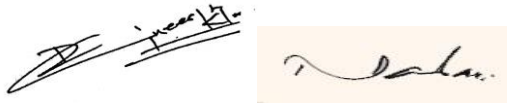
PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

PEO 01: To prepare graduates for an advanced career in the field of Economics and Economic research fulfilling the global and domestic industry requirements

PEO 02: To train the graduates with essential and advanced skills through interdisciplinary, innovative and flexible learning pedagogy

PEO 03: To inculcate values and ethics among them and prepare socially responsible graduates

PEO 04: To embed lifelong learning skills and professional traits among the graduates



HOD **DEAN / SCHOOL CONCERNED**

ADAMAS UNIVERSITY, KOLKATA
SCHOOL OF LIBERAL ARTS AND CULTURAL STUDIES
DEPARTMENT OF ECONOMICS

NAME OF THE PROGRAMME:
MASTER OF SCIENCE IN ECONOMICS

POST GRADUATE ATTRIBUTE / PROGRAMME OUTCOMES (PO)

At the end of the Programme the students will be able to:

PGA 01 / PO 01: Domain specific knowledge and skills/ Acquire knowledge of advanced economic theories and adequately evaluate the issues related to economy, public policy, business and society

PGA 02 / PO 02: Problem Analysis and Critical thinking / Demonstrate an ability to construe data and information and critically examine the outcomes in relation to economic theories

PGA 03 / PO 03: Modern IT Tools / Efficiently adopt software (s) in conducting advanced analysis of economic data and other research oriented activities

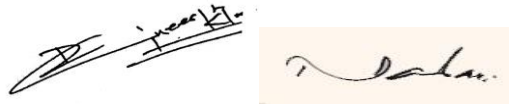
PGA 04 / PO 04: Business and Society / Appraise the importance of economics as a discipline in context of business and society

PGA 05 / PO 05: Environment and sustainability / Draw inferences on concerns emerging from environmental changes as implied to society at large

PGA 06 / PO 06: Ethics / Hone ethical behavior and become sensitive towards the society

PGA 07 / PO 07: Leadership and Team work / Improve Leadership skills via developing strong emotional aptitude and become a lifelong leaner.

PGA 08 / PO 08: Communication: Develop verbal and non-verbal communication skills for a successful career in Research, Industry, Business and Entrepreneurship



HOD **DEAN / SCHOOL CONCERNED**

POST GRADUATE PROGRAMME STRUCTURE

(UNDER CHOICE BASED CREDIT SYSTEM)

M.SC. in ECONOMICS 2023-25

SL. NO	TYPE OF COURSE	CODE	TITLE OF THE COURSE	Contact Hours per Week				REMARKS
			SEMESTER - I	**L**	**T**	**P**	**C**	
1	HC	ECO21201	MICROECONOMICS - I	3	1	0	4	
2	HC	ECO21202	MACROECONOMICS - I	3	1	0	4	
3	HC	ECO21203	MATHEMATICAL ECONOMICS	3	1	0	4	
4	HC	ECO21204	DEVELOPMENT ECONOMICS - I	3	1	0	4	
5	HC	ECO21205	INDIAN ECONOMY	3	1	0	4	
			SUB TOTAL				**20**	
			SEMESTER – II					
6	HC	ECO21223	MICROECONOMICS – II	3	1	0	4	
7	HC	ECO21207	MACROECONOMICS – II	3	1	0	4	
8	HC	ECO21208	INTERNATIONAL ECONOMICS	3	1	0	4	
9	HC	ECO21209	ECONOMETRICS	3	1	0	4	
10	HC	ECO21210	DEVELOPMENT ECONOMICS - II	3	1	0	4	
	INT	ECO24220	SUMMER INTERNSHIP	4-6 Weeks				
			SUB TOTAL				**20**	
			SEMESTER - III					
11	HC	ECO21211	RESEARCH METHODOLOGY	3	1	0	4	
12	SC		SPECIAL PAPER -A	3	1	0	4	
13	SC		SPECIAL PAPER -B	3	1	0	4	
14	SC		SPECIAL PAPER –C	3	1	0	4	
16	INT	ECO24220	SUMMER INTERNSHIP	Evaluation			4	
17	MDS	ECO25223	DISSERTATION (NON-CREDIT)				0	
			SUB TOTAL				**20**	

			SEMESTER - IV					
18	HC	ECO21222	ECONOMICS OF SOCIAL ISSUES	3	1	0	4	
19	SC		SPECIAL PAPER - D	3	1	0	4	
20	SC		SPECIAL PAPER (One paper from the other track))	3	1	0	4	
21	MDS	ECO25223	DISSERTATION	0	8	0	8	
			SUB TOTAL				**20**	
TOTAL REQUIRED CREDIT							**80**	
TRACK I: ECONOMETRIC AND STATISTICAL THEORY AND APPLICATIONS								
A	SC	ECO21212	Advanced Econometric Methods	3	1	0	4	
B	SC	ECO21213	Econometric Analysis with Data (using softwares like STATA)	2	1	1	4	
C	SC	ECO21214	Multivariate Data Analysis With Applications	3	1	0	4	
D	SC	ECO21215	Analysis of Big Data	3	1	0	4	
TRACK II: FINANCE THEORY AND APPLICATIONS								
A	SC	ECO21216	Financial Institutions and Markets	3	1	0	4	
B	SC	ECO21217	Corporate Finance	3	1	0	4	
C	SC	ECO21218	Principles of Investment Banking	3	1	0	4	
D	SC	ECO21219	Financial Economics	3	1	0	4	

M.Sc. in Economics Syllabus
First Year
Semester I
Microeconomics I

ECO 21201	MICROECONOMICS I	L	T	P	C
Version 1.0	Contact Hours - 60	3	1	0	4
Pre-requisites/Exposure	Any Undergraduate degree (in 10+2+3 structure) with Economics in UG level				
Co-requisites	--				

Course Objectives:
Microeconomics I is the application of microeconomic tools studies at UG level to advanced as well as interdisciplinary areas. It aims to place the learner in the research industry or in academic profession. It is the basis of policy making as well as corporate decision making.

Course Outcomes:

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

CO1. **Discuss** the Elements, Tools & Methods of Microeconomics.
CO2. **Identify** the Fundamentals of Micro level transactions.
CO3. **Design** strategy to optimize objective functions.
CO4. **Choose** the Type and Role of market structure for creation of equilibrium price and output.

Course Content

Unit 1: Consumer Behaviour

Consumer's equilibrium: utility maximization and expenditure minimization, Marshallian and Hicksian demand functions, indirect utility function and expenditure function, Roy's identity and Shephard's lemma, duality and Slutsky equation, revealed preference: WARP and SARP

Unit 2: Theory of Firm

Production set, input requirement set, production function – Cobb-Douglas and CES functions, cost minimization and cost function, Shephard's lemma and input demand functions, duality between cost and production, long run cost function

Unit 3: General Equilibrium and Welfare Economics

(a) General equilibrium: 2X2 exchange economy with Edgeworth Box diagram, 2X2 model with production, competitive equilibrium
(b) Welfare economics: Pareto optimality in resource allocation and commodity distribution, role of market structure, externality and public goods

Pedagogy:

The faculty may choose pedagogies suitable to the nature of course from following:

- Student Lecture and Presentation
- Case Study Analysis

- Teaching-learning Strategy using Multimedia
- Mind Mapping
- Chunking strategy
- Z to A Approach
- Collaborative and cooperative learning
- Anchored Instruction
- Peer Tutoring
- Microteaching and Simulated Teaching
- Blended learning
- Problem Based Learning (PBL)
- Rotation Model
- Flex Model
- Enriched Virtual Model

Modes of Examination: Assignment /Quiz / Project / Presentation / Course Work / Article reviews / Book Reviews / Reports / Written Exam / Jury / Survey / / any other method that suits to assess the given course outcome

Examination Scheme:

Components	Continuous Internal Assesment	End Term
Weightage (%)	**50**	**50**

Suggested Readings:

- Hal R. Varian. Microeconomic Analysis, W W Norton & Company, 3rd edition 2010.
- Mas-Colell, M. Whinston and J Green. *Microeconomic Theory*, Oxford University Press, 1995.
- Nicholson W. and Snyder C. (2017). Microeconomic Theory: Basic Principles and Extensions. Cengage. 12th Edition or latest.

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs			
	Course Outcomes (COs)	**Mapped Program Outcomes**	**Mapped to Levels**
CO1	**Discuss** the Elements, Tools & Methods of Advanced Microeconomics.	**PO1, PO2, PO4,PO7, PO8**	**L1, L2**
CO2	**Identify** the Fundamentals of Micro level transactions.	**PO1, PO2, PO4,PO7, PO8**	**L2, L3**
CO3	**Design** strategy to optimize objective functions.	**PO1, PO2, PO4,PO7, PO8**	**L3, L4, L5**
CO4	**Choose** the Type and Role of market structure for creation of equilibrium price and output.	**PO1, PO2, PO4,PO7, PO8**	**L5, L6**

		Domain specific knowledge and skills/ Acquire knowledge of advanced economic theories and adequately evaluate the issues related to economy, public policy, business and society	Problem Analysis and Critical thinking / Demonstrate an ability to construe data and information and critically examine the outcomes in relation to economic theories	Modern IT Tools / Efficiently adopt software (s) in conducting advanced analysis of economic data and other research oriented activities	Business and Society / Appraise the importance of economics as a discipline in context of business and society	Environment and sustainability / Draw inferences on concerns emerging from environmental changes as implied to society at large	Ethics / Hone ethical behavior and become sensitive towards the society	Leadership and Team work / Improve Leadership skills via developing strong emotional aptitude and become a lifelong leaner.	Communication: Develop verbal and non-verbal communication skills for a successful career in Research, Industry, Business and Entrepreneurship
Course Code	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
ECO21201	Microeconomics-I	3	3	_	2	_	_	1	2

1=weakly mapped
2= moderately mapped
3=strongly mapped

ECO21202	MACROECONOMICS - I	L	T	P	C
Version 1.0	Contact Hours - 60	3	1	0	4
Pre-requisites/Exposure	UG level knowledge of Macroeconomics				
Co-requisites	--				

Course Objectives

The objective of the course is to interpret workings of open economy macroeconomics, advanced concepts like aggregate demand and aggregate supply, consumption behaviour, investment behaviour, macroeconomics of developing countries and overlapping generation model. The students should be able to understand the propositions of different schools of thought that dominate modern macroeconomics theory and develop mathematical models and rigorous analytical frameworks. The students should also be able to discuss the different macroeconomic tools used in policy making.

Course Outcomes

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

CO1. **Explain** different open economy macroeconomic variables.
CO2. **Develop** rigorous mathematical vigor in understanding theoretical models.
CO3. **Examine** macroeconomic tools used in policy making.
CO4. **Recognize** the workings of global macroeconomic institutions and their role in policy making.

Course Content

Unit 1: Open Economy Macroeconomics 10hrs.
Balance of payments, Exchange rate systems, Fixed vs. Flexible Exchange Rate; Perfect and Imperfect Capital Mobility; Mundell-Fleming model: Monetary and Fiscal Policy; Expectations and Exchange Rates, Monetary approach to Balance of Payments

Unit 2: Keynesian Aggregate Demand & Supply and new-classical economics 15hrs.

Models of aggregate supply, Phillips curve, Adaptive and Rational Expectations, Policy evaluation and the Lucas critique, New classical analysis, basic concept of Real business cycles

Unit 3: Neo-Keynesian Macroeconomics 20hrs.
Neo-Keynesian models of price and wage rigidities –efficiency wage models- New Keynesian Theory of Money, Credit and Monetary Policy

Unit 4: Post-Keynesian theories 15hrs.
Kalecki's models of effective demand and monopoly markets, Structuralist models

Pedagogy:

The Faculty may choose pedagogies suitable to the nature of course from following:

- Student Lecture and Presentation

- Case Study Analysis
- Teaching-learning Strategy using Multimedia
- Mind Mapping
- Chunking strategy
- Z to A Approach
- Collaborative and cooperative learning
- Peer Tutoring
- Simulated Teaching
- Blended learning
- Problem Based Learning (PBL)
- Rotation Model
- Flex Model

Modes of Examination: Assignment /Quiz / Project / Presentation / Course Work / Article reviews / Book Reviews / Reports / Written Exam / Jury / Survey / / any other method that suits to assess the given course outcome

Examination Scheme:

Components	Continuous Internal Assesment	End Term
Weightage (%)	**50**	**50**

Text Books

1 .Lectures on Macroeconomics. Blanchard and Fischer. Phi Learning; 1st edition (2009)
2. Advanced Macroeconomics. David Romer. Tata McGraw - Hill Education; 4th edition (2011)
3. Macroeconomics: Theories & Policies. R. Froyen. Pearson Education; 10th Edition (2013)

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping of COs and POs			
	Course Outcomes (COs)	**Mapped to POs**	**Mapped to Levels**
CO1	**Explain** different open economy macroeconomic variables	**PO1, PO2, PO3**	**L1, L2**
CO2	**Develop** rigorous mathematical vigor in understanding theoretical models.	**PO1, PO2, PO6, PO8**	**L2, L3, L4**
CO3	**Examine** macroeconomic tools used in policy making.	**PO1, PO4 PO2, PO6, PO7, PO8**	**L3, L4, L5**
CO4	**Recognize** the workings of global macroeconomic institutions and their role in policy making.	**PO1, PO4 PO2, PO6, PO7, PO8**	**L5, L6**

		Domain specific knowledge and skills/ Acquire knowledge of advanced economic theories and adequately evaluate the issues related to economy, public policy, business and society	Problem Analysis and Critical thinking / Demonstrate an ability to construe data and information and critically examine the outcomes in relation to economic theories	Modern IT Tools / Efficiently adopt software (s) in conducting advanced analysis of economic data and other research oriented activities	Business and Society / Appraise the importance of economics as a discipline in context of business and society	Environment and sustainability / Draw inferences on concerns emerging from environmental changes as implied to society at large	Ethics / Hone ethical behavior and become sensitive towards the society	Leadership and Team work / Improve Leadership skills via developing strong emotional aptitude and become a lifelong leaner.	Communication: Develop verbal and non-verbal communication skills for a successful career in Research, Industry, Business and Entrepreneurship
Course Code	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
ECO21202	Macroeconomics -I	3	3	1	1	-	3	3	3

ECO21203	MATHEMATICAL ECONOMICS	L	T	P	C
Version 1.0	Contact Hours - 60	3	1	0	4
Pre-requisites/Exposure	Any Undergraduate degree (in 10+2+3 structure) with Economics in UG level				
Co-requisites	--				

Course Objectives

This paper introduces students to the advanced tools, terminology and analytic principles used in economics, the application of these conceptual tools to several economic agent's decision oriented policy issues. The decisions of buyers and sellers and their interaction in market transactions will be analyzed. This also explores how different market structures can shape economic results, and how markets can sometimes (but not always) help society achieve desirable outcomes.

Course Outcomes

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

CO1. **Develop** the knowledge of applying real analysis, and linear algebrato solve real world economic problems.

CO2.**Apply** static optimization techniques to frame economic models and offer solutions.

CO3. **Analyze** equilibrium solutions using dynamic optimization models.

CO4. **Develop** the idea of using differential equations in solving economic problems and understanding stability issues to analyze equilibrium outcomes to explain price quantity behaviours.

Course Content

Unit 1: Matrix Algebra

Matrix, Determinants, Linear Equations and Cramer's rule, Matrix inversion, Applications: Input-Output moels

Unit 2: Static Optimization with Constraints

Linear Programming, Convex Set theory, Non-linear Programming, Lagrangean Multiplier, Kuhn-Tucker conditions, Envelope theorem, Application in the theory of the Firm

Unit 3: Differential Equations and Stability

2 x 2 Linear Differential Equation System and its solution, Rest point and its stability analysis

Unit 4: Optimal Control Theory

Maximum Principle, Dynamic Programming

Unit 5: Introduction to Mathematical Analysis

Pedagogy:

The Faculty may choose pedagogies suitable to the nature of course from following:

- Student Lecture and Presentation
- Case Study Analysis
- Teaching-learning Strategy using Multimedia
- Mind Mapping

- Chunking strategy
- Z to A Approach
- Collaborative and cooperative learning
- Anchored Instruction
- Peer Tutoring
- Microteaching and Simulated Teaching
- Blended learning
- Problem Based Learning (PBL)
- Rotation Model
- Flex Model
- Enriched Virtual Model

Modes of Examination: Assignment /Quiz / Project / Presentation / Course Work / Article reviews / Book Reviews / Reports / Written Exam / Jury / Survey / / any other method that suits to assess the given course outcome

Examination Scheme:

Components	Continuous Internal Assesment	End Term
Weightage (%)	**50**	**50**

Text Books:

T1. Mathematics for Economists. Carl P. Simon, L Blume. Viva Norton (Student edition). Reprint 2015.

T2. Fundamental Methods of Mathematical Economics. A. C. Chiang, and Wainwright. McGraw Hill Education (India) Private Limited; 4th edition (2013)

T3. Mathematical Optimization and Economic Theory. Michael D. Intriligator. PHI Learning (SIAM); 2012

Reference Books:

R1. Optimization in Economic Theory. Avinash K. Dixit. Oxford University Press; 2nd Revised edition (2010)

R2. Linear Algebra. Hadley. Narosa Book Distributors (2002)

R3. Real Analysis. H. L. Royden. Prentice Hall India, 4th edition (2011)

R4. T2. Essential Mathematics for Economic Analysis. Knut Sydsaeter, Peter J Hammondand , and Arne Strøm. Pearson India; 4th edition (2013).

R5. Elements of Dynamic Optimization. Chiang, Alpha. C. Sarat Book Distributors (2012)

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs			
	Course Outcomes (COs)	**Mapped Program Outcomes**	**Mapped to Levels**
CO1	**Develop** the knowledge of applying real analysis, and linear algebra to solve real world economic problems.	**PO1, PO2, PO7, PO8**	**L1, L2, L3**
CO2	**Apply** static optimization techniques to frame economic models and offer solutions.	**PO1, PO2, PO7, PO8**	**L2, L3, L4**
CO3	**Analyze** equilibrium solutions using dynamic optimization	**PO1, PO2, PO7,**	**L3, L4,**

	models.	**PO8**	**L5**
CO4	**Develop** the idea of using differential equations in solving economic problems and understanding stability issues to analyze equilibrium outcomes to explain price quantity behaviours.	**PO1, PO2, PO7, PO8**	**L5, L6**

		Domain specific knowledge and skills/ Acquire knowledge of advanced economic theories and adequately evaluate the issues related to economy, public policy, business and society	Problem Analysis and Critical thinking / Demonstrate an ability to construe data and information and critically examine the outcomes in relation to economic theories	Modern IT Tools / Efficiently adopt software (s) in conducting advanced analysis of economic data and other research oriented activities	Business and Society / Appraise the importance of economics as a discipline in context of business and society	Environment and sustainability / Draw inferences on concerns emerging from environmental changes as implied to society at large	Ethics / Hone ethical behavior and become sensitive towards the society	Leadership and Team work / Improve Leadership skills via developing strong emotional aptitude and become a lifelong leaner.	Communication: Develop verbal and non-verbal communication skills for a successful career in Research, Industry, Business and Entrepreneurship
Course Code	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
ECO21203	Mathematical Economics	3	3	_	_	_	_	1	2

1=weakly mapped
2= moderately mapped
3=strongly mapped

ECO21204	DEVELOPMENT ECONOMICS - I	L	T	P	C
	Contact Hours - 60	3	1	0	4
Pre-requisites/Exposure	Any Undergraduate degree (in 10+2+3 structure) with Economics in UG level				
Co-requisites	--				

Course Objective:

The course is specifically designed to help students learn and discuss some of the more involved questions for development of an underdeveloped economy. The students had already got an exposure to development problems in their undergraduate courses and at this level hey will be exposed more advanced theoretical and empirical analyses of dual economy, poverty, inequality and agrarian change.

Course Outcomes:

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

CO1. **Develop** theoretical skills to understand the overall trajectory of evolution of modern economics.
CO2. **Understand** the contribution of major economists in the past to building modern economic analysis.
CO3. **Analyze** current economic situations and their solutions.
CO4. **Evaluate** the arguments of each school of economic thought.

Course Content:

Unit 1: Development and underdevelopment (10 hours)

Conceptions of Development- Characteristics of Development, Some historical explanations for differences in development indicators, Underdevelopment as a Coordination Failure, Features of underdevelopment, low rates of economic growth, structural unemployment,

Unit 2: The dual economy models (15 hours)

Dual Economy: The Lewis Model, Ranis-Fei model and their critiques, the concept of Surplus labour and disguised unemployment, Wage-productivity model, rural – urban migration and informal sector, Harris-Todaro model, Rural-urban wage gap: The labour turnover model

Unit 3: Tenancy and Credit (10 hours)

Agrarian institutions, stagnation in backward Agriculture, Tenancy: forms of agricultural land tenure, the role of agriculture in development, Credit markets: The lender's risk hypothesis, monopolistic markets, market fragmentation, credit policy

Unit 4: Macro characteristics of underdeveloped economics (12 hours)

Poverty: Conceptual issues, measurement, functional effects of poverty, vicious circle of poverty hypothesis
Inequality: measurement, Kuznets' inverted-U hypothesis- explanation, inequality and development inter-connections

Policy options on income inequality and poverty, conceptual issues about the relationship between growth and development - Human Development Index, its alternative forms and critique

Unit 5: Strategies of development (8 hours)

Stages of Economic growth: Rostow, Starting Economic development: Big push argument, balanced vs. unbalanced growth, Sustainable Development Goals (SDGs)- Concept

Pedagogy:

The faculty may choose pedagogies suitable to the nature of course from following:

- Student Lecture and Presentation
- Case Study Analysis
- Teaching-learning Strategy using Multimedia
- Mind Mapping
- Chunking strategy
- Z to A Approach
- Collaborative and cooperative learning
- Anchored Instruction
- Peer Tutoring
- Microteaching and Simulated Teaching
- Blended learning
- Problem Based Learning (PBL)
- Rotation Model
- Flex Model
- Enriched Virtual Model

Modes of Examination: Assignment/Quiz/Project/Presentation/ Course Work / Article reviews / Book Reviews / Reports / Written Exam / Jury / Survey / any other method that suits to assess the given course outcome

Examination Scheme:

Components	Continuous Internal Assesment	End Term
Weightage (%)	**50**	**50**

Text Books:

T1. Basu, K. (1997). *Analytical development economics: The less developed economy revisited*. MIT press.
T2. Ray, D. (1998). *Development economics*. Princeton University Press.
T3. Todaro, M. P., & Smith, S. C. (2009). *Economic development*. Pearson education.
T4. Thirlwall, A. P. (1972). *Growth and Development*. MacMillan Press Ltd.
T5. Ranis, G., & Fei, J. C. (1961). A theory of economic development. *The American economic review*, 533-565.

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and Pos			
	Course Outcomes (COs)	**Mapped Program Outcomes**	**Mapped to Levels**
CO1	Develop theoretical skills to understand the overall trajectory of evolution of developing countries	**PO1, PO2, PO4**	**L1, L2**
CO2	Understand the contribution of major sectors in the development outcome of nations.	**PO1, PO2, PO4**	**L2, L3**
CO3	Analyze current problems in different sectors	**PO2, PO6, PO7, PO8**	**L3, L4**
CO4	Evaluate the arguments of various economists	**PO1, PO2, PO4, PO7**	**L4, L5, L6**

ECO21205	INDIAN ECONOMY	L	T	P	C
Version 1.0	Contact Hours - 60	3	1	0	4
Pre-requisites/Exposure	Any Undergraduate degree (in 10+2+3 structure) with Economics in UG level				
Co-requisites	--				

Course Objectives:

This course analyzes the contemporary issues in Indian Economy with primary focus onpostreform period. The course is designed to identify theoretical underpinning of policy making and prepare the students for various sample related research and policy prescriptive jobs. The course discusses the changes in India's growth experience after shift of the trajectory from Planned Economy to Market Economy. Along with detailed outlay of the output and employment pattern and critical analysis of existing policies, it also the outlines problems that plague India as a whole.

Course Outcomes

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

CO1. **Develop** Analytical skills to understand the overall Indian economic experience since independence.
CO2.**Construct** conceptual, analytical and quantitative skills for decision making.

CO3**.Identify** theoretical underpinning of existing policies.

CO4. **Develop** analytical skills for policy design and implementations.

Course Content:

Unit I: Indian Economy Since Independence [10 HRS]

Indian economy at Independence: Five Year Plans: Objective, Achievement and Failures.
Closed to Open Economy; Import Substitution and Export Promotion; Regional Imbalance.

Five Year Plans: Development Goals and Strategies; Structural Constraint; Objective, Achievement and Failures of Planning; NITI AAYOG.
Nehruvian Paradigm vs Gandhian Paradigm; Import Substitution and Export Promotion; Regional Imbalance.

Unit II: New Order of Indian Economy (15 hrs)

Secret Reforms in 1960s; 7th Plan and the Economic Crisis in the 1980s; Early Reforms.
NEP: BoP crisis, NEP Reform. Liberalization, Privatization and Globalization;
Sectoral Reform: Fiscal Reforms, Trade and Payments Reforms, Financial Sector Reforms, Industrial Reforms.

Transition of the State and Economic Reform: Features of Indian State in Planning Era, New Order of State. International position: GATT to WTO, BRICS.

Unit III: Sectoral Performances in Indian Economy (10 hrs)

Agriculture: Growth and Performance; Sectoral Contribution; Green Revolution; increased vulnerability. Food security; procurement and PDS.
Industry: Issues of manufacturing sector and industrial slowdown.
Service: Service Led Growth, Inclusive Growth. Countering unemployment and Employment Generation Schemes. Productivity. Export competitiveness.

Unit 4: Welfare State (10 hrs)
Infrastructure Development; Power Development; Higher Education, Trend and Pattern of Poverty and Inequality in India. Efficiency and Social Justice. Comparative performance of states.
Labor market- Wage inequality, Casualization of labor, social security; Gender and labor market;
Second Generation reform in India: Major public sector reforms since 2014; Demonetization, New Agricultural Reforms, Labor Reforms, New Education Policy.

Pedagogy:

The Faculty may choose pedagogies suitable to the nature of course from following:

- Student Lecture and Presentation
- Case Study Analysis
- Teaching-learning Strategy using Multimedia
- Mind Mapping
- Chunking strategy
- Z to A Approach
- Collaborative and cooperative learning
- Anchored Instruction
- Peer Tutoring
- Microteaching and Simulated Teaching
- Blended learning
- Problem Based Learning (PBL)
- Rotation Model
- Flex Model
- Enriched Virtual Model

Modes of Examination: Assignment /Quiz / Project / Presentation / Course Work / Article reviews / Book Reviews / Reports / Written Exam / Jury / Survey / / any other method that suits to assess the given course outcome

Examination Scheme:

Components	Continuous Internal Assesment	End Term
Weightage (%)	**50**	**50**

Core Text

1. Indian Economy: Performance and Policies. Uma Kapila. Academic Foundation; 15th Revised edition (2015)
2. Prakash, B. A. (2009). The Indian Economy Since 1991: Economic Reforms and Performance. Pearson Education India.

Reference Books

1. Chandra, B., Mukherjee, A., & Mukherjee, M. (2008). India Since Independence. Penguin Books India.
2. Banerjee, Sarmila and Chakrabarti, Anjan. Development and Sustainability: India in a Global Perspective, eds., Springer, (2013)
3. Agarwal, A.N. (2009)- Indian Economy, New Delhi: New Age International Publishers
4. The Indian Economy: Problems and Prospects. Bimal Jalan (ed.); Penguin
5. S Chakraborty. 1987. Development Planning: The Indian Experience. Clarendon Press.
6. I, Judge Ahluwalia. 1985. Industrial Growth in India since the Mid-sixties. Oxford University Press.

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and Pos			
	Course Outcomes (COs)	**Mapped Program Outcomes**	**Mapped to Levels**
CO1	**Develop** Analytical skills to understand the overall Indian economic experience since independence.	**PO1, PO2, PO4, PO8**	**L1, L2**
CO2	**Construct** conceptual, analytical and quantitative skills for decision making.	**PO1, PO2, PO7**	**L2, L3, L4**
CO3	**Identify** theoretical underpinning of existing policies.	**PO1, PO2, PO4, PO8**	**L3, L4**
CO4	**Develop** analytical skills for policy design and implementations.	**PO1, PO2, PO6, PO7**	**L5, L6**

		Domain specific knowledge and skills/ Acquire knowledge of advanced economic theories and adequately evaluate the issues related to economy, public policy, business and society	Problem Analysis and Critical thinking / Demonstrate an ability to construe data and information and critically examine the outcomes in relation to economic theories	Modern IT Tools / Efficiently adopt software (s) in conducting advanced analysis of economic data and other research oriented activities	Business and Society / Appraise the importance of economics as a discipline in context of business and society	Environment and sustainability / Draw inferences on concerns emerging from environmental changes as implied to society at large	Ethics / Hone ethical behavior and become sensitive towards the society	Leadership and Team work / Improve Leadership skills via developing strong emotional aptitude and become a lifelong leaner.	Communication: Develop verbal and non-verbal communication skills for a successful career in Research, Industry, Business and Entrepreneurship
Course Code	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
ECO21209	Indian Economy	3	3	-	2	-	1	2	2

1=weakly mapped
2= moderately mapped
3=strongly mapped

SEMESTER II

ECO 21223	MICROECONOMICS II	L	T	P	C
Version 1.0	Contact Hours - 60	3	1	0	4
Pre-requisites/Exposure	Any Undergraduate degree (in 10+2+3 structure) with Economics in UG level and course ECO 21201 taught in the previous semester				
Co-requisites	--				

Course Objectives:
Microeconomics II is the application of microeconomic tools studies at UG level to advanced as well as interdisciplinary areas. It aims to place the learner in the research industry or in academic profession. It is the basis of policy making as well as corporate decision making.
Course Outcomes:

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

CO4. **Discuss** the Elements, Tools & Methods of Advanced Microeconomics.
CO5. **Identify** the Fundamentals of Micro level transactions.
CO6. **Design** strategy to optimize objective functions.
CO7. **Choose** the Type and Role of market structure for creation of equilibrium price and output.

Course Content
Unit 1: Choice under Uncertainty

Lottery, Expected utility, Attitude towards risk, Behaviour of firms under uncertainty, Insurance problem

Unit 2: Game Theory and Imperfect Competition

Product variety model - monopolistic competition, concept of a game, normal form representation, Examples: Prisoners' Dilemma, Battle of Sexes, Matching Pennies, Solution Concepts - Pure and mixed strategy Nash equilibrium, Iterated elimination of strictly dominated strategies (IESDS), Applications: Cournot model, Bertrand model, Concept of dynamic games, subgames, Solution Concepts - Subgame Perfect Nash equilibrium, backward induction, Applications: Stackelberg model, repeated games - infinitely repeated games, Folk Theorem.

Unit 3: Information Economics

Static games of incomplete information,Solution Concepts - Bayesian Nash Equilibrium, applications, Dynamic games of incomplete information,Solution Concepts - Perfect Bayesian Equilibrium, Signalling Games, moral hazard and adverse selection, basic idea of principal-agent problem
Pedagogy:

The Faculty may choose pedagogies suitable to the nature of course from following:

- Student Lecture and Presentation
- Case Study Analysis
- Teaching-learning Strategy using Multimedia
- Mind Mapping
- Chunking strategy
- Z to A Approach
- Collaborative and cooperative learning
- Anchored Instruction

- Peer Tutoring
- Microteaching and Simulated Teaching
- Blended learning
- Problem Based Learning (PBL)
- Rotation Model
- Flex Model
- Enriched Virtual Model

Modes of Examination: Assignment /Quiz / Project / Presentation / Course Work / Article reviews / Book Reviews / Reports / Written Exam / Jury / Survey / / any other method that suits to assess the given course outcome

Examination Scheme:

Components	Continuous Internal Assesment	End Term
Weightage (%)	**50**	**50**

Suggested Readings:

- Hal R. Varian. Microeconomic Analysis, W W Norton & Company, 3rd edition 2010.
- R. Gibbons. *Game Theory for Applied Economists*, Princeton University Press, 1992.
- C. D. Aliprantis, and S. K. Chakraborti. *Games and Decision Making*, Oxford University Press, 2000.
- Martin J. Osborne. *An Introduction to Game Theory*, the MIT Press, 2003.
- Mas-Colell, M. Whinston and J Green. *Microeconomic Theory*, Oxford University Press, 1995.
- J. J. Laffont and D. Martimort. *Theory of Incentives: The Principal Agent Model*, Princeton University Press, 2001.
- P. Bolton and M. Dewatripont. *Contract Theory*, The MIT Press, 2005.
- D. Fudenberg and J. Tirole. *Game Theory*, The MIT Press, 1991.

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs			
	Course Outcomes (COs)	**Mapped Program Outcomes**	**Mapped to Levels**
CO1	**Discuss** the Elements, Tools & Methods of Advanced Microeconomics.	**PO1, PO2, PO4,PO7, PO8**	**L1, L2**
CO2	**Identify** the Fundamentals of Micro level transactions.	**PO1, PO2, PO4,PO7, PO8**	**L2, L3, L4**
CO3	**Design** strategy to optimize objective functions.	**PO1, PO2, PO4,PO7, PO8**	**L3, L4, L5**
CO4	**Choose** the Type and Role of market structure for creation of equilibrium price and output.	**PO1, PO2, PO4,PO7, PO8**	**L5, L6**

		Domain specific knowledge and skills/ Acquire knowledge of advanced economic theories and adequately evaluate the issues related to economy, public policy, business and society	Problem Analysis and Critical thinking / Demonstrate an ability to construe data and information and critically examine the outcomes in relation to economic theories	Modern IT Tools / Efficiently adopt software (s) in conducting advanced analysis of economic data and other research oriented activities	Business and Society / Appraise the importance of economics as a discipline in context of business and society	Environment and sustainability / Draw inferences on concerns emerging from environmental changes as implied to society at large	Ethics / Hone ethical behavior and become sensitive towards the society	Leadership and Team work / Improve Leadership skills via developing strong emotional aptitude and become a lifelong leaner.	Communication: Develop verbal and non-verbal communication skills for a successful career in Research, Industry, Business and Entrepreneurship
Course Code	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
ECO21201	Advanced Microeconomics	3	3	–	2	–	–	1	2

1=weakly mapped
2= moderately mapped
3=strongly mapped

ECO21207	MACROECONOMICS- II	L	T	P	C
Version 1.0	Contact Hours - 60	3	1	0	4
Pre-requisites/Exposure	Any Undergraduate degree (in 10+2+3 structure) with Economics in UG level and the course ECO 21202 taught in the previous semester				
Co-requisites	--				

Course Objectives:

This course is a sequel of the macroeconomics course taught in the first semester. In this course, the dynamic aspects of macroeconomics will be introduced. The student will be introduced to the endogenous growth models followed by problems of infinitely lived individual households along with overlapping generations models.

Course Outcomes

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

CO1. **Understand** the difference between the static models versus dynamic models of macroeconomics

CO2. Explain the determinants of growth in a variety of situations

CO3. Evaluate the underlying motivations of intergenerational relations in an economy

CO4. Developskills for handling applications of several mathematical tools already taught in the Previous semesters

Course Content:

Unit 1: Modern Theory of Growth (15 lectures)

Dissatisfaction with neoclassical theory- One sector models of endogenous growth: the AK model- Endogenous growth and human capital formation: the Lucas model- Endogenous growth and R&D- Romer model. Learning by Doing and Growth

Unit 2: Basic Infinite Horizon Models (15 lectures)

Ramsey Problem: Command Economy, decentralized economy, dynamic efficiency- Government in the decentralized economy

Unit 3: Overlapping Generations Model (15 lectures)

OLG with production: two period lives, dynamic inefficiency and altruism. Social Security models under OLG.

Pedagogy:

The Faculty may choose pedagogies suitable to the nature of course from following:

- Student Lecture and Presentation
- Case Study Analysis
- Teaching-learning Strategy using Multimedia
- Mind Mapping
- Chunking strategy
- Z to A Approach

- Collaborative and cooperative learning
- Anchored Instruction
- Peer Tutoring
- Microteaching and Simulated Teaching
- Blended learning
- Problem Based Learning (PBL)
- Rotation Model
- Flex Model
- Enriched Virtual Model

Modes of Examination: Assignment /Quiz / Project / Presentation / Course Work / Article reviews / Book Reviews / Reports / Written Exam / Jury / Survey / / any other method that suits to assess the given course outcome

Examination Scheme:

Components	Continuous Internal Assesment	End Term
Weightage (%)	**50**	**50**

Text Books:

T1. O.J. Blanchard and S. Fischer. *Lectures on Macroeconomics*, Prentice Hall of India, 1989

T2. R. J. Barro and X. Sala-i-Martin. *Economic Growth*, Prentice Hall of India, 2004.

T3. David Romer. *Advanced Macroeconomics*, N.Y.: McGraw Hill, 1996.

References:

R1. R. Solow. *Growth Theory: An Exposition*, New York, Oxford University Press, 2000.

R2. Aghion Philippe and Peter Howitt. *The Economics of Growth*, MIT Press, 2008.

Mapping of COs and POs			
	Course Outcomes (COs)	**Mapped to POs**	**Mapped to Levels**
CO1	**Explain** different open economy macroeconomic variables.	**PO1, PO2, PO3**	**L1, L2**
CO2	**Develop** rigorous mathematical vigor in understanding theoretical models.	**PO1, PO2, PO6, PO8**	**L2, L3**
CO3	**Examine** macroeconomic tools used in policy making.	**PO1, PO4 PO2, PO6, PO7, PO8**	**L3, L4, L5**
CO4	**Recognize** the workings of global macroeconomic institutions and their role in policymaking.	**PO1, PO4 PO2, PO6, PO7, PO8**	**L5, L6**

		Domain specific knowledge and skills/ Acquire knowledge of advanced economic theories and adequately evaluate the issues related to economy, public policy, business and society	Problem Analysis and Critical thinking / Demonstrate an ability to construe data and information and critically examine the outcomes in relation to economic theories	Modern IT Tools / Efficiently adopt software (s) in conducting advanced analysis of economic data and other research oriented activities	Business and Society / Appraise the importance of economics as a discipline in context of business and society	Environment and sustainability / Draw inferences on concerns emerging from environmental changes as implied to society at large	Ethics / Honethical behavior and become sensitive towards the society	Leadership and Team work / Improve Leadership skills via developing strong emotional aptitude and become a lifelong leaner.	Communication: Develop verbal and non-verbal communication skills for a successful career in Research, Industry, Business and Entrepreneurship
Course Code	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
ECO21207	Macroeconomics-II	3	3	1	1	-	3	3	3

ECO21208	INTERNATIONAL ECONOMICS	L	T	P	C
Version 1.0	Contact Hours - 60	3	1	0	4
Pre-requisites/Exposure	Any Undergraduate degree (in 10+2+3 structure) with Economics in UG level				
Co-requisites	--				

Course Objectives:

The course aims to examine the cause of trade, sources of the gains from trade and the domestic and international distribution of those gains. It provides an in-depth analysis of the instruments and consequences of trade policy measures—including tariffs and quantitative restrictions; The course explains the basic difference between inter and intra industry trade and offers foundational knowledge on the benefits and challenges of globalization before and after the recent global financial crisis, EU-US trade disputes and protectionism, international trade and de-industrialization of the United States and other advanced countries, benefits and costs of NAFTA, EFTA, SAARC in international trade and environmental sustainability, debate over U.S. immigration policy, among others.

Course Outcomes

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

CO1. Develop a good conceptual understanding of the key concepts and practical applications of both international trade and international finance.

CO2. Evaluate the current debate about "free trade" and its consequences for economic performance of a nation.

CO3. Analyze the global scenario from the third world perspectives to bring out the sharp contrasts in views.

CO4. **Demonstrate** their understanding of the determinants of the trade pattern between countries and assess its effects on the distribution of income between and within these countries.

Course Content:

Unit 1: Trade Theory & Policy under Perfect Competition 13 L

Arbitrage, the concept of absolute and comparative advantage, Gains from trade, Heckscher Ohlin-Samuelson model, Factor price equalization theory, Offer curve, the theory of tariff, Trade policy with domestic distortions, International Political Economy

Unit 2: Trade, Imperfect Competition 12L

Rethinking International Trade, International Trade with Increasing Returns to Scale, Oligopolistic competition and Strategic Trade Theory, The Prebisch Singer argument, Unequal exchange theories, The open dual economy, Terms of trade and development, Immiserizing growth, Bhagwati – Johnson – Brecher and Alejandro, Trade on growth

Unit 3: Economic integration in world economy 10 L

Types of economic integration, Trade creating & trade diverting customs unions, History of attempts at economic integration (EFTA, NAFTA, SAARC), Economic integration of developing countries 17

Unit 4: Emergence of international monetary system 10 L

The pre-Bretton Woods period, Emergence and breakdown of Bretton Woods, GATT, World Trade Organization (WTO): Introduction and issues related to developing countries.

Pedagogy:

The Faculty may choose pedagogies suitable to the nature of course from following:

- Student Lecture and Presentation
- Case Study Analysis
- Teaching-learning Strategy using Multimedia
- Mind Mapping
- Chunking strategy
- Z to A Approach
- Collaborative and cooperative learning
- Anchored Instruction
- Peer Tutoring
- Microteaching and Simulated Teaching
- Blended learning
- Problem Based Learning (PBL)
- Rotation Model
- Flex Model
- Enriched Virtual Model

Modes of Examination: Assignment /Quiz / Project / Presentation / Course Work / Article reviews / Book Reviews / Reports / Written Exam / Jury / Survey / / any other method that suits to assess the given course outcome

Examination Scheme:

Components	Continuous Internal Assesment	End Term
Weightage (%)	**50**	**50**

References:

R1. Rogoff&Obstfeld. Foundations of International Macroeconomics, MIT Press, (1998)

R2. Dornbusch. Open Economy Macroeconomics, Norton, (1980)

R3. Benassy, Macroeconomics, Academic Press, (1984)

R4. Jones, R. Caves and J. Frenkel (CJF), World Trade and Payments, 4th edition

R5.Ronald Findlay, International Trade and Development Theory, Columbia University Press, (1973)

R6.Paul Krugman, Rethinking International Trade, MIT press, (1994)

R7.Jagdish N. Bhagwati, T. N. Srinivasan and ArvindPanagariya, Lectures on International Trade, MIT Press, (1998)

R8.Helpman&Krugman, Trade Policy & Market Structure, MIT Press, (1989)

R9. Kierzkowski (ed.), Monopolistic Competition and International Trade, OUP, (1984)

R10.Bhagwati, J. (Ed.) International Trade: Selected Readings, Cambridge University Press,Massachusetts, (1981)

R11.Chacholiades, Miltiades, The Pure Theory of International Trade, McGraw Hill, Kogakusha, Japan, (1990)

R12.Cherunilam, Francis, International Economics, Tata McGraw-Hill Publishing Co. Ltd., New Delhi, (2006)

R13. Heller, H. Robert, International Trade: Theory and Empirical Evidence, Prentice-Hall of India Pvt.Ltd., New Delhi, (1988)

R14. Kenen, Peter B. The International Economy, Prentice-Hall of India Pvt. Ltd., New Delhi, (1989) R15. Kindleberger, C.P. International Economics, D.B. Taraporevala Sons & Co. Pvt. Ltd., Bombay,(1977)

R16. Meade, James Edward, A Geometry of International Trade, George Allen and Unwin Ltd.,London, (1952) Roy, P.N. International Trade: Theory and Practice, Wiley Eastern Ltd., New Delhi, (1986)

R17. Sodersten, Bo, International Economics, The Macmillan Press Ltd., London, (1991)

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs			
	Course Outcomes (COs)	**Mapped Program Outcomes**	**Mapped to Levels**
CO1	Develop a good conceptual understanding of the key concepts and practical applications of both international trade and international finance.	**PO1, PO2**	**L1, L2**
CO2	Understand the current debate about "free trade" and its consequences for economic performance of a nation	**PO1, PO2, PO4**	**L2, L3, L4**
CO3	Understand of the global scenario from the third world perspectives to bring out the sharp contrasts in views.	**PO1, PO2, PO4, PO7, PO8**	**L3, L4, L5**
CO4	Demonstrate their understanding of the determinants of the trade pattern between countries and assess its effects on the distribution of income between and within these countries.	**PO1, PO2, PO4**	**L5, L6**

		Domain specific knowledge and skills/ Acquire knowledge of advanced economic theories and adequately evaluate the issues related to economy, public policy, business and society	Problem Analysis and Critical thinking / Demonstrate an ability to construe data and information and critically examine the outcomes in relation to economic theories	Modern IT Tools / Efficiently adopt software (s) in conducting advanced analysis of economic data and other research oriented activities	Business and Society / Appraise the importance of economics as a discipline in context of business and society	Environment and sustainability / Draw inferences on concerns emerging from environmental changes as implied to society at large	Ethics / Hone ethical behavior and become sensitive towards the society	Leadership and Team work / Improve Leadership skills via developing strong emotional aptitude and become a lifelong leaner.	Communication: Develop verbal and non-verbal communication skills for a successful career in Research, Industry, Business and Entrepreneurship
Course Code	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
ECO21208	International Economics	3	3	-	1	-	-	2	1

1=weakly mapped
2= moderately mapped
3=strongly mapped

ECO21209	ECONOMETRICS	L	T	P	C
Version 1.0	Contact Hours - 60	3	1	0	4
Pre-requisites/Exposure	Basic Knowledge of Mathematics at 10+2 level				
Co-requisites	--				

Course objectives:

Econometrics is concerned with the application of statistical theory to the analysis of economic data and the estimation of economic relationships. This course intends to expose students to the statistical techniques that economists use for estimating, testing, and forecasting economic
relationships. This course covers both an introduction to econometric theory and methods, and a range of applications. The structure of the course makes it ideal for a policy analysis focus. The course attempts to reduce the gap between what is taught in statistics and econometrics text books and how empirical researchers think about and apply econometric methods.

Course Outcomes:

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

CO1: **Understand** the application of statistical theories to the analysis of economic data and the estimation of economic relationships.

CO2: **Understand** the importance and fields of application of econometric methods.

CO3: **Develop** knowledge on multiple regression model and estimation techniques.

CO4: **Learn** when and how to apply a particular econometric model and what kind of limitations it might face.

Course Content

Unit 1:Statistics Prerequisites (5 Hours)

Data - Classification and presentation; Frequency distribution - Diagrammatic representation of frequency distribution; Measures of Central Tendency; Measures of Dispersion; Measures of Skewness & Kurtosis; Bivariate data: correlation, covariance.

Unit-2: Statistical Inference [7 Hours]

Idea of Inference- Point and interval estimations and testing of hypothesis.
Point estimation: Requirement of a good estimator, notions of mean square error, unbiasedness,
Interval Estimation: Methods of constructing confidence intervals, Tests of Significance -Null and alternative hypothesis, simple and composite hypothesis, critical region, Type I and type II error, level of significance, p-value, power.

Unit 3: Simple Linear Regression Analysis (7 Hours)

Definition of Simple Linear Regression Model (SLRM); Ordinary Least-squares (OLS) Estimation of SLRM; Properties OLS Estimators; Statistical Inference in SLRM; Measuring Goodness of Fit; Analysis of Variance on OLS Regression; Interpretation of Regression Results.

Unit 4: Multiple Linear Regression Analysis (8 Hours)

Definition of Multiple Linear Regression Model (MLRM); General Linear Model; BLUE properties of GLM estimation ; Measuring Goodness of Fit; Tests of significance of coefficients

Unit 5: Heteroscedasticity, Autocorrelation, Multicollinearity (5 Hours)

Heteroscedasticity: Definition, Consequences, Detection, Remedial Measures. Autocorrelation: Definition, Consequences, Detection, Remedial Measures. Multicollinearity: Definition, Consequences, Detection, Remedial Measures.

Unit 6: Instrumental variables (IV) Estimation and Two Stage Least Square (5 Hours)

Motivation, Omitted variables in a simple regression model, IV estimation of the multiple regression model, Derivation of Two stage least Squares, IV solutions to Errors-in variables problems, Testing for Endogeneity and Testing Over identifying Restrictions.

Unit 7: Simultaneous equation system (8 hours)

Simultaneous equation system- Structural and Reduced forms - problem of identification; ILS and 2 SLS methods of estimations

Pedagogy:

The Faculty may choose pedagogies suitable to the nature of course from following:

- Student Lecture and Presentation
- Case Study Analysis
- Teaching-learning Strategy using Multimedia
- Mind Mapping
- Chunking strategy
- Z to A Approach
- Collaborative and cooperative learning
- Anchored Instruction
- Peer Tutoring
- Microteaching and Simulated Teaching
- Blended learning
- Problem Based Learning (PBL)
- Rotation Model
- Flex Model
- Enriched Virtual Model

Modes of Examination: Assignment /Quiz / Project / Presentation / Course Work / Article reviews / Book Reviews / Reports / Written Exam / Jury / Survey / / any other method that suits to assess the given course outcome

Examination Scheme:

Components	Continuous Internal Assesment	End Term
Weightage (%)	**50**	**50**

Core Text:

T1. G. S. Maddala, Introduction to Econometrics., 2nd Edition, Macmillan, New York
T2. Gujarati, D., Basic Econometrics, Tata McGra-Hill, Delhi, 4th Edition
T3: Jeffrey M. Wooldridge, Introductory Econometrics: A Modern Approach, South-Western, Cengage Learning, 2013, 5th Edition.

Reference Books:

R1. B. H. Baltagi, Econometrics. Springer (india) Private Limited; 3rd edition (2013)
R2. William H. Greene. Econometric Analysis. Pearson India; 5th edition (2003)
R3. Sankar Kumar Bhaumik, Principles of Econometrics: A Modern Approach Using EViews. Oxford University Press India (2015)

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping of COs and POs			
	Course Outcomes (COs)	**POs**	**Mapped to Levels**
CO1	**Understand** the application of statistical theories to the analysis of economic data and the estimation of economic relationships.	**PO1, PO3, PO7**	**L1, L2**
CO2	**Understand** the importance and fields of application of econometric methods.	**PO1, PO2, PO3,PO4**	**L1, L2, L3**
CO3	**Develop** knowledge on multiple regression model and estimation techniques	**PO2, PO3, PO4**	**L2, L3, L4**
CO4	**Learn** when and how to apply a particular econometric model and what kind of limitations it might face.	**PO1, PO2, PO6, PO7**	**L5, L6**

		Domain specific knowledge and skills/ Acquire knowledge of advanced economic theories and adequately evaluate the issues related to economy, public policy, business and society	Problem Analysis and Critical thinking / Demonstrate an ability to construe data and information and critically examine the outcomes in relation to economic theories	Modern IT Tools / Efficiently adopt software (s) in conducting advanced analysis of economic data and other research oriented activities	Business and Society / Appraise the importance of economics as a discipline in context of business and society	Environment and sustainability / Draw inferences on concerns emerging from environmental changes as implied to society at large	Ethics / Hone ethical behavior and become sensitive towards the society	Leadership and Team work / Improve Leadership skills via developing strong emotional aptitude and become a lifelong leaner.	Communication: Develop verbal and non-verbal communication skills for a successful career in Research, Industry, Business and Entrepreneurship
Course Code	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
ECO21209	Econometrics	3	3	3	-	-	1	1	-

1=weakly mapped,
2= moderately mapped,
3=strongly mapped

ECO21210	DEVELOPMENT ECONOMICS - II	L	T	P	C
Version 1.0	Contact Hours - 60	3	1	0	4
Pre-requisites/Exposure	Any Undergraduate degree (in 10+2+3 structure) with Economics in UG level				
Co-requisites	--				

Course Objectives:

The course aims at offering preliminary ideas about economic, political, social, and cultural dimensions of globalization and discussing their impacts on international relations. It will help examine the patterns of conflict and cooperation among countries including the influence of international institutions, NGOs, and global corporations, and introduces issues such as global security, environment, concentration of power, wealth and income distribution, cultural and ethnic identities and explores possible peaceful solutions to these global problems. The course will help students understand the development paradigm as a multidimensional process, analysing the conceptual issues about the relationship between growth and development, the role of international organizations, Human Development Index, Poverty, Inequality, Trade Liberalization, Globalization and political change.

Course Outcomes:

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

CO1. Understand the development paradigm as a multidimensional process, analysing the conceptual issues about the relationship between growth and development.

CO2. Explain the nature of the political system and the impact of politico-economic constraints on governments' policy choices.

CO3. Analyse the impact of global trends on local, national and regional trajectories and analysing how 'globalisation' influences particular development processes

CO4. Develop a more nuanced view of economic development which sees development and globalization as an inter-related set of historical processes.

Course Content

Unit 1 **[15 lectures]**

Trade and Development: North-South trade, Unequal exchange, Growth effects of Trade, Balanced versus Unbalanced Growth, Fragmentation and outsourcing

Unit 2: [10 lectures]

Capital Mobility, Foreign Investment, Technology Transfer

Unit 3: [10 lectures]

Labour Mobility across boundaries- Remittances and Tourism

Unit 4: [10 lectures]

Structural Inflation, Agricultural Backwardness, Deficit Financing

Pedagogy:

The Faculty may choose pedagogies suitable to the nature of course from following:

- Student Lecture and Presentation
- Case Study Analysis

- Teaching-learning Strategy using Multimedia
- Mind Mapping
- Chunking strategy
- Z to A Approach
- Collaborative and cooperative learning
- Anchored Instruction
- Peer Tutoring
- Microteaching and Simulated Teaching
- Blended learning
- Problem Based Learning (PBL)
- Rotation Model
- Flex Model
- Enriched Virtual Model

Modes of Examination: Assignment /Quiz / Project / Presentation / Course Work / Article reviews / Book Reviews / Reports / Written Exam / Jury / Survey / / any other method that suits to assess the given course outcome

Examination Scheme:

Components	Continuous Internal Assesment	End Term
Weightage (%)	**50**	**50**

Reference Books

R1. Growth and Development. A.P. Thirlwall. Palgrave McMillan; 8th edition (2010)
R2. Development Economics. Debraj Ray, Oxford University Press; 1st edition (1999)
R3. Analytical Development Economics: The Less Developed Economy Revisited. K. Basu. Oxford University Press (1998).
R4. Contemporary Issues in Globalization. S. Sikdar. Oxford University Press; 2nd edition (2006)
R5. Select Articles from journals

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs			
	Course Outcomes (COs)	**Mapped Program Outcomes**	**Mapped to Levels**
CO1	**Understand** the development paradigm as a multidimensional process, analysing the conceptual issues about the relationship between growth and development.	**PO1, PO2, PO4**	**L1, L2**
CO2	**Explain** the nature of the political system and the impact of politico-economic constraints on governments' policy choices.	**PO1, PO2, PO4**	**L2, L3, L4**
CO3	**Analyse** the impact of global trends on local, national and regional trajectories and analysing how	**PO1, PO2, PO7, PO8**	**L3, L4, L5**

	'globalisation' influences particular development processes		
CO4	**Develop** a more nuanced view of economic development which sees development and globalization as an inter-related set of historical processes.	**PO1, PO2, PO8**	**L5, L6**

		Domain specific knowledge and skills/ Acquire knowledge of advanced economic theories and adequately evaluate the issues related to economy, public policy, business and society	Problem Analysis and Critical thinking / Demonstrate an ability to construe data and information and critically examine the outcomes in relation to economic theories	Modern IT Tools / Efficiently adopt software (s) in conducting advanced analysis of economic data and other research oriented activities	Business and Society / Appraise the importance of economics as a discipline in context of business and society	Environment and sustainability / Draw inferences on concerns emerging from environmental changes as implied to society at large	Ethics / Hone ethical behavior and become sensitive towards the society	Leadership and Team work / Improve Leadership skills via developing strong emotional aptitude and become a lifelong leaner.	Communication: Develop verbal and non-verbal communication skills for a successful career in Research, Industry, Business and Entrepreneurship
Course Code	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
ECO21211	Development Economics - II	3	3	–	2	–	–	1	2

1=weakly mapped 2= moderately mapped 3=strongly mapped

SEMESTER III

ECO21211	RESEARCH METHODOLOGY	L	T	P	C
Version 1.0	Contact Hours - 60	3	1	0	4
Pre-requisites/Exposure	Basic Knowledge of Mathematics at 10+2 level				
Co-requisites	--				

Course objectives:

This course will introduce students to methods of quantitative as well as qualitative economic research using primary and secondary data source. The course will familiarize students with sampling techniques, questionnaire design, implementation of field-based studies, including randomized controlled trials. Students will be provided training for carrying out data analysis, including use of data sets such as the National Sample Survey, National Family Health Survey, and Indian Human Development Survey. Students will be expected to design and implement a small study during the course of the semester and will be evaluated on this.

Course Outcomes:

At the end of the course, the student will be able to:
CO1: **Develop** an overview of the process of research and its application in business and academia.
CO2: **Assess** a real life issue and develop a research design accordingly.
CO3: **Learn** different data collection and survey methods.
CO4: **Understand** tools and techniques of quantitative research.

Course Content

Unit-1: Research Process (7 Hrs)

Introduction: Defining need for research, defining research problem, setting research question, different types of research, Research Method and Methodology;
Research Process: Research objective, Literature Review, Information Types and Data Sources, Sample Plan, Data Collection, Data Analysis, Research Report

Unit-2: Research Design (8 Hrs)

Sketching a research design, Variables, Research Hypothesis, Control Groups, Experimental and Non Experimental Hypothesis Testing Research; Different Research Design in Exploratory
Research, Descriptive Research, Diagnostic Research, Causal Research; Experimental Design:
Control Design, Completely Randomized Design, Randomized Block Design, L-S Design, and
Factorial Design

Unit-3: Sample Survey and Data Collection (5 Hrs)

Population and Sample, Census Survey and Sample Survey, Sampling Error, Non-Sampling Error, Sampling Techniques: Non- Probability Sampling, Probability Sampling; Sampling Distribution;
Data Collection: Qualitative & Quantitative Data, Primary & Secondary Data, Measurement and Scaling, Measurement Tools, Scaling Techniques; Methods of Data Collection-Questionnaires, Surveys, Archives, Online Data Collection

Unit-4: Basics of Quantitative Research (10 Hrs)

Quantitative approach to data analysis; Estimation: Point Estimation, Interval Estimation, Sample size determination; Hypothesis Testing: Null and Alternative Hypothesis, Type-I and Type-II Errors, One tailed and Two tailed tests, Level of Significance, Critical Region, P-value Approach, Hypothesis testing for Mean, Proportion, Variance, Difference of two means, proportions, variances, Goodness of Fit; Analysis of Variance: One way ANOVA, Two way ANOVA.; Regression Analysis, Multivariate Techniques.

Unit 5: Methods of Qualitative Research (10 Hrs)

Qualitative Approach, Types of Data: Verbal Data, Textual Data, Visual Data and Data beyond Talk; Research Design: Case Studies, Comparative Studies, Retrospective Studies, Longitudinal Studies; Data Collection: Interviews, Focus Group, Narratives, Participant and Non-participant Observation, Ethnography, Film Studies, Photography, Case Studies, Life Histories, Action Research; Qualitative Data Analysis: Transcription, Coding, Grounded Theory, Thematic Analysis, Content Analysis, Conversation, Discourse, Genre and Hermeneutics. 20

Unit 6: Learning Academic Writing (5 Hrs)

Research Report: Layout of the research report, Reference Systems, Research Ethics, Plagiarism, Peer Review; Academic Writing: Writing for journal/book chapter/newspaper article/magazine, Research Proposal writing, writing Abstract of any research, Research Grant Proposals.

Pedagogy:

The Faculty may choose pedagogies suitable to the nature of course from following:

- Student Lecture and Presentation
- Case Study Analysis
- Teaching-learning Strategy using Multimedia
- Mind Mapping
- Chunking strategy
- Z to A Approach
- Collaborative and cooperative learning
- Anchored Instruction
- Peer Tutoring
- Microteaching and Simulated Teaching
- Blended learning
- Problem Based Learning (PBL)
- Rotation Model
- Flex Model
- Enriched Virtual Model

Modes of Examination: Assignment /Quiz / Project / Presentation / Course Work / Article reviews / Book Reviews / Reports / Written Exam / Jury / Survey / / any other method that suits to assess the given course outcome

Examination Scheme:

Components	Continuous Internal Assesment	End Term
Weightage (%)	**50**	**50**

Text Books:

T1. Kothari, C.R., *Research Methodology: Methods and Techniques*, New Age International Publisher, New Delhi, (2004)

T2. Marczyk, G, Matteo, D. and Frstinger, D. *Essentials of Research Design and Methodology*, John Wiley and Sons. (2005)

Reference Books:

R1 Kapalan, D. The Sage Handbook of Quantitative Methodology for the Social Sciences, Sage Publications, London, (2004)

R2 Flick, U. An Introduction to Qualitative Research, Sage Publications, India, (2014)

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping of COs and POs			
	Course Outcomes (COs)	**POs**	**Mapped to Levels**
CO1	**Develop** an overview of the process of research and its application in business and academia.	**PO1, PO2**	**L1, L2**
CO2	**Assess** a real life issue and develop a research design accordingly.	**PO1, PO2**	**L2, L3, L4**
CO3	**Learn** different data collection and survey methods.	**PO1, PO2, PO6, PO7**	**L2, L3, L4, L5**
CO4	**Understand** tools and techniques of quantitative research.	**PO1, PO2, PO7**	**L2, L3, L4, L5, L6**

		Domain specific knowledge and skills/ Acquire knowledge of advanced economic theories and adequately evaluate the issues related to economy, public policy, business and society	Problem Analysis and Critical thinking / Demonstrate an ability to construe data and information and critically examine the outcomes in relation to economic theories	Modern IT Tools / Efficiently adopt software (s) in conducting advanced analysis of economic data and other research oriented activities	Business and Society / Appraise the importance of economics as a discipline in context of business and society	Environment and sustainability / Draw inferences on concerns emerging from environmental changes as implied to society at large	Ethics / Hone ethical behavior and become sensitive towards the society	Leadership and Team work / Improve Leadership skills via developing strong emotional aptitude and become a lifelong leaner.	Communication: Develop verbal and non-verbal communication skills for a successful career in Research, Industry, Business and Entrepreneurship
Course Code	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
ECO21211	Research Methodology	3	3	-	-	-	1	2	-

1=weakly mapped
2= moderately mapped
3=strongly mapped

SEMESTER IV

ECO21222	ECONOMICS OF SOCIAL ISSUES	L	T	P	C
Version 1.0	Contact Hours - 60	3	1	0	4
Pre-requisites/Exposure	Economic relevance of contemporary social issues and problems.				
Co-requisites	--				

Course Objectives

- This course introduce the students the economic relevance of contemporary social issues and problems.
- To strengthen the knowledge of the students about concepts of Modernity, social change followed by in-depth understanding of gender issues in society.
- This course endeavours to build a sound base in economic sociology by emphasizing on issues of environmentalism, social movements and globalisation.
- This course also provides a detailed understanding about the methodological approach towards heterogeneity and local interests, thereby providing a critique of the capitalist notions of justice, rationality and equality.
- It also interrogates the concept of gender and sexuality and its significance in society.

Course Outcomes

On completion of this course, the students will be able to--

CO1. Determine the major social issues in society from sociological perspective.

CO2. Distinguish between globalization and social change.

CO3. Construct an understanding of the the major social movements in India with emphasis on Naxalite, Dalit and environmental movements.

CO4. Identify the reasons behind social construction of gender and sexuality.

CO5. Illustrate the importance of economic sociology by studying issues like capitalism, modernity, and globalization.

Course Description

This course introduces the students with the critical understanding about the concept of economic sociology by studying issues like capitalism, modernity, and globalization. Capitalism, aided by modernity and globalization, had promised a universal solution to all the social problems of mankind. However, with time, it has given rise to a new set of contradictions and problems that are themselves products of this age, characterized by economic engines of growth and technology. Accordingly, new approaches have come up to tackle these social problems related to gender, race, nature etc. This course attempts towards such a new methodological approach towards heterogeneity and local interests, thereby providing a critique of the capitalist notions of justice, rationality and equality.

Course Content

Unit 1: Modernity and social changes 5 lecture hours

Modernity, capitalism, economic problems of poverty, unemployment and inequality – growth as the solution, from growth to development, emphasis on social indicators, human development - capability approach

Unit 2: Globalization and social changes 12 lecture hours

Dimensions of Globalization, Beyond economic problems, multiculturalism, urbanization, migration, social disorganization, exclusion, displacement, refugee problems, informalization and casualization of labor, demographic problems, population explosion, communalism, secularism, regionalization, consumerism, stratification

Unit 3: Gender issues 10 lecture hours

Gender and sex, biological determinism, socialization, patriarchy, male gaze, gender mainstreaming, gender and work ------ Paid and Unpaid work (Economic empowerment of women), Forms/ strands of feminism, Understanding concept of Masculinity – Definition and stereotyping, Rights of LGBT Community

Unit 4: Social justice 8 lecture hours

Idea of justice – a brief chronological overview, Equality and Equity, egalitarian view, utilitarian view, Rawlsian view, Sen's idea of justice

Unit 5: Social movements 5 lecture hours

Tribal unrests, social movements- Peasant, Dalit, Women's movement, Environment movements (Naxalbari movement in India: case study)

Unit 6: Environmentalism 5 lecture hours

The mutual relation between man and nature, Relation between environment and economy, mainstream movements and critiques, animal rights, sustainable development

Text Books

1. Breman Jan .Footloose Labour: Working in India's Informal Economy (Contemporary South Asia) Cambridge University Press, 1996.
2. Giddens, A 1997 Sociology Cambridge: Polity Press
3. Shah Ghanshyam, Social Movements and the State, Sage, New Delhi, 2002.
4. Ahuja, Ram (2000). Social Problems in India, New Delhi: Rawat Publications.
5. Abbott Pamela & Wallace, Claire, An Introduction to Sociology: Feminist Perspectives, Routledge, 01-Jan-1990
6. Connell. R.W. Masculinities, Cambridge: Polity Press, 1995
7. Singh K.S. Tribal Movements in India Vol. I & II, New Delhi: ManoharPrakashan, 1982.

8. Gail Omvedt, Dalits and the Democratic Revolution, Sage, New Delhi, 1994.
9. Mehta. S.R. (Ed.). (1997). Population, Poverty and Sustainable Development, Jaipur: Rawat

Modes of Examination: Assignment/Quiz/Film review (documentaries)/ Project/Group Discussion/ Presentation/Extempo/Written Exam

Examination Scheme:

Components	Continuous Internal Assesment	End Term
Weightage (%)	**50**	**50**

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	Determine the major social issues in society from sociological perspective.	**PO1**
CO2	Distinguish between globalization and social change.	**PO3**
CO3	Construct an understanding of the the major social movements in India with emphasis on Naxalite, Dalit and environmental movements.	**PO3**
CO4	Identify the reasons behind social construction of gender and sexuality.	**PO1**
CO5	Illustrate the importance of economic sociology by studying issues like capitalism, modernity, and globalization.	**PO2,PO4**

		Domain specific knowledge and skills/ Acquire knowledge of advanced economic theories and adequately evaluate the issues related to economy, public policy, business and society	Problem Analysis and Critical thinking / Demonstrate an ability to construe data and information and critically examine the outcomes in relation to economic theories	Modern IT Tools / Efficiently adopt software (s) in conducting advanced analysis of economic data and other research oriented activities	Business and Society / Appraise the importance of economics as a discipline in context of business and society	Environment and sustainability / Draw inferences on concerns emerging from environmental changes as implied to society at large	Ethics / Hone ethical behavior and become sensitive towards the society	Leadership and Team work / Improve Leadership skills via developing strong emotional aptitude and become a lifelong leaner.	Communication: Develop verbal and non-verbal communication skills for a successful career in Research, Industry, Business and Entrepreneurship
Course Code	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
ECO21222	Economics of Social Issues	3	3	-	3	-	3	2	2

1=weakly mapped
2= moderately mapped
3=strongly mapped

Special paper – Track – I (ECONOMETRIC AND STATISTICAL THEORY AND APPLICATIONS)

Special Paper - A

ECO21212	ADVANCED ECONOMETRIC METHODS	L	T	P	C
Version 1.0	Contact Hours - 60	3	1	0	4
Pre-requisites/Exposure	12th level English, Basic knowledge of Econometrics				
Co-requisites					

Course Objectives

This course aims at offering the fundamentals of advanced econometrics techniquesfor post-graduate students. Students will be introduced to fundamentals of advanced econometrics applied to Cross-section, Time series as well as panel data analysis. After advancing this course, students will be equipped to deal with empirical economics and applied the techniques to a large number of Economics as well as other social science data.

Course Outcomes

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

CO1. **Comprehend** the fundamentals of econometrics applied to Cross-section analysis.
CO2. **Understand** fundamentals of econometrics applied to Time series as well as Panel data analysis.
CO3. **Apply** advanced econometric techniques to a large number of Economics as well as other social science data to deal with empirical economics.
CO4. **Develop** the ability of critically reading different project reports and journal articles that use different advanced econometric techniques.
CO5. **Apply** appropriate model specifications to given real life scenarios and accurately interpreting estimated outcomes.

Course Content

Unit 1: Dummy Variable Regression Models (10 Hours)
Dummy Variables definition, Simple regression model with Dummy Variable (qualitative) with two categories, with more than two categories- intercept shifters, Dummy Variable trap, Interaction of two categorical variables-interaction Dummy; Interaction of categorical and continuous (quantitative) variables-slope shifters; Comparing two regression-Chow test

Unit 2: Qualitative Response Models (8 Hours)

Models with Dummy dependent variable, Linear Probability Model (LPM), limitation of LPM, Logit models, Logistic curve, Probit model; Estimation of Probit and Logit models; Comparison between logit and probit model

Unit 3: Model Specification and Diagnostic Testing (6 Hours)

Model Selection Criteria; Types of Specification Errors; Consequences of Model Specification Errors-Omitting a Relevant Variable, Inclusion of an Irrelevant Variable; Tests of Specification Errors; Errors of Measurement; Incorrect Specification of The Stochastic Error Term; Model Selection Criteria - The R2 Criterion, Adjusted R2 , Akaike Information Criterion (AIC), Schwarz Information Criterion (SIC)

Unit 4: Time Series Econometrics (10 Hours)

Stochastic process, Stationary stochastic process, White noise stochastic process, Non-stationary stochastic process or Random Walk, Unit Root stochastic process; Test for stationarity, Autocorrelation Function (ACF), Partial Autocorrelation Function (PACF), Unit Root test, Dickey-Fuller test, Augmented Dickey-Fuller test (ADF), Source of non-stationarityCointegration and Error Correction Mechanism; ARIMA forecasting, AR, MA, ARIMA modelling of time series data the Box-Jenkins methodology; Vector Auto Regressive (VAR) model, specification of VAR model, estimation of VAR model, forecasting with VAR, Vector Error Correction model; Granger Causality test, Granger Causality in VAR; Modelling Volatility – ARCH and GARCH Model

Unit 5: Panel Data Model(7 Hours)

Definition and usefulness of Panel data; Panel data models: the Constant Coefficients Model, Pooled repeated cross-section model, within and between estimators, the Fixed Effect Model (FEM), the Random Effect Model (REM), Hausman test, Breusch-Pagan test

Unit 6: Simultaneous Equations System (4 Hours)

Structural Equation Models: Specification, Endogenous, Exogenous and Predetermined variables; OLS estimation of Simultaneous Equations System: simultaneity bias; Structural and Reduced form equations, Identification problem: Rank and Order condition; Methods of estimation: Indirect Least Squares (ILS), Two-Stage Least Squares (2SLS)

Pedagogy:

The Faculty may choose pedagogies suitable to the nature of course from following:

- Student Lecture and Presentation
- Case Study Analysis
- Teaching-learning Strategy using Multimedia
- Mind Mapping
- Chunking strategy
- Z to A Approach
- Collaborative and cooperative learning
- Anchored Instruction
- Peer Tutoring
- Microteaching and Simulated Teaching
- Blended learning
- Problem Based Learning (PBL)
- Rotation Model
- Flex Model
- Enriched Virtual Model

Modes of Examination: Assignment /Quiz / Project / Presentation / Course Work / Article reviews / Book Reviews / Reports / Written Exam / Jury / Survey / / any other method that suits to assess the given course outcome

Examination Scheme:

Components	Continuous Internal Assesment	End Term
Weightage (%)	**50**	**50**

Core Text:

Maddala, G.S. Introduction to Econometrics, John Wiley & Sons Ltd, 2009

Reference Books:

1. Baltagi, B. Econometric Analysis of Panel Data, Wiley, 2004
2. Johnston, J. and J. Dinardo: Econometric Methods, McGraw Hill, 1997
3. Enders, W. Applied Econometrics Time Series, John Wiley and Sons, 2004
4. Hamilton, J. Time series analysis, Princeton University Press, 1994
5. Gujarati, D. Basic Econometrics, McGraw Hill Higher Education, 2003
6. Wooldridge, J. Econometric Analysis of Cross Section and Panel Data, The MIT Press, 2010

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping of COs and POs			
	Course Outcomes (COs)	**POs**	**Mapped to Levels**
CO1	**Comprehend** the fundamentals of econometrics applied to Cross-section analysis.	**PO1, PO2**	**L1, L2**
CO2	**Understand** fundamentals of econometrics applied to Time series as well as Panel data analysis.	**PO1, PO2**	**L1, L2**
CO3	**Apply** advanced econometric techniques to a large number of Economics as well as other social science data to deal with empirical economics.	**PO1, PO2, PO3, PO7, PO8**	**L2, L3, L4**
CO4	**Develop** the ability of critically reading different project reports and journal articles that use different advanced econometric techniques.	**PO1, PO2, PO3, PO8**	**L3, L4, L5, L6**
CO5	**Apply** appropriate model specifications to given real life scenarios and accurately interpreting estimated outcomes.	**PO1, PO2, PO3, PO7, PO8**	**L3, L4, L5, L6**

		Domain specific knowledge and skills/ Acquire knowledge of advanced economic theories and adequately evaluate the issues related to economy, public policy, business and society	Problem Analysis and Critical thinking / Demonstrate an ability to construe data and information and critically examine the outcomes in relation to economic theories	Modern IT Tools / Efficiently adopt software (s) in conducting advanced analysis of economic data and other research oriented activities	Business and Society / Appraise the importance of economics as a discipline in context of business and society	Environment and sustainability / Draw inferences on concerns emerging from environmental changes as implied to society at large	Ethics / Hone ethical behavior and become sensitive towards the society	Leadership and Team work / Improve Leadership skills via developing strong emotional aptitude and become a lifelong leaner.	Communication: Develop verbal and non-verbal communication skills for a successful career in Research, Industry, Business and Entrepreneurship
Course Code	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
ECO21212	Advanced Econometric Methods	3	3	2	_	_	_	1	2

1=weakly mapped
2= moderately mapped
3=strongly mapped

Special Paper- B

ECO21213	ECONOMETRIC ANALYSIS WITH DATA (USING SOFTWARES LIKE STATA)	L	T	P	C
Version 1.0	Contact Hours - 60	0	1	3	4
Pre-requisites/Exposure	12th level English, Basic knowledge of Econometrics				

Course Objectives

Econometrics analysis of Data is a course designed for the students to apply their theoretical knowledge of econometrics in real life Economic data. The course aims at developing the understanding of the link between the theoretical knowledge of econometrics and their application in real Economic data. It aims at enabling students to handle statistical software to analyse different cross section and time series data, test different economic relationships and critically interpret the estimation outcomes.

Course Outcomes

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

CO1. **Apply** various advanced econometric techniques to real life cross section data for testing different hypotheses.

CO2. **Analyse** estimated results obtained from cross section real life data critically in line with existing economic theories.

CO3. **Apply** various advanced econometric techniques to real life time series data to test different relationships.

CO4. **Analyse** estimated time series regression outcomes critically.

CO5. **Assess** reliability of any given data set and use accurate techniques to forecast future trend of a variable.

Course Content

Unit 1: Data Description in Econometrics(7 Hours)

Introduction to Data analysis; data mining and Filtering; Descriptive analysis of econometric Data; Graphical exploration; Distributions of Econometric data; Summary

Unit 3: Regression (10 Hours)

Application of Simple and Multiple Linear regression and least square principle to real life data; Regression with graphics; Outliers, leverage and influence; Interpreting Simple and multiple regression coefficients; Multiple regression line; partial regression and partial correlation; The t-test in multiple regression; Model selection and misspecification: Introduction; Omitted variable bias; Testing zero restriction; Testing for Heteroscedasticity, autocorrelation and multicollinearity

Unit 4: Regression with Dummy Variables (10Hours)

Regression with categorical variables, Use of dummy independent variable in Single Regression Model, Multiple regression with categorical variables; Use of dummy Dependent Variable, Application of Linear Probability Model, Logit transformation, Probit Model Graphical analysis

Unit 5: Regression with time-series data (10 Hours)

Stationarity and Non-stationarity; Graphical Analysis of ACF, PACF; White Noise, Random walk and spurious regression; Testing for stationarity; Transformation; Misspecification, Detecting autocorrelation; What to do about autocorrelation; Co-integration and error correction model, Forcasting

Unit 6: Applications in Multivariate Data Analysis (6 Hours)

Introduction: Cluster Analysis; Factor Analysis; Multivariate Regression

Pedagogy:

The Faculty may choose pedagogies suitable to the nature of course from following:

- Student Lecture and Presentation
- Case Study Analysis
- Teaching-learning Strategy using Multimedia
- Mind Mapping
- Chunking strategy
- Z to A Approach
- Collaborative and cooperative learning
- Anchored Instruction
- Peer Tutoring
- Microteaching and Simulated Teaching
- Blended learning
- Problem Based Learning (PBL)
- Rotation Model
- Flex Model
- Enriched Virtual Model

Modes of Examination: Assignment /Quiz / Project / Presentation / Course Work / Article reviews / Book Reviews / Reports / Written Exam / Jury / Survey / / any other method that suits to assess the given course outcome

Examination Scheme:

Components	Continuous Internal Assesment	End Term
Weightage (%)	**50**	**50**

Core Text:

T1. Sophia Rabe-Hesketh and Brian Everitt ,A Handbook of Statistical Analysis Using Stata, Chapman and Hall

Reference Books:

R1. Chandan Mukherjee, Howard White and Marc Wuyts ,Econometrics and Data Analysis for Developing Countries, Routledge

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping of COs and POs			
	Course Outcomes (COs)	**POs**	**Mapped to Levels**
CO1	**Apply** various advanced econometric techniques to real life cross section data for testing different hypotheses.	**PO1, PO2, PO3**	**L1, L2, L3, L4**
CO2	**Analyse** estimated results obtained from cross section real life data critically in line with existing economic theories.	**PO1, PO2, PO3**	**L3, L4, L5**
CO3	**Apply** various advanced econometric techniques to real life time series data to test different relationships.	**PO1, PO2, PO3, PO7, PO8**	**L4, L5, L6**
CO4	**Analyse** estimated time series regression outcomes critically.	**PO1, PO2, PO3, PO8**	**L3, L4, L5, L6**
CO5	**Assess** reliability of any given data set and use accurate techniques to forecast future trend of a variable.	**PO1, PO2, PO3, PO6, PO7, PO8**	**L3, L4, L5, L6**

		Domain specific knowledge and skills/ Acquire knowledge of advanced economic theories and adequately evaluate the issues related to economy, public policy, business and society	Problem Analysis and Critical thinking / Demonstrate an ability to construe data and information and critically examine the outcomes in relation to economic theories	Modern IT Tools / Efficiently adopt software (s) in conducting advanced analysis of economic data and other research oriented activities	Business and Society / Appraise the importance of economics as a discipline in context of business and society	Environment and sustainability / Draw inferences on concerns emerging from environmental changes as implied to society at large	Ethics / Hone ethical behavior and become sensitive towards the society	Leadership and Team work / Improve Leadership skills via developing strong emotional aptitude and become a lifelong leaner.	Communication: Develop verbal and non-verbal communication skills for a successful career in Research, Industry, Business and Entrepreneurship
Course Code	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
ECO21215	Econometric Analysis of Data	3	3	3	1	–	–	1	2

1=weakly mapped
2= moderately mapped
3=strongly mapped

Special paper - C

ECO21214	MULTIVARIATE DATA ANALYSIS	L	T	P	C
Version 1.0	Contact Hours: 60	3	1	0	4
Pre-requisites/Exposure	12th level English, Basic knowledge of Econometrics				
Co-requisites					

Course Objectives:

Multivariate data analysis is a specialized branch in Econometrics and Statistics to deal with the problems in involving multiple variables. This course aims to develop knowledge of theoretical and practical aspects of vital multivariate econometric methods. Students will be introduced to basic mathematics and statistics course as a pre-requisite for Multivariate data analysis. The course will help students understand different model specifications and accurately interpret estimation outcomes of multivariate models. This will also develop in students the ability to understand different project reports and journal articles involving multivariate data analysis and methods.

Course Outcomes:

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

CO1. **Understand** the use of basic mathematics and statistical techniques to deal with problem involving multiple variables.

CO2. **Understand** when and how to apply a multivariate econometric model.

CO3. **Assess** various limitations that different multivariate econometric models may face.

CO4. **Apply** cluster analysis, factor analysis, principal component analysis, multivariate regression analysis to multivariate data set.

Course Content:

Unit 1: Introduction and Overview (5 Hours)

Multivariate Analysis: A broad Definition and Narrow Definition; Concept of Variate; Choice of measurement scale; Summary Notes

Unit 2: Some Basic Statistical and Mathematical concept (15 Hours)

Univariate Data analysis; frequency distribution; Normal Distributions; Parameters and Statistics; Measurement of variability; Note on Estimation; Characteristics of Bivariate Data; Range restriction, pearson correlation in special cases; The Eta_Square measure; Phi coefficients; The Z` transformation; Linear regression; Statistical Control: A first look at Multivariate Relations. Basic definitions of Matrix; Basic Matrix Operations; Application of Matrix Algebra, dot product, matrix product, determinant, eigenvalues, eigenvectors, norm, inverse

Unit 3: Cluster Analysis (12 Hours)

Methods in Cluster Analysis; Graphical Representations; Distance Matrix; Clustering Variables; Summary

Unit 4: Principle Component Analysis (8 Hours)

Introduction; Illustration of PCA for two variables; Outline and examples of PCA; Illustrations and Further readings; Summary

Unit 5: Factor Analysis (5 Hours)

Introduction; Latent variable Models; Linear Single Factor model; General linear factor model; Choice of factors; Rotations; Factor Analysis for Binary Data; Factor analysis for ordered categorical data; Further readings; Summary

Pedagogy:

The Faculty may choose pedagogies suitable to the nature of course from following:

- Student Lecture and Presentation
- Case Study Analysis
- Teaching-learning Strategy using Multimedia
- Mind Mapping
- Chunking strategy
- Z to A Approach
- Collaborative and cooperative learning
- Anchored Instruction
- Peer Tutoring
- Microteaching and Simulated Teaching
- Blended learning
- Problem Based Learning (PBL)
- Rotation Model
- Flex Model
- Enriched Virtual Model

Modes of Examination: Assignment /Quiz / Project / Presentation / Course Work / Article reviews / Book Reviews / Reports / Written Exam / Jury / Survey / / any other method that suits to assess the given course outcome

Examination Scheme:

Components	Continuous Internal Assesment	End Term
Weightage (%)	50	50

Core Text:

T1 Ira H. Bernstein , Applied Multivariate Analysis, Springer-Verlag ,1988
T2. David J. Bartholomew,FionaSteele,IriniMoustaki,Jane I. Galbraith, Analysis of Multivariate Social Science Data, Taylor and Francis,2008.

Reference Books:

R1. Alvin C. Rencher, Methods of Multivariate Analysis, Second Edition, Willey and Sons,2002

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping of COs and POs			
	Course Outcomes (COs)	**POs**	**Mapped to Levels**
CO1	**Understand** the use of basic mathematics and statistical techniques to deal with problem involving multiple variables.	**PO1, PO2, PO3**	**L1, L2**
CO2	**Understand** when and how to apply a multivariate econometric model.	**PO1, PO2,PO3, PO6**	**L1, L2, L3**
CO3	**Assess** various limitations that different multivariate econometric models may face.	**PO1, PO2,PO3**	**L3, L4, L5**
CO4	**Apply** cluster analysis, factor analysis, principal component analysis, multivariate regression analysis to multivariate data set.	**PO1, PO2,PO3**	**L3, L4, 54, L6**

		Domain specific knowledge and skills/ Acquire knowledge of advanced economic theories and adequately evaluate the issues related to economy, public policy, business and society	Problem Analysis and Critical thinking / Demonstrate an ability to construe data and information and critically examine the outcomes in relation to economic theories	Modern IT Tools / Efficiently adopt software (s) in conducting advanced analysis of economic data and other research oriented activities	Business and Society / Appraise the importance of economics as a discipline in context of business and society	Environment and sustainability / Draw inferences on concerns emerging from environmental changes as implied to society at large	Ethics / Hone ethical behavior and become sensitive towards the society	Leadership and Team work / Improve Leadership skills via developing strong emotional aptitude and become a lifelong leaner.	Communication: Develop verbal and non-verbal communication skills for a successful career in Research, Industry, Business and Entrepreneurship
Course Code	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
ECO21214	Multivariate Data Analysis	3	3	3	-	-	1	-	-

1=weakly mapped
2= moderately mapped
3=strongly mapped

ECO21215	ANALYSIS OF BIG DATA	L	T	P	C
Version 1.0	Contact Hours - 60	3	1	0	4
Pre-requisites/Exposure	Statistics, Analysis of data(structured and unstructured),				
Co-requisites	Advance Statistical concepts				

Special Paper - D

Course Objectives

- To learn, understand and practice analysis of large volume of data using modern tools and techniques focusing on applications.
- To apply analytics on structured and unstructured data.
- Apply some machine learning and nlp techniques to understand the pattern to draw insights
- To Select and apply suitable statistical measures and analyze techniques for data of various structure and content and present summary statistics.

Course Outcomes

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

CO1. **Understand**Big Data and its Business Implications
CO2. **Evaluate** the characteristics of datasets and compare the trivial data and big data for various applications.
CO3. **Apply** advanced statistical analytical skills to test assumptions
CO4. **Create** new information and insights from large datasets
CO5. **Apply** some machine learning and natural language processing (NLP) techniques to understand the pattern to draw insights

Catalog Description

This course aims to equip the learner with a range of most relevant topics that pertain to contemporary analysis practices, and are foundational to the emerging field of big data. Learners are guided through the theoretical and practical differences between traditional datasets and Big Data datasets. An overview of the initial collection of data will be explored for multiple data sources. A formal grounding in analytical statistics is a major part of the module curriculum. Learners are expected to apply principles of statistical analytics to solve problems and able to enhance their decision making skills. Learners are able to develop knowledge and understand statistical analytics techniques and principles while applying these techniques and principles in typical real world scenarios.

Course Content

Unit I: 10 lecture hours

Overview of Big Data: What is Big Data? Buzz Words: Data Science, Data Analytics, Big Data ; Analysis versus Analytics, Use of Big Data analytics in the field of Business. Difference between Business Intelligence and Business analytics, Business Forecasting and Predictive analytics. Data Types: Structured and Unstructured, What triggered Big Data technologies?

Survey design and scales for qualitative and quantitative data, Future of data

Unit II: **10 lecture hours**

Overview of data mining: Association and Apriori, Market-basket Analysis, K-nearest neighbor problem. Clustering of Data

Exploratory Data Analysis: Detection of outliers, checking assumptions, preliminary selection of appropriate models, determining relationships among explanatory variables, assessing the direction and size of relationships between explanatory and outcome variables

Unit III: **10 lecture hours**

Role of Statistics in Analysis: Overview of statistical attributes (e.g. variance, standard deviation), probability distributions, illustrating probability distributions, Sampling, Data dispersion and spread, Correlation, Data exploration, p-value, confidence interval, hypothesis testing, t-test, goodness of fit, One-way Anova and two-way Anova. Analysis of Covariance.

Basics Architecture of Big data handling: Master-Slave/Master-Worker Architecture, Hadoop overview and history, Hadoop Ecosystem: Overview of HDFS and Mapreduce working

Unit IV: **8 lecture hours**

Basics and Usage of Machine Learning: Overview of Machine Learning as a analysis tool, Supervised and Unsupervised Learning, Training and Testing of data, Model selection, Implementation of regression using any analysis tool, Std error of estimates, Multicollinearity logistic regression, Support vector machines, Naïve Bayes, Bayesian Probability, Decision tree and random forest, Evaluating model performance.

Unit V: **7 lecture hours**

Natural Language Processing Overview: Steps of NLP, Sentiment Analysis, Lemmetization. Speech to word algorithm. Latent semantic indexing. Text classification, text summarization, Reporting, Graphing and Plotting Frequency Curves, Histograms, 2d and 3d Scatter Diagrams, graphical representation of regression and correlation information, contour plots, 3d plots, tools e.g. R, iPhython, Tableau,

Text Books

1. Michael Berthold, David J. Hand, ―Intelligent Data Analysis, Springer, Second Edition, 2007
2. Bill Franks, ―Taming the Big Data Tidal Wave: Finding Opportunities in Huge Data Streams with Advanced Analytics‖, Wiley and SAS Business Series, 2012.
3. ParthaSarathiBishnuVandanaBhattacharjee, Data Analysis, PHI Learning

Reference Books

1. Gareth James Daniela Witten Trevor Hastie Robert Tibshirani, -An Introduction to Statistical learning,
2. DT Editorial Services, Big Data, Black Book: Covers Hadoop 2, MapReduce, Hive, YARN, Pig, R and Data Visualization, Dreamtech Press; 1st edition (2016)

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination
Examination Scheme:

Components	Continuous Internal Assesment	End Term
Weightage (%)	50	50

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between Cos and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	**Understand** different concepts and theories related to multicurrency financial decision making and global financial markets.	**PO3, PO4**
CO2	**Apply** above understanding to solve problems related to multicurrency financial decision making and global financial markets.	**PO1, PO2**
CO3	**Evaluate** and innovate upon the existing models/frames.	**PO3, PO4**
CO4	**Create** some new model or framework for researching upon an issue or problem, find solution, conduct forecasting and suggest policy measures.	**PO2, PO1**
CO5	**Apply** some machine learning and natural language processing (NLP) techniques to understand the pattern to draw insights	**PO3, PO4**

		Domain specific knowledge and skills/ Acquire knowledge of advanced economic theories and adequately evaluate the issues related to economy, public policy, business and society	Problem Analysis and Critical thinking / Demonstrate an ability to construe data and information and critically examine the outcomes in relation to economic theories	Modern IT Tools / Efficiently adopt software (s) in conducting advanced analysis of economic data and other research oriented activities	Business and Society / Appraise the importance of economics as a discipline in context of business and society	Environment and sustainability / Draw inferences on concerns emerging from environmental changes as implied to society at large	Ethics / Hone ethical behavior and become sensitive towards the society	Leadership and Team work / Improve Leadership skills via developing strong emotional aptitude and become a lifelong leaner.	Communication: Develop verbal and non-verbal communication skills for a successful career in Research, Industry, Business and Entrepreneurship
Course Code	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
ECO21215	Analysis of Big Data	3	3	3	-	-	1	-	-

1=weakly mapped
2= moderately mapped
3=strongly mapped

Special Paper: Track –II (Applied Financial Economics and Data Analysis)

ECO21216	FINANCIAL INSTITUTIONS AND MARKETS	L	T	P	C
Version 1.0	Contact Hours - 60	3	1	0	4
Pre-requisites/Exposure	UG Level Knowledge of Accounting and Finance				
Co-requisites	-				

Paper - A

Course Objectives

This course aims at looking into how the saved income of the individuals and corporate entities takes the form of financial securities and enter the production system of the country as capital. The objective of the course is to discuss the classification financial securities with respect to their risk and return profile and the tenure of investment. In the process the price discovery of these assets through the digital platforms as a result of trading activities within the regulatory ambit will also discussed keeping in view the interests of the issuers as well as the investors. The course intends to develop knowledge about the working of both money market and capital market.

Course Outcomes

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

CO1. **Comprehend** different concepts, theories and problems related to multicurrency financial products and their markets, financial institutions and regulatory institutions in national and global markets.
CO2. **Identify** different classes of securities and their risk-return profile,
CO3. **Apply** existing models/frames to resolve an issue.
CO4. **Develop** capacity to participate in interdisciplinary research.

Course Content

Unit 1: Introduction to Financial Assets [14 Hours]

Concept of Financial Assets and their Risks; Relationship between Capital, Investment and Financial Assets; Classification of Financial Assets according to Risk-Return Profile; Overview of financial asset markets and derivative markets; Introduction to Regulatory Role of the Government

Unit 2: Capital Market [9 Hours]

Introduction to Stock and Debt; Futures, Forward Rate Agreements and Options on Stocks and Interest Rates; Risk of non-delivery transactions; Overview of Stock Exchanges and SEBI; SEBI‟s Risk Management System; Regulation of intermediaries

Unit 3: Financial Risk Hedging Strategies [15 Hours]

Introduction to derivatives and options; forward and futures contracts; options; Delta, Gamma, Theta, Vega, Rho, other derivatives; forward and future prices; stock index futures; interest rate futures; the use of futures for hedging; duration-based hedging strategies; option markets; call and put options; factors affecting option prices; put-call parity; Introduction to option trading strategies: spreads; straddles; strips and straps; strangles; the principle of arbitrage; discrete processes and the binomial tree model; risk-neutral valuation

Unit 4: Money Market [12 Hours]

Concepts and Mechanisms; Guidelines of Reserve Bank of India; Money Market instruments; Role of Clearing Corporations of India

Unit 5: Other Financial Markets [5 Hours]

Mutual funds, Insurance markets, Venture capital funds

Pedagogy:

The Faculty may choose pedagogies suitable to the nature of course from following:

- Student Lecture and Presentation
- Case Study Analysis
- Teaching-learning Strategy using Multimedia
- Mind Mapping
- Chunking strategy
- Z to A Approach
- Collaborative and cooperative learning
- Anchored Instruction
- Peer Tutoring
- Microteaching and Simulated Teaching
- Blended learning
- Problem Based Learning (PBL)
- Rotation Model
- Flex Model
- Enriched Virtual Model

Modes of Examination: Assignment /Quiz / Project / Presentation / Course Work / Article reviews / Book Reviews / Reports / Written Exam / Jury / Survey / / any other method that suits to assess the given course outcome

Examination Scheme:

Components	Continuous Internal Assesment	End Term
Weightage (%)	**50**	**50**

Core Text:

Bhole, L. M. & Mahakud, J. (2017). *Financial Institutions and Markets: Structure, Growth & Innovation*. McGraw Hill Education, 6th edition or latest

Hull, John C. (2005), *Options, Futures and Other Derivatives*, Pearson Education, 6th edition or latest.

Fabozzi, F. J., Modigliani F. & Jones F. J. (2007). *Foundation of Financial Markets and Institutions*. New York: FT Prentice Hall.

Reference Book

Mishkin F. S. & Eakins S.G. (2012). *Financial Markets and Institutions*, Boston: Prentice Hall, 7th Edition or latest.

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping of COs and POs			
	Course Outcomes (COs)	**POs**	**Mapped to Levels**
CO1	**Comprehend** different concepts, theories and problems related to multicurrency financial products and their markets, financial institutions and regulatory institutions in national and global markets.	**PO1, PO2**	**L1, L2, L3**
CO2	**Identify** different classes of securities and their risk-return profile,	**PO1, PO2**	**L2, L3, L4**
CO3	**Apply** existing models/frames to resolve an issue.	**PO1, PO2, P04, PO8**	**L3, L4, L5**
CO4	**Develop** capacity to participate in interdisciplinary research.	**PO1, PO2, PO4, PO8**	**L5, L6**

		Domain specific knowledge and skills/ Acquire knowledge of advanced economic theories and adequately evaluate the issues related to economy, public policy, business and society	Problem Analysis and Critical thinking / Demonstrate an ability to construe data and information and critically examine the outcomes in relation to economic theories	Modern IT Tools / Efficiently adopt software (s) in conducting advanced analysis of economic data and other research oriented activities	Business and Society / Appraise the importance of economics as a discipline in context of business and society	Environment and sustainability / Draw inferences on concerns emerging from environmental changes as implied to society at large	Ethics / Hone ethical behavior and become sensitive towards the society	Leadership and Team work / Improve Leadership skills via developing strong emotional aptitude and become a lifelong leaner.	Communication: Develop verbal and non-verbal communication skills for a successful career in Research, Industry, Business and Entrepreneurship
Course Code	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
ECO21216	Financial Institutions and Markets	3	3	–	2	–	–	–	2

1=weakly mapped
2= moderately mapped
3=strongly mapped

Paper - B

ECO21217	CORPORATE FINANCE	L	T	P	C
Version 1.0	Contact Hours - 60	3	1	0	4
Pre-requisites/Exposure	UG Level Knowledge of Accounting and Finance				
Co-requisites	-				

Course Objectives:

This course plans to discuss different concepts, theories and problems related to financing decisions in the globalized markets and from globalized institutions. It intends to train the learner's mind set to apply the existing models/frames to resolve an issue. The objective is also to expose the learner to interdisciplinary research and groom the learner's mind to innovate upon the existing frame of understanding.

Course Outcomes:

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

CO1. Comprehend ways and sources of procuring cheapest funds for ongoing business.

CO2. Analyse ways and avenues of parking funds profitably for proprietary purpose of the ongoing business.

CO3. Examinestock market functioning and different methods of valuation of stocks and debt instruments.

CO4. Developinsights about working capital management.

Course Content

Unit-1: Organizing a Business **(10 Hours)**

Forms of Organizations – Sole Proprietorship, Partnership, Company, Limited Liability Partnership, others**,** Role of a Financial Manager in a business organization**,** Decision areas – Capital Budgeting decisions, Working Capital Management decisions, Financing decisions, Dividend decisions**,** Financial Institutions and Markets, Roles of different financial institutions, Goals of a business organization: Profit Maximization vs. Shareholders‟ Wealth Maximisation**,** Agency Problem – Conflicts and Resolutions

Unit-2: Sources of Finance ***(11 Hours)***

Internal sources, External Sources and Owned Sources, Venture Capital Financing, Capital Market, Hybrid Products, Structured Products, Money Market - Short Term Sources: Trade Credit, Factoring, Bills of Exchange, Commercial Paper, Banks and Financial Institutions

Unit-3: Issue Procedure and Valuation of Stocks and Debts **(12 Hours)**

Stocks and the Stock Market , Book Values, Liquidation Values, and Market Values, Valuation of Stocks, Valuation of Debt Instruments, Alternative ways of calculating cost of capital, Discounted Cash Flow, Alternative methods of valuation of companies, Use of financial statements in valuing a company. Issue procedure of Sticks and Debt Instruments: Public Offer, Private Placement, Role of Investment Banks in issuing securities by their clients, Role of Stock Exchanges in Public Offers, SEBI Guidelines

Unit-4: Short Term Financing-Working Capital Management (10 Hours)

Concepts of Working Capital, Components of Current Assets , Permanent and Variable Working Capital , Determinants of Working Capital , Approaches for Working Capital Management , Estimating Working Capital Needs, Current Assets Financing Policy, Operating and Cash Conversion Cycle

Unit 5: Return, Risk and Capital Budgeting (12 Hours)

Introduction to risk, return and opportunity cost of capital: measuring portfolio risk, diversification and its limits. Return and risk: Capital Asset Pricing Model, validity and role of Capital Asset Pricing Model, Some alternative view of risk and return: Consumption betas, the Arbitrage Pricing Theory, Three-Factor model. Risk, return and capital budgeting: Cost of equity capital, estimation of beta, determinants of beta, cost of capital with debt. Practical problems in capital budgeting

Pedagogy:

The Faculty may choose pedagogies suitable to the nature of course from following:

- Student Lecture and Presentation
- Case Study Analysis
- Teaching-learning Strategy using Multimedia
- Mind Mapping
- Chunking strategy
- Z to A Approach
- Collaborative and cooperative learning
- Anchored Instruction
- Peer Tutoring
- Microteaching and Simulated Teaching
- Blended learning
- Problem Based Learning (PBL)
- Rotation Model
- Flex Model
- Enriched Virtual Model

Modes of Examination: Assignment /Quiz / Project / Presentation / Course Work / Article reviews / Book Reviews / Reports / Written Exam / Jury / Survey / / any other method that suits to assess the given course outcome

Examination Scheme:

Components	Continuous Internal Assesment	End Term
Weightage (%)	**50**	**50**

Core Text

1. Brealey, R.A., Myers, S.C. and Allen, F. (2014). *Principles of Corporate Finance, 11thEd*, McGrawHill. New York
2. J. Tirole. *The Theory of Corporate Finance*, Princeton University Press, 2006.
3. R. N. Bebczuk. *Asymmetric Information in Financial Markets: Introduction and Applications.* Cambridge University Press, 2003.
4. S. Benninga. *Financial Modeling*, The MIT Press, 2008.
5. Terence C.M. Tse. Corporate Finance: The Basics. 2017

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping of COs and POs			
	Course Outcomes (COs)	**POs**	**L1, L2,**
CO1	**Comprehend** ways and sources of procuring cheapest funds for ongoing business.	**PO1, PO2**	**L3, L4**
CO2	**Analyse** ways and avenues of parking funds profitably for proprietary purpose of the ongoing business.	**PO1, PO2**	**L2, L3, L5**
CO3	**Examine** stock market functioning and different methods of valuation of stocks and debt instruments.	**PO1, PO2, P04, PO7, PO8**	**L1, L5, L6**
CO4	**Develop** insights about working capital management.	**PO1, PO2, PO4, PO7, PO8**	**L4, L5, L6**

		Domain specific knowledge and skills/ Acquire knowledge of advanced economic theories and adequately evaluate the issues related to economy, public policy, business and society	Problem Analysis and Critical thinking / Demonstrate an ability to construe data and information and critically examine the outcomes in relation to economic theories	Modern IT Tools / Efficiently adopt software (s) in conducting advanced analysis of economic data and other research oriented activities	Business and Society / Appraise the importance of economics as a discipline in context of business and society	Environment and sustainability / Draw inferences on concerns emerging from environmental changes as implied to society at large	Ethics / Hone ethical behavior and become sensitive towards the society	Leadership and Team work / Improve Leadership skills via developing strong emotional aptitude and become a lifelong leaner.	Communication: Develop verbal and non-verbal communication skills for a successful career in Research, Industry, Business and Entrepreneurship
Course Code	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
ECO21217	Corporate Finance	3	3	–	2	–	–	2	2

1=weakly mapped
2= moderately mapped
3=strongly mapped

Special Paper - C

ECO21218	PRINCIPLES OF INVESTMENT BANKING	L	T	P	C
Version 1.0	Contact Hours - 60	3	1	0	4
Pre-requisites/Exposure	Knowledge of banking activities				
Co-requisites	-				

Course Objectives

Investment banks work as catalysts to the financial markets. This course plans to discuss different concepts, theories and problems related to investment banks, their products, their functions as intermediaries and the concerned regulatory institutions. The course provides theoretical insights into the existing products, systems and frames in order to detect some issues or problems and find solutions and suggest policy measures. This course also explains how the investment banks contribute towards building a theory of financial system architecture through various specialized functions.

Course Outcomes

On completion of this course, the learner will be able to

CO1. **Design** ways and sources of raising capital for issuer clients
CO2. **Design** ways and avenues of parking funds of investor clients.
CO3. **Understand** the advantages and disadvantages of procurement-sources of capital and related regulatory guidelines and implications
CO4. **Understand** the advantages and disadvantages of parking-destinations of capital and related regulatory guidelines and implications

Course Content

Unit 1 **13 lecture hours**

Introduction

Concept of Investment Banking and Merchant Banking;
Concept of Commercial Banking;
Concept of Conflict of Interests;
Commercial Banking within and without Investment Banking;
Concept of Universal Banking;
Why not Universal Banking - Conflict of Interests
Types of Investment Banks- Financial Holding Companies, Full-service Investment Banks, Boutique Investment Banks; Important Specialized Services; Equity Offering and Bond Offering; Merger and Acquisitions

Unit 2 **12 lecture hours**

Equity Offerings

Risk-return Profile of Equity;
The Offering Structure;
American Depository Receipts (ADRs) and Global Depository Receipts (GDR); \
Price-Setting Mechanisms;
The Key Steps of the IPO Process;
Project Finance with Equity

Unit 3 **8 lecture hours**

Debt Offerings

Risk Return Profile of Debt
Bond Offerings;
Credit Ratings;
Securitization;
Syndicated Loans;
Project Finance with Debt

Unit 4 **12 lecture hours**

Merger and Acquisitions

The Concept of Mergers and Acquisitions;
Why Companies Merge and Acquire;
Integration and Conglomeration;
The Merger and Acquisition Lifecycle;
Measuring the Success of Mergers and Acquisitions;
A Brief History of Mergers and Acquisitions

Pedagogy:

The Faculty may choose pedagogies suitable to the nature of course from following:

- Student Lecture and Presentation
- Case Study Analysis
- Teaching-learning Strategy using Multimedia
- Mind Mapping
- Chunking strategy
- Z to A Approach
- Collaborative and cooperative learning
- Anchored Instruction
- Peer Tutoring
- Microteaching and Simulated Teaching
- Blended learning
- Problem Based Learning (PBL)
- Rotation Model
- Flex Model
- Enriched Virtual Model

Modes of Examination: Assignment /Quiz / Project / Presentation / Course Work / Article reviews / Book Reviews / Reports / Written Exam / Jury / Survey / / any other method that suits to assess the given course outcome

Examination Scheme:

Components	Continuous Internal Assesment	End Term
Weightage (%)	**50**	**50**

Core Texts:

1. *Handbook of Finance*, Volume I, F Fabbozie (Ed.), Wiley & Sons
2. *Investments*, Z Bodie, A Kane and A Marcus, McGraw-Hill

Reference Books:

1. Corporate Finance Institute, Investment Banking Manual, https://cdn.corporatefinanceinstitute.com/assets/Investment-Banking-Manual-CFI_2019.pdf
2. Mathews, K. and Thompson, J., The Economics of Banking, John Wiley and Sons

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Program Outcomes**
CO1	**Design** ways and sources of raising capital for issuer clients	**PO1,PO2, PO4**
CO2	**Design** ways and avenues of parking funds of investor clients	**PO1, PO2, PO4, PO7, PO8**
CO3	**Understand** the advantages and disadvantages of procurement-sources of capital and related regulatory guidelines and implications	**PO1, PO4, PO8**
CO4	**Understand** the advantages and disadvantages of parking-destinations of capital and related regulatory guidelines and implications	**PO1, PO4, PO8**

		Domain specific knowledge and skills/ Acquire knowledge of advanced economic theories and adequately evaluate the issues related to economy, public policy, business and society	Problem Analysis and Critical thinking / Demonstrate an ability to construe data and information and critically examine the outcomes in relation to economic theories	Modern IT Tools / Efficiently adopt software (s) in conducting advanced analysis of economic data and other research oriented activities	Business and Society / Appraise the importance of economics as a discipline in context of business and society	Environment and sustainability / Draw inferences on concerns emerging from environmental changes as implied to society at large	Ethics / Hone ethical behavior and become sensitive towards the society	Leadership and Team work / Improve Leadership skills via developing strong emotional aptitude and become a lifelong leaner.	Communication: Develop verbal and non-verbal communication skills for a successful career in Research, Industry, Business and Entrepreneurship
Course Code	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
ECO21218	Principles of Investment Banking	3	3	-	3	-	-	1	2

1=weakly mapped
2= moderately mapped
3=strongly mapped

Special paper - D

ECO21219	FINANCIAL ECONOMICS	L	T	P	C
Version 1.0	Contact Hours: 40	3	1	0	4
Pre-requisites/Exposure	UG Level Knowledge of Economics & Finance				
Co-requisites	--				

Course Objectives

- To develop the knowledge of financial tools to understand the profitability of a firm.
- To develop the knowledge of activities of the financial markets.

Course Outcomes

On completion of this course, the students will be able to—

CO1. To understand the financial structure of a firm.

CO2. To analyze the financial structure by different financial tools.

CO3. Tounderstandtheactivitiesoffinancialmarketsusingmacroeconomictools.

CO4. Identify and understand the reasons behind various financial crises

Course Description

This course is designed to provide both a self-contained study of the principles of financial economics and a bridge to higher level courses in economics and finance, This course introduces students to the economics of finance with special emphasis on stock market analysis, understanding financial ratios, asset pricing and the valuation of risky cash flows. Some of the basic models used to benchmark the valuation of assets and derivatives are studied in detail.

Unit-1Stock Market, Interest rate and Banking:

Stock Market. Tobin's Q Model: Tobin's Q and Economic Activity; Dividend Growth Model.

Unit-2 Capital Structure and basic concepts:

Modigliani-Miller theorem and the financial structure puzzle; Corporate tax and personal tax;Limitsto debtandcostof financialdistress; Peckingordertheory.

Unit-3 Capital budgeting and Financial Ratio analysis:

Net Present value approach; Payback period method; Discounted payback period method;Internal rate of return; Profitability index; Financial statement and Ratio analysis;

Unit-4 Derivativemarket:

Forwards,Futures,Options and Swap: Forward contracts; Forward Prices; Swaps; Basics of Futures contracts; Future Prices; Relation to expected spot price; The Perfect hedge; The Minimum-variance hedge; Optimal hedging; The boundary space for call and put options; Option prices and interest rate; Option prices and stock price movements; Option prices and the riskiness of stocks;

Unit-5 Exchange rate dynamics & financial crisis:

Dornbusch's Overshooting Model; Overshooting model in the dependent economy framework; Indicators of the financial crisis; Alternative approaches to the crisis.

References:

1. J.C.Hull,*Options,Futures and Other Derivatives*,PearsonEducation,2014.
2. J.Tirole,*The theory of Corporate finance*,PrincetonUniversityPress,2010.
3. JonathanB.Berk,JarradV.T.Harford,PeterM.DeMarzo,DavidStangeland&AndrásMarosi, *FundamentalsofCorporateFinance*,PearsonEducationCanada,2019.
4. RichardA.Brealey,StewartC.Myers&FranklinAllen,*PrinciplesofCorporateFinance*,McGrawHill, 2011.
5. RobertW.Kolb,*Futures,Options,andSwaps*,Wiley,1999.
6. StephenA.Ross,MarkChristensen,MichaelDrew,RobertBianchi,RandolphWestfield&BradfordD.Jordan,*Fundamentals ofCorporateFinance*,McGraw-Hill,2013.

Modes of Examination: Assignment /Quiz / Project / Presentation / Course Work / Article reviews / Book Reviews / Reports / Written Exam / Jury / Survey / / any other method that suits to assess the given course outcome

Examination Scheme:

Components	Continuous Internal Assesment	End Term
Weightage (%)	**50**	**50**

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and Pos			
	Course Outcomes (COs)	**Mapped Program Outcomes**	**Mapped at Levvels**
CO1	To understand the financial structure of a firm.	**PO1, PO2, PO4, PO6**	**L1, L2, L5**
CO2	To analyze the financial structure by different financial tools.	**PO1, PO2, PO4, PO6, PO8**	**L1, L2, L4**
CO3	To understand the activities of financial markets using macroeconomic tools.	**PO1, PO6, PO7, PO8**	**L3, L6**
CO4	Identify and understand the reasons behind various financial crises	**PO1, PO2, PO6**	**L4, L5, L6**

		Domain specific knowledge and skills/ Acquire knowledge of advanced economic theories and adequately evaluate the issues related to economy, public policy, business and society	Problem Analysis and Critical thinking / Demonstrate an ability to construe data and information and critically examine the outcomes in relation to economic theories	Modern IT Tools / Efficiently adopt software (s) in conducting advanced analysis of economic data and other research oriented activities	Business and Society / Appraise the importance of economics as a discipline in context of business and society	Environment and sustainability / Draw inferences on concerns emerging from environmental changes as implied to society at large	Ethics / Hone ethical behavior and become sensitive towards the society	Leadership and Team work / Improve Leadership skills via developing strong emotional aptitude and become a lifelong leaner.	Communication: Develop verbal and non-verbal communication skills for a successful career in Research, Industry, Business and Entrepreneurship
Course Code	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
ECO21219	Financial Economics	3	3	-	2	-	3	1	2

1=weakly mapped 2= moderately mapped 3=strongly mapped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