University of Kerala

Four-Year Undergraduate Programme

(UoK FYUGP)

Syllabus

ECONOMICS

May 2024

About the Discipline

Economics is one of the most dynamic and important fields of study that touches almost every aspect of our lives. Apart from influencing the articulation and molding of government policies, it gives us precious knowledge about the economic base of the evolution and functioning of societies and the global economy. The BA Economics Honours Degree Course intends to provide the students with a comprehensive knowledge of and application of economic theories in real-world situations by acquiring a thorough grounding in the concepts and measurement methods of economic problems and phenomena. The students will be exposed to quantitative and qualitative data by using statistical software to get a better understanding of the underlying patterns, and trends as well as build economic models, simulations, and forecasting so that skills that are relevant and useful in the various avenues in the modern job market are acquired. They also gain expertise in reporting, writing, and interpreting academic findings for the use of policymakers and development practitioners. The students will be trained to obtain rigorous domain knowledge in Economics, Mathematical and Statistical analysis and also attain a strong foundation in Finance, and data analysis, exposure to Artificial Intelligence, Data Science, and programming skills, using R, and Python. The course also uses a multidisciplinary approach to develop critical faculty to analyze data, policy, and value addition for a better social life and find solutions for complex economic issues.

Graduate Attributes

Graduate attributes bridge the gap between academia and the real world, fostering lifelong learning and meaningful contributions. They denote the skills, competencies, and high-level qualities that a student should acquire during their university education. Apart from gathering content knowledge, these attributes go beyond the assimilation of information to its application in various contexts throughout a graduate's life. It aims to inculcate the art of critical thinking, problem-solving, professionalism, leadership readiness, teamwork, communication skills, and intellectual breadth of knowledge. The University of Kerala envisages the path of guiding the student's journey to shape these attributes uniquely, making them integral to personal growth and success in various spheres of life. The University strives to ensure that these graduate attributes are not just checkboxes, but play a pivotal role in shaping the students into capable, compassionate, and responsible individuals with a high degree of social responsibility.

Program Outcomes (PO)

No.	Program Outcomes (POs)
PO-1	**Critical thinking** ○ analyze information objectively and make a reasoned judgment ○ draw reasonable conclusions from a set of information, and discriminate between useful and less useful details to solve problems or make decisions ○ identify logical flaws in the arguments of others ○ evaluate data, facts, observable phenomena, and research findings to draw valid and relevant results that are domain-specific
PO-2	**Complex problem-solving** ○ solve different kinds of problems in familiar and no-familiar contexts and apply the learning to real-life situations ○ analyze a problem, generate and implement a solution, and to assess the success of the plan ○ understand how the solution will affect both the people involved and the surrounding environment
PO-3	**Creativity** ○ produce or develop original work, theories, and techniques ○ think in multiple ways to make connections between seemingly unrelated concepts or phenomena ○ add a unique perspective or improve existing ideas or solutions ○ generate, develop, and express original ideas that are useful or have values
PO-4	**Communication skills** ○ convey or share ideas or feelings effectively ○ use words in delivering the intended message with utmost clarity ○ engage the audience effectively ○ be a good listener who are able to understand, respond and empathize with the speaker ○ confidently share views and express himself/herself
PO-5	**Leadership qualities** ○ work effectively and lead respectfully with diverse teams ○ build a team working towards a common goal ○ motivate a group of people and make them achieve the best possible solution. ○ help and support others in their difficult times to tide over the adverse situations with courage

PO-6	**Learning 'how to learn' skills**
	○ acquire new knowledge and skills, including 'learning how to learn skills, that are necessary for pursuing learning activities throughout life, through self-paced and self-directed learning ○ work independently, and identify appropriate resources required for further learning ○ acquire organizational skills and time management to set self-defined goals and targets with timelines ○ inculcate a healthy attitude to be a lifelong learner
PO-7	**Digital and technological skills**
	○ use ICT in a variety of learning and work situations, access, evaluate, and use a variety of relevant information sources ○ use appropriate software for analysis of data ○ understand the pitfalls in the digital world and keep safe from them
PO-8	**Value inculcation**
	○ embrace and practice constitutional, humanistic, ethical, and moral values in life including universal human values of truth, righteous conduct, peace, love, nonviolence, scientific temper, citizenship values ○ formulate a position/argument about an ethical issue from multiple perspectives ○ identify ethical issues related to work, and follow ethical practices, including avoiding unethical behavior such as fabrication, falsification, or misrepresentation of data, or committing plagiarism, and adhering to intellectual property rights ○ adopt objective, unbiased, and truthful actions in all aspects of work

Programme Specific Outcomes (PSO)

No.	Upon completion of the Programme, the graduate will be able to
PSO-1	Examine theoretical, conceptual, and methodological aspects of Economics.
PSO-2	Address diverse development issues and propose solutions.
PSO-3	Develop cognitive, analytical, and research skills focusing on learning digital technologies and software adaptability.
PSO-4	Interact with institutions, and markets while integrating sustainable development principles.

PSO-5	Enhance leadership and communication skills through managerial capacity building.
PSO-6	Promote creativity, value, and ethical behavior in life.

FYUGP- ECONOMICS

PROGRAMME STRUCTURE					
Semester	**Course Code**	**Course name**	**Type**	**Level**	**Credit**
Discipline Specific Core					
1	UK1DSCECO100	Principles of Economics	DSC	100-199	4
	UK1DSCECO101	Fundamentals of Microeconomics	DSC	100-199	4
	UK1DSCECO102	History of Economic Thought	DSC	100-199	4
	UK1DSCECO103	Issues of Indian Economy	DSC	100-199	4
	UK1DSCECO104	Regional Economics	DSC	100-199	4
	UK1DSCECO105	Agricultural Economics	DSC	100-199	4
Multi-Disciplinary Course (can select one)					
1	UK1MDCECO100	Economics for Everyone	MDC	100-199	3
	UK1MDCECO101	Sustainable Development	MDC	100-199	3
Discipline Specific Core					
2	UK2DSCECO100	Tools for Economic Analysis	DSC	100-199	4
	UK2DSCECO101	Fundamentals of Macroeconomics	DSC	100-199	4
	UK2DSCECO102	International Political Economy	DSC	100-199	4
	UK2DSCECO103	Managerial Economics	DSC	100-199	4
	UK2DSCECO104	Industrial Economics	DSC	100-199	4
	UK2DSCECO105	Economic History of India	DSC	100-199	4
Multi-Disciplinary Course (can select one)					
2	UK2MDCECO100	Global Economic Issues	MDC	100-199	3
	UK2MDCECO101	Survey Techniques in Social Sciences	MDC	100-199	3
Discipline Specific Core					
3	UK3DSCECO200	Microeconomics-1	DSC	200-299	4

	UK3DSCECO201	Human Resource Planning	DSC	200-299	4
	UK3DSCECO202	Economic Demography	DSC	200-299	4
	UK3DSCECO203	Economics of the Service Sector	DSC	200-299	4
	UK3DSCECO204	Money and Banking	DSC	200-299	4
Discipline-Specific Elective (can select one)					
3	UK3DSEECO200	Behavioral Economics	DSE	200-299	4
	UK3DSEECO201	Economics of Insurance	DSE	200-299	4
Value Added Course					
3	UK3VACECO200	Environment and Climate Change	VAC	200-299	3
Discipline Specific Core					
4	UK4DSCECO200	Macroeconomics -1	DSC	200-299	4
	UK4DSCECO201	Mathematics for Economics-I	DSC	200-299	4
	UK4DSCECO202	Economics of Migration	DSC	200-299	4
	UK4DSCECO203	Monetary Economics	DSC	200-299	4
	UK4DSCECO204	Economics of labour	DSC	200-299	4
Discipline-Specific Elective (can select one)					
4	UK4DSEECO200	Environmental Economics	DSE	200-299	4
	UK4DSEECO201	Foundations of Data Science	DSE	200-299	4
Value Added Course					
4	UK4VACECO200	Public Policy, Value, and Ethics	VAC	200-299	3
	UK4VACECO201	Women and Development	VAC	200-299	3
Skill Enhancement Course (can select one)					
4	UK4SECECO200	Securities Market Analysis	SEC	200-299	3
	UK4SECECO201	Logistics and Transportation Economics	SEC	200-299	3
4	**Summer Internship (Mandatory)**				
Discipline Specific Core					
5	UK5DSCECO300	Indian Economy	DSC	300-399	4
	UK5DSCECO301	International Economics -1	DSC	300-399	4
	UK5DSCECO302	Statistical Methods for Economics	DSC	300-399	4

	UK5DSCECO303	Economics of Education	DSC	300-399	4
	UK5DSCECO304	Economics of Health	DSC	300-399	4
	UK5DSCECO305	Development Policy Issues in Emerging and Frontier Economies	DSC	300-399	4
Discipline-Specific Elective (can select two)					
5	UK5DSEECO300	Research Methodology in Economics	DSE	300-399	4
	UK5DSEECO301	Public Economics	DSE	300-399	4
	UK5DSEECO302	Artificial Intelligence and Machine Learning in Economics	DSE	300-399	4
Skill Enhancement Course (can select one)					
5	UK5SECECO300	Start-Up Management	SEC	300-399	3
	UK5SECECO301	Environmental Impact Assessment	SEC	300-399	3
Discipline Specific Core					
6	UK6DSCECO300	Econometrics -I	DSC	300-399	4
	UK6DSCECO301	Development Economics	DSC		4
	UK6DSCECO302	International Economics -II	DSC	300-399	4
	UK6DSCECO303	Economics of Disaster Management	DSC	300-399	4
	UK6DSCECO304	Operations Research	DSC	300-399	4
	UK6DSCECO305	Mathematical Economics	DSC	300-399	4
Discipline-Specific Elective (can select two)					
6	UK6DSEECO300	Kerala Economy	DSE	300-399	4
	UK6DSEECO301	Financial Econometrics	DSE	300-399	4
	UK6DSEECO302	Gender Economics	DSE	300-399	4
Skill Enhancement Course (can select one)					
6	UK6SECECO300	Introduction to Academic Writing in Social Science	SEC	300-399	3
	UK6SECECO301	Data Analysis in Spreadsheet and R	SEC	300-399	3
Discipline Specific Core					
7	UK7DSCECO400	Microeconomics-II	DSC	400-499	4
	UK7DSCECO401	Macroeconomics-II	DSC	400-499	4

	UK7DSCECO300	Kerala's Development Experience	DSC	300-399	4
	UK7DSCECO301	Indian Economic Development	DSC	300-399	4
	UK7DSCECO302	Public Finance Management	DSC	300-399	4
Discipline-Specific Elective (can select one)					
7	UK7DSEECO300	Open-Economy Macroeconomics	DSE	400-499	4
	UK7DSEECO301	Mathematics for Economics II	DSE	400-499	4
	UK7DSEECO302	Econometrics II	DSE	400-499	4
Mandatory for Honours with Research					
8	UK8RPHECO400	Research Project	DSC	400-499	-
Mandatory for UG Honours					
8	UK8CIPECO400	Internship Project	DSC	400-499	-

Semester I

Course Code	Discipline Specific Core		Level
UK1DSCECO100	Principles of Economics	DSC	100-199
UK1DSCECO101	Fundamentals of Microeconomics	DSC	100-199
UK1DSCECO102	History of Economic Thought	DSC	100-199
UK1DSCECO103	Issues of Indian Economy	DSC	100-199
UK1DSCECO104	Regional Economics	DSC	100-199
UK1DSCECO105	Agricultural Economics	DSC	100-199
Multi-Disciplinary Course (can select one)			
UK1MDCECO100	Economics for Everyone	MDC	100-199
UK1MDCECO101	Sustainable Development	MDC	100-199

Discipline Specific Core

University of Kerala

Discipline	ECONOMICS				
Course Code	UK1DSCECO100				
Course Title	PRINCIPLES OF ECONOMICS				
Type of Course	DSC				
Semester	I				
Academic Level	100 - 199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	Basic understanding of Economics				
Course Summary	The course introduces the fundamental concepts, theories, and principles of Economics. It provides a necessary foundation for understanding the workings of economies at the micro and macro levels.				

Detailed Syllabus:

Module	Unit	Content	Hrs.
I		**Introduction to Economics**	10
	1	Economics-Definitions-Scarcity and Choice- -Trade-offs in Economics-opportunity cost-Rationality	
	2	Role of Assumptions-Economic Models-Circular Flow of Income-Production Possibility Frontier- Positive and Normative Economics. Techniques of Economic Analysis: Theories, Models, and Tools.	
	3	Micro and Macro Economics, Capitalism-Socialism-Mixed Economy-Market Economy	
II		**Principles of Micro Economics**	15
	1	Demand and Supply-Determinants-Shifts in demand and supply curves- -the role of Prices in allocating resources.	
	2	Equilibrium - Elasticity - Consumer equilibrium – Utility-Marginal utility – Consumer surplus - Production – factors of production, production function – Laws – Total Revenue, Average Revenue, Marginal Revenue	
	3	Costs – Total Cost, Variable and Fixed costs, Average Cost, Marginal cost– Short Run and Long Run costs.	
III		**Principles of Macroeconomics**	15
	1	Basic issues in macroeconomics-instability of output, Inflation, unemployment, Inflation and Unemployment relationship, stability, and business cycles.	
	2	Measurement of macroeconomic variables-National Income Accounting.	
	3	Measurement of gross domestic product- product, income, and expenditure method- Personal income and disposable income- real versus nominal GDP.	
IV		**Economic Development and International Trade.**	10
	1	Meaning of Development – Development and Growth- measuring development-- Problems of Growth- Developing Countries and Developed Countries- differences.	
	2	International Trade-Absolute Advantage-Comparative Advantage-Gains from Trade.	
V		**Analysis of Economic Issues**	10
	1	Discussion on Income Inequality-Poverty-Unemployment-Trade Protectionism-Climate Change-Technological Disruption-Debt.	
	2	Economic data sets can be used to assess and analyze economic growth rates, unemployment, inflation, and other economic measures.	
	3	Datasets containing economic data can be analyzed using graphs to understand trends and patterns and draw conclusions about economic and structural changes.	

Reading List

Gregory Mankiw, Principles of Economics (2019), Cengage.

Richard T Froyen, Macro Economics-Theories, and Policies, Pearson

Stephen Dobson and Susan Palfreman, Introduction to Economics, Oxford University Press

Samuelson, Paul A and William D Nordhaus, Economics (18th Edition), Mc Graw Hill.

Nilanjan Banik, "The Indian Economy: A Macroeconomic Perspective", Sage Publication

https://data.worldbank.org/

https://www.imf.org/en/Data

Economic Survey, GOI

www.mospi.nic.in

www.censusindia.gov.in

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Solid understanding of the fundamental economic concepts and theories.	U	PSO-1
CO-2	Analyze economic problems and make informed decisions using economic reasoning.	U, An	PSO-1 PSO-2
C0O-3	Apply economic principles to evaluate real-world problems and to provide solutions.	Ap, E	PSO-2
CO-4	Interpret economic data and trends to assess economic performance	Ap, E	PSO-3

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Solid understanding of the fundamental economic concepts and theories.	PO-1 PSO-1	U	F, C	L	
CO-2	Analyze economic problems and make informed decisions using economic reasoning	PO-2 PSO-1 PSO-2	U, An	C, P	L	
CO-3	Apply economic principles to evaluate real-world problems and to provide solutions.	PO-2 PSO-2	Ap, E	P, M	L	
CO-4	Interpret economic data and trends to assess economic performance	PO-3 PO-7 PO-8 PSO-3 PSO-6	Ap, E	P, M	L	

F-Factual, C- Conceptual, P-Procedural, M-Met cognitive

Mapping of COs with PSOs and POs:

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO-6	PO7	PO-8
CO1	3	-	-	-	-	-	3							
CO2	3	3	-	-	-	-		3						
CO3	-	2		-	-	-		2						
CO4	-	-	3		-	2			3				2	2
CO5	-		-	-	-	-								
CO6	-	-	-		-	-								

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics:

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4	✓	✓		✓

University of Kerala

Discipline	ECONOMICS
Course Code	UK1DSCECO101
Course Title	FUNDAMENTALS OF MICROECONOMICS
Type of Course	**DSC**
Semester	I
Academic Level	100 - 199

Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4

Pre-requisites	Basic Understanding of Economics
Course Summary	The course introduces the fundamental principles of microeconomics focusing on consumer behavior, production, costs, market structures, and welfare.

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Demand, Supply, and Equilibrium**	12
	1	Definition and Scope of Microeconomics	
	2	Determinants of individual demand and supply - Law of Demand and Law of Supply	
	3	Demand schedule and supply schedule - Demand curve and supply curve	
	4	Market and Individual demand and supply - Shifts in Demand and supply curves - Market equilibrium	

	5	Elasticity of Demand; Point and Arc Elasticity, Cross, Price and Income Elasticity of Demand - Elasticity of Supply - Consumer surplus	
II		**Consumer Behavior**	**15**
	5	Cardinal utility theory - Law of diminishing marginal utility - Derivation of demand curve - Ordinal utility theory: Indifference curves and their properties - Budget line - Consumer equilibrium - Income Consumption Curve - Price Consumption Curve - Demand elasticity and classification of commodities: Normal, inferior and Giffen goods - Income and substitution effect	
III		**Theory of Production and Costs**	**12**
	9	The concepts of TR, MR, AR - Production function - Law of variable proportions, Returns to scale - Isoquants and its properties - Iso-cost lines - MRTS - Equilibrium of the producer, Constrained output maximization and Constrained cost minimization - Expansion Path. Fixed and Variable cost - AC & MC - Economies and diseconomies of scale.	
IV		**Market Structures and Welfare Economics**	**12**
	18	Perfect Competition - features and assumptions - long run and short run equilibrium - Monopoly - short run and long run equilibrium - Monopoly power - Price discrimination - Social cost of monopoly. Oligopoly-features-Kinked Demand Curve- Welfare Economics-Criteria for Welfare-Pareto Criterion-Compensation Principle.	
V		**Application Sessions**	**9**
	23	Graphical Analysis- Demand and supply-equilibrium-shifts in demand and supply- solving simple numerical problems related to demand and supply-case studies to apply economic concepts and market structures to real-world situations.	

Reading List

Microeconomics Robert S. Pindyck, Daniel L. Rubinfield & P L Mehta

C. Snyder and W Nicholson(S-N): Fundamentals of Microeconomics, Cengage Learning .2 (India), 2010, Indian Edition

Gregory Mankiw. Principles of Economics (2019), Cengage.

Samuelson, Paul A and William D Nordhaus "Economics" (18th Edition), Mc Graw Hill.

Dominic Salvatore (2011), Microeconomic Theory, Ed. 4, Schaum's Outline Series, McGraw Hill, Inc., New Delhi

Web Resources

1. https://bit.ly/3vmzfdq

2. https://www.aeaweb.org/aej-micro/

3. https://microeconomicinsights.org/

4. https://journals.sagepub.com/home

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand basic concepts and principles of microeconomics.	R, U	PSO-1 PO-1
CO-2	Analyze and evaluate consumer theory, production, cost, market structures, and welfare economics.	An, E	PSO-3 PO-1
CO-3	Apply economic reasoning to evaluate real-world situations and policy issues.	Ap, E	PSO-3 PO-1
CO-4	Develop analytical and problem-solving skills through economic analysis.	An, E	PSO-1 PSO-3 PO-1 PO-2

R-Remember, U-Understand, Ap-Apply, An-Analyze, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understand basic concepts and principles of microeconomics.	PSO-1 PO-1	R, U	F, C		
CO-2	Analyse and evaluate	PSO-3	An, E	C, P		

	consumer theory, production, cost, market structures, and welfare economics.	PO-1			
CO-3	Apply economic reasoning to evaluate real-world situations and policy issues.	PSO-3 PO-1	Ap, E	P, M	
CO-4	Develop analytical and problem-solving skills through economic analysis.	PSO-1 PSO-3 PO-1 PO-2	An, E	P, M	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs:

	PSO 1	PSO 2	PSO 3	PSO4	PS O5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	-	-	-	-	-	3					
CO 2			3	-	-	-	3					
CO 3	-	-	3	-	-	-	3					

CO 4	3	-	3		-	-	3	3				
CO 5	-		-	-	-	-						
CO 6	-	-	-		-	-						

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics:

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4		✓		✓
CO 5		✓		✓
CO 6			✓	

University of Kerala

Discipline	ECONOMICS
Course Code	UK1DSCECO102
Course Title	HISTORY OF ECONOMIC THOUGHT
Type of Course	DSC
Semester	1
Academic Level	100 – 199

Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4hours	-		4

Pre-requisites	Basic understanding of the evolution of economic thought
Course Summary	The course aims to provide students with an overview of the evolution of economic thought and help them grasp the analytical foundations and ideologies put forth by influential economists throughout history. By studying the works of these thinkers, students can gain insights into the diverse perspectives that have shaped economic theory and policy.

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Introduction and Early Economic Thought**	**10**
	1	Why study the History of Economic Thought?	
	2	Economic Ideas of Aristotle, Plateau – Main Economic Ideas of Mercantilists and Physiocrats-(mention important economists of Mercantilism and Physiocracy and their major works. Need not go into the details)	
II		**Classical, Socialist, and Marxian School**	**15**
	1	Important contributions of Adam Smith – (division of labour, theory of value, concept of laissez-faire) David Ricardo – (theory of value,	
	2	David Ricardo – (theory of value stationary state)	
	3	J.B. Say – (law of market) Malthus – (population theory and theory of glut) J.S. Mill – (reciprocal demand). Basic tenets of	
		Basic tenets of Marxian Political Economy: stages of development – theory of surplus value, theory of capitalist crisis.	
III		**Marginalism and Neo-classical School**	**15**
	1	Difference between classical and neo-classical approach	

	2	Important ideas of Carl Menger, Leon Walras, Frederich List, Veblen, Wilfredo Pareto, A.C. Pigou, W.W. Rostow. Importance of Alfred Marshall in Neo-classical	
	3	Importance of Alfred Marshall in Neo-classical economics (avoid microeconomic theories).	
IV	**Keynes and post-Keynesians**		**15**
	1	Keynes as a critic of Classical Economics (introduce important books of Keynes). Keynesian concept of the Welfare State	
	2	Post-Keynesian developments – monetarism, rational expectation school, neoliberalism	
		Dependency school and neo- institutionalism (details are not expected).	
V	**Indian Economic Thought (Activities)**		**5**
	1	Discuss the economic ideas of Kautilya and Thiruvalluvar,	
	2	the Drain theory of Dadabhai Naoroji Trusteeship and other economic ideas of Gandhiji–Ambedkar.	
	3	Assignment on the contributions of important Indian economists like MG Ranade, DR Gadgil, CN Vakil, PR Brahmananda, KN Raj, PC Mahalanobis, VKRV Rao, Sukhamoy Chakraborthy, Amartya Sen	

References

1. Eric Roll (1956): History of Economic Thought, 3rd,Englewood Cliffs, N.J..PrenticeHall, Inc, 1956
2. Goddanti Omkarnath (2016) 'Indian Development Thinking' from Handbook of alternative theories of economic development Edited by Erik S. Reinert, Jayati Ghosh and Rainer Kattel
3. Dasgupta, Ajit K. (1993): A History of Indian Economic Thought, Routledge, London
4. Lokanathan V (2013): A History of Economic Thought, S Chand & Company Ltd,New Delhi

Additional Reading

1. Rangarajan, L.N. (2001): Kautilya – The Arthasastra, Penguin Books India Pvt.Limited, New Delhi
2. Singh, V.B. (1975): From Naoroji to Nehru – Six Essays in Indian Economic Thought, The Macmillan Company of India Limited, New Delhi.
3. Ajit K. Dasgupta, Gandhi's Economic Thought, Routledge, London. Year.
4. Blaug Mark, (1997) Economic Theory in Retrospect, 5th Edition, CambridgeUniversity Press, Cambridge, UK

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand various traditions and schools of economics, which influenced the shaping of the present world in its current state.	R, U	PSO-1, 3
CO-2	Examine the transition of economic history.	U, An	PSO- 1,3
CO-3	Analyse the ideologies of Indian economic thinkers	An, Ev	PSO- 1, 3

R-Remember, U-Understand, Ap-Apply, An-Analyze, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial:Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understand various traditions and schools of economics, which influenced the shaping of the present world in its current state.	PO- 1 PSO-1, 3	R, U	F, C	L	
CO-2	Examine the transition of economic history.	PO- 1, 3 PSO 1,3	U, An	P	L	
CO-3	Analyze the ideologies of Indian economic thinkers	PO- 1,3 PSO 1, 3	An, Ev	C, P	L	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO4	PS O5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	-	2	-	-	-	3					
CO 2	3		3	-	-	-	3		2			
CO 3	3	-	3	-	-	-	3		3			

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Correlation Levels:

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓	✓		✓

University of Kerala

Discipline	ECONOMICS				
Course Code	UK1DSCECO103				
Course Title	ISSUES IN INDIAN ECONOMY				
Type of Course	DSC				
Semester	I				
Academic Level	100-199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	An understanding of India's economic scenario.				
Course Summary	This course provides an in-depth understanding of the development process, issues, and challenges ahead of the Indian Economy.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Structural Issues in Indian Economy**	**10**
	1	Features of Indian economy – Demographic Features - Urbanization in India; Issues and Challenges	
	2	Informal Sector; Gig Economy, Drawbacks	
	3	Unemployment; Trends, Problems and Measures to Overcome	
	4	Status of India in HDI -Poverty and Inequality in India; Trends, Alleviation Programmes	
II		**Status of Indian Agriculture**	**10**
	5	Role of Agriculture in Indian Economy – Green Revolution	
	6	Growth Trends in Agriculture; Productivity -PDS	
	7	Hunger- Malnutrition and Food Security in India	
III		**Challenges in Industry and Service Sector in India**	**13**
	8	Role of Industry in Indian Economy – New Industrial Policy 1991	
	9	Performance of Public Sector Enterprises- Problems in MSMEs	
	10	Policy Initiatives; Make in India, Start-Up India, Atmanirbhar Bharat	
	11	Role of Service Sector in Employment, Sustainable Issues in Service-Led Growth	
	12	Banking Sector Reforms: Concerns and Challenges	

IV		**Public Policy and Foreign Trade**	**15**
	13	Stabilizing Inflation; The Role of Monetary Policy	
	14	Issues in Public Debt; Role of Fiscal Policy	
	15	Fiscal Federalism in India; Emerging Challenges	
	16	Bop Status in India – Direction and Magnitude of Foreign Trade	
V		**Understanding the Indian Economy: Case Studies**	**12**
	17	Identify the factors contributing to the recent growth of the Indian economy and prepare a report	
	18	Make a report on agricultural revolutions in India	
	19	Make an industrial visit and identify the inputs, outputs, and production techniques	
	20	Prepare an assignment on India's exports, and imports with leading trading partners	

Reading List

GHOSH, C., & GHOSH, A. (2016). INDIAN ECONOMY A MACRO-THEORETIC ANALYSIS. PHI Learning Pvt. Ltd..

GHOSH, S. (2022). Indian economy. PHI Learning Pvt. Ltd..

Goyal, A. (2014). Handbook of the Indian Economy in the 21st Century: Understanding the Inherent Dynamism. Oxford University Press.

Jose,T(2021), Indian Economy, Media Books.

Kapila, U. (Ed.). (2008). Indian Economy since independence. Academic Foundation

Kapila, U. (Ed.). (2022). Indian Economy since independence. Academic Foundation

Mishra, M. (2018). The Indian economy: a macroeconomic perspective.

Puri, V. K., & Misra, S. K. (2017). Indian economy.

Rangarajan Committee Report available at

http://planningcommission.nic.in/reports/genrep/pov rep0707.pdf

Tendulkar Committee Report available at

http://planningcommission.gov.in/eg poverty.htm

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the prime concerns of the economy	R, U	PSO-2, 4
CO-2	Examine the prospects and problems of the agricultural sector	R, E	PSO-2, 4
CO-3	Analyze the role and challenges of industrial and service sector	R,E	PSO-2, 4
CO-4	Evaluate the significance of public policy and trade	Ap, An	PSO-2, 4

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create
Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understand the prime concerns of the economy	PO-1,4 PSO-2,4	R, U	F	L	-
CO-2	Examine the prospects and problems of the agricultural sector	PO-1,2 PSO-2,4	R, E	F, M	L	-
CO-3	Analyze the role and challenges of the industrial and service sector	PO-1, PO-2, PSO-2,4	R, E	F, M	L	-
CO-4	Evaluate the significance of public policy and trade	PO-1, PO-2, PO-6, PSO-2,4	Ap, An	P, M	L	-

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PO 1	PO2	PO3	PO4	PO5	PO6	PO 7	PO 8
CO 1	-	3	-	2	-	-	3	-	-	3	-	-	-	-
CO 2	-	3	-	2	-	-	3	1	-	-	-	-	-	-
CO 3	-	3	-	2	-	-	3	2	-	-	-	-	-	-
CO 4	-	3	-	1	-	-	3	2	-	-	-	2		-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics:

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓	-	-	✓
CO 2	✓	✓	-	✓
CO 3	✓	✓	-	✓
CO 4	-	-	✓	✓

Discipline	ECONOMICS				
Course Code	UK1DSCECO104				
Course Title	REGIONAL ECONOMICS				
Type of Course	DSC				
Semester	I				
Academic Level	100-199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	Basic understanding of Economics				
Course Summary	The course offers a comprehensive examination of the economic dynamics shaping regional disparities and rural areas' development. Through a blend of theoretical frameworks and empirical analysis, students explore the factors influencing regional economic growth, such as natural resources, infrastructure, human capital, and institutional arrangements.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Fundamental concepts of Regional Economics and Rural Economics**	12
	1	Introduction to Regional Economics	
	2	Nature and scope of regional economics	
	3	Regional economics and regional science	
	4	Regional and Rural Economics	
	5	Concept and types of regions: Administrative, Planning, Agro-climatic, Economic and Functional regions	
	6	Introduction to Rural Economics: Nature and Scope of Rural Economics	
	7	Inter-disciplinary approach of Rural Economics: Components-Structure and Characteristics -Pre and Post-independence.	
II		**Nature of Rural Demography, occupation, Poverty and Unemployment**	16
	8	Population Size - Sex and Age Composition- Density of Population - Population Problems and Challenges	
	9	Family Welfare Measures in Rural India. - Occupational Distribution in Rural India	
	10	The Concept of Work Participation Rates	

	11	Rural Poverty-Meaning, Estimates, Causes and Consequences	
	12	Rural Unemployment - Meaning, Types, Magnitude of Rural Unemployment, - Causes and Consequences	
III		**Approaches to Rural Development**	**10**
	13	Gandhian Approach	
	14	Decentralized Planning Approach	
	15	Sectoral Approach	
	16	Rights Approach	
	17	National Programmes for Rural Development, Community Development Programmes, and Employment Guarantee Schemes	
IV		**Concept, definition, and measurement of regional economic growth in India**	**10**
	18	Administrative regions in India: State, District, Taluk and Village; Urban and Rural regions	
	19	Concept, definition, and measure of State Income (GSDP) – Rural and urban GDP	
	20	Differences in the estimation of national income (GDP) and State Income (GSDP)	
	21	Measurement of inter-regional economic growth at State level	
	22	Measurement of intra-state disparities in Kerala	
V		**FIELD SURVEY**	**12**
	23	To conduct a field survey Regional disparity in poverty and inequality at State level – Trends in poverty and inequality in Kerala	

Basic Readings

1. Katar Singh and Anil Shishodia. Rural Development –Principles, Policies and Management, Atlantic Publishers and Distributors
2. Maheswari S. (1985) Rural Development in India, - A Public Policy Approach, Sage Publication, New Delhi.
3. Mukundan,N.-Rural Development and Poverty eradication in India. New Century Publications
4. Satyasundaram (1997), Rural Development, Himalaya Publishing House, New Delhi.
5. V. M. Dandekar and N. Rath (2008). Poverty in India. Books for Change
6. Vasant Desai: Rural Development in India, Himalaya Publishing House, Mumbai, 2012.

Additional Readings

1. Bhattacharya and S. Sakthivel (2004): Regional Growth and Disparity in India: Comparison of Pre- and Post-Reform Decades, Economic and Political Weekly, 39(10), pp. 1071-1077.
2. Edgar M. Hoover and Frank Giarratani. (2016). An Introduction to Regional Economics. Web-book of Regional Science, Regional Research Institute, West Virginia University. Freely downloadable at: http://www.rri.wvu.edu/WebBook/Giarratani/contents.htm
3. Capello Roberta. (2016). Regional Economics. Routledge (New York).
4. Dutt and Sundaram- Indian Economy, S.Chand Publications, New Delhi, 2013-07-02.
5. Edgar M. Hoover and Frank Giarratani. (2016). An Introduction to Regional Economics. Web-book of Regional Science, Regional Research Institute, West Virginia University. Freely downloadable at: http://www.rri.wvu.edu/WebBook/Giarratani/contents.htm

6. Hudson, R. (2007): Regions and Regional Uneven Development Forever? Some reflective Comments upon Theory and Practice, Regional Studies, 41(9), pp. 1149-1160.
7. Keshab Das (2004): Uneven Development and Regionalism: A Critique of Received Theories, Economic and Political Weekly, 39(45), pp. 4917-4925.
8. Lekhi R.K. (2005) The economics of Development and Planning.
9. MacKay, R. (2003): Twenty-Five Years of Regional Development, Regional Studies, 37(3), pp. 303-17.
10. Rahul Mudgal (1996) Economic Dimensions of Rural Development, Sarup& Sons, New Delhi.

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the basic concepts of Regional Economics and Rural Economics	R, U	PSO-1
CO-2	Examine the Nature of Rural Demography, occupation, Poverty, and Unemployment	R, U	PSO-2 PSO-3
CO-3	Analyze the impacts of Approaches to Rural Development	An	PSO-2
CO-4	Evaluate and Understand the Concepts, definitions and measurements of regional economic growth in India	E	PSO-1,2
CO-5	Evaluate and create a report about the Regional disparities in poverty and inequality at the State level – Trends in poverty and inequality in Kerala	C,Ap	PSO-3,6

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create
Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understand the basic concepts of Regional Economics and Rural Economics	PO-1, PSO-1	R, U	C,F	L	-

CO-2	Examine the Nature of Rural Demography, occupation, Poverty and Unemployment	PO-2, PSO-2 PSO-3	R, U	P, M	L	-
CO-3	Analyze the impacts of Approaches to Rural Development	PO-7, PSO-2	An	P	L	-
CO-4	Evaluate, Understand Concept, definition and measurement of regional economic growth in India	PO-1, PO-2, PO-7, PSO-1 PSO-2	E	P, M	L	-
CO-5	Evaluate and create a report about the Regional disparities in poverty and inequality at State level – Trends in poverty and inequality in Kerala	PO-3 PO-8 PSO-3	C, Ap	P, M	L	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PO 1	PO2	PO3	PO4	PO5	PO6	PO 7	PO 8
CO 1	3	-	-	-	-	-	3	-	-	-	-	-	-	-
CO 2	-	2	3	-	-	-	-	3	-	-	-	-	-	-
CO 3	-	3	-	-	-	-	-	-	3	-	-	-	3	-
CO 4	2	-	-	3	-	-	1	2	-	-	-	-	-	-
CO 5	-	-	-	-	-	3		-	3	-	-	-	-	2

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓	-	-	✓
CO 2	✓	✓	-	✓
CO 3	✓	✓	-	✓
CO 4	-	-	-	✓
CO5	-	✓	✓	-

University of Kerala

Discipline	ECONOMICS				
Course Code	UK1DSCECO105				
Course Title	AGRICULTURAL ECONOMICS				
Type of Course	DSC				
Semester	1				
Academic Level	100 – 199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	Basic understanding of Economics				
Course Summary	The course covers the foundational principles, theories, and practices focusing on the linkages between agriculture and economy, production management, and agriculture marketing.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Introduction**	10
	1	Definition and scope of Agricultural Economics.	
	2	Role of agriculture in economic development; interdependence between agriculture and industry, poverty and environment.	
	3	Modernization in agriculture, organic farming,smart agriculture	
	4	Agricultural development, poverty, and environment.	
II		**Economics of Agricultural Production Farm Management**	15
	5	Agricultural production-Production Function analysis- types of costs and their interrelationship.	
	6	Economics of Farm Management, Principles of Farm Management, Budgeting.	
	7	Farm size and productivity relation.	
III		**Land Systems and Agricultural Finance**	15
	8	Principles of land utilization – land distribution – structure and trends.	
	9	Land tenures and farming systems – peasant, capitalist, collective, and state farming. Tenancy and crop sharing	
	10	Issues of marginal and small farmers, rural unemployment, Agricultural wages	
	11	Sources of rural credit, Agricultural credit challenges, opportunities, and strategies.	
IV		**Agricultural Prices, Marketing, and Trade**	10

	12	Agricultural prices and policy- Meaning and functions of price-administered prices.MSP, need for agricultural price policy. Food security, Public Distribution system.	
	13	Market Structure, marketing mix, and market segmentation Classification and characteristics of agricultural markets. Role of IT –Market research – Market information service – electronic auctions (e-bay), e-Chaupals, Ag market and Domestic and Export Market Intelligence Cell (DEMIC) – Market extension.	
	14	Risk in marketing, Types of risk in marketing, speculation & hedging, futures trading.	
	15	International trade in Agri commodities: GATT, WTO, and Agreement on Agriculture (AoA).	
V		**Analysis and Application**	**10**
	16	Analysis of Indian agriculture-land reforms-green revolution-agricultural prices, international trade and its implications-trends in agricultural production.	

Reading List

1. Schultz, Theodore.W,(1964), Transforming traditional agriculture, Yale City Press, New Haven.

2. Das Gupta, (1977): The New Agrarian Technology and India, Macmillan, New Delhi.

3. Subrata Ghatak and Ingersent,Ken, (1984): Agriculture and Economic Development; Harvester Press, Sussex.

4. Uma Kapila,(2023): Indian Economy Since Independence, 34th edn, Academic Foundation, Delhi.

5. Earl.O.Heady, (1952): Economics of Agricultural Production and Resource use; Prentice Hall, New York.

6. C.H. Hanumantha Rao, (1994): Agricultural Growth, Rural Poverty and Environmental Degradation, Oxford University Press, New Delhi.

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Develop a fundamental understanding of the economic principles of the agricultural sector	R, U	PSO-1
CO-2	Apply economic analysis techniques to farm management decisions.	Ap, An	PSO-2 PSO-3
CO—3	Gain insight into agricultural markets and marketing	Ap,An	PSO-2,3
CO-4	Develop critical thinking skills to analyze and evaluate agricultural economic issues.	An, E	PSO-3,4

R-Remember, U-Understand, Ap-Apply, An-Analyze, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial:Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Develop a fundamental understanding of the economic principles of the agricultural sector	PO-1,2 PSO-1	R, U	F, C		
CO-2	Apply economic analysis techniques to farm management	PO-1,2 PSO-1,2	Ap, An	P, M		

	decisions				
CO-3	Gain insight into agricultural markets and marketing	PO-1, 2 PSO-1,2	Ap, An	P, M	
CO-4	Develop critical thinking skills to analyze and evaluate agricultural economic issues.	PO-1,2,3 PSO-1 PSO-2	An, E	P, M	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs:

	PSO 1	PSO 2	PSO 3	PSO4	PS O5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	-	-	-	-	-	3	3				
CO 2	3	3	-	-	-	-	3	3				
CO 3	3	3		-	-	-	3	3				
CO 4	2	2			-	-	2	2	2			

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low

2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics:

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4	✓	✓		✓

Multi-disciplinary Course (MDC)

University of Kerala

Discipline	ECONOMICS				
Course Code	UK1MDCECO100				
Course Title	ECONOMICS FOR EVERYONE				
Type of Course	MDC				
Semester	I				
Academic Level	100-199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	3	3 hours	-	-	3
Pre- requisites	A keen interest in knowing about the basic concepts relating to Economics				
Course Summary	This course aims to equip students to understand current economic issues and illustrate how economic concepts can be applied to analyze real-life situations.				

Detailed Syllabus:

Module	Unit	Introduction to Economics	Hrs
	1	Subject matter of Economics-Need & Scope of Studying Economics-Branches of Economics	
	2	Fundamental Economic Activities: Production, Consumption, and Trade - Agents in an Economy; Producer, Consumer, Government- Factors of Production.	10
	3	Basic Problems of an Economy	
	4	Role of government in an economy- Role of Markets	
II		**Macroeconomic Concepts, Issues and Policies**	12
	5	National Income: GDP, GNP, NNP, NDP, and GVA; at current price and constant price, Green Accounting	
	6	Inflation; Types, Causes, and Effects- Deflation-Stagflation.	
	7	Inflation Indices; WPI and CPI	
	8	Counter policy Measures: Fiscal and Monetary Policy -Monetary Policy Rates in India	
	9	Business Cycles- Meaning and Phases.	
III		**Socio-Economic Issues in India**	10
	10	Poverty –poverty line; Types, Measures and Programs; Estimation in India.	

	11	Inequality – features; various indices		
	12	Employment and Unemployment; trends, types, measures and programs-Educated Unemployment		
IV		**Banking and Capital Market**		**8**
	13	History of Banking in India- RBI and Instruments of Credit Control-NABARD		
	14	E- E-Banking- Digital Currency.		
	15	Capital Market- Components; Instruments; and Trading		
	16	Stock Exchanges – Meaning and functions – BSE and NSE;		
	17	SEBI- Functions		
V		**Activity**		**5**
	18	Prepare a report on the basic issues faced by the Indian Economy		
	19	Evaluate the major Poverty Alleviation Programmes in India		
	20	Prepare an assignment on RBI's Inflation Targeting Policy in India		

Reading List

- Stephen Dobson and Susan Palfreman (1999): "Introduction to Economics", Oxford University Press.

- Nilanjan Banik, "The Indian Economy: A Macroeconomic Perspective", Sage Publications

- New monetary Aggregates: RBI

  https://www.rbi.org.in/scripts/publicationReportDetails.aspx?ID

- Chetan Ghate, The Oxford Handbook of Indian Economy", Oxford University Press

- Mihir Rakshit (2011): Inflation and Relative Prices in India 2006-10: Some Analytical and Policy Issues, Economic & Political Weekly EPW ,April 16, 2011, vol xlvi no 16

- Faboozi, J Frank, Modigliani Franco (2008): Capital Markets-Institution and Instruments. 4th ed, Pearson Education, New Delhi

- F.S Mishkin and S.G. Eakins (2011): Financial Markets and Institutions, Pearson Education,3rd Ed

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the workings of a modern market economy	R, U	PSO-1
CO-2	Examine the macroeconomic policies and their implications.	E, U	PSO-2,4
CO-3	Analyze the socio-economic issues in the Indian Economy	An	PSO- 3,4
CO-4	Apply essential financial skills in real-life investment decisions.	Ap	PSO-4

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create
Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understanding the basic economic concepts	PO-, 1 PSO-2,4	R,U	C,F	L	-
CO-2	Examine various issues and policy initiatives relating to socioeconomic development	PO-,1,2 PSO-3,4	EU	C, F	L	-
CO-3	Analyze the situations of Macro Economic Instabilities	PO-1,2 PSO-4,	An,	F,M	L	-
CO-4	Analyze the role of banks in the Indian Financial system	PO- 1,6 PSO-4	Ap	F, M	L	-

FYUGP-ECONOMICS

CO-5	Evaluation and report writing	PO-3 PSO-3,6	E,C	M	L	-

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs: Correlation Levels:

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PO 1	PO2	PO3	PO4	PO5	PO6	PO 7	PO 8
CO 1	3	-	-	2	-	-	3	-	-	-	-	-	-	-
CO 2	-	-	3	2	-	-	2	3	-	-	-	-	-	-
CO 3	-	-	-	3	-	-	1	2	-	-	-	-	-	-
CO 4	-	-	-	3	-	-	1	-	-	-	-	3	-	-
CO-5	-	-	2	-	-	3	-	-	3	-	-	-	-	-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓	-	-	✓
CO 2	✓	-	-	✓
CO 3	✓	-	-	✓
CO 4	-	✓	-	✓
CO-5	-	✓	✓	✓

University of Kerala

Discipline	ECONOMICS				
Course Code	UK1MDCECO101				
Course Title	SUSTAINABLE DEVELOPMENT				
Type of Course	MDC				
Semester	I				
Academic Level	100-199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	3	3 hours	-	-	3
Pre-requisites	Understanding of basic principles of Economics				
Course Summary	Typically covers a broad range of topics aimed at understanding the interplay between environmental, social, and economic factors to promote long-term well-being and prosperity for current and future generations.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Sustainable Development- An Overview**	**12**
	1	Sustainable Development; History and emergence of the concept of Sustainable Development, Definitions, Objectives and Principles	
	2	Indicators of sustainable development	
	3	Approaches and Strategies for Sustainable Development; MDG to SDGs – criticism; Degrowth, slowing, overheating - Mickey mouse economics to Doughnut economics	
	4	Hicksian Sustainability and Hartwick Solow Sustainability principles, Kuznet's curve	
II		**Sustainable Development Goals**	**10**
	5	Sustainable Development Policies and Programmes: The proposal for SDGs at Rio+20; Illustrative SDGs; Goals, Targets and Indicators	
	6	Government and the SDGs: Planning, localizing the SDGs, policy instruments	

	7	Industrial policies and the SDGs-Financing the SDGs; Types of financing, new financing mechanism, and global funds, Goal-based Development, Principles of Good Governance	
III		**SDG-Issues and challenges**	**8**
	8	Issues and threats in the attainment of SDGs; Climate Change and sustainability, demographic imbalances, income inequality, jobless growth, loss of biodiversity-	
	9	Global and National Level Initiatives for Sustainable Development	
	10	Measurement of Sustainable Development – National Income Accounting and Green GDP	
IV		**SDG for the future**	**6**
	11	Agenda for Future Global Sustainable Development: Role of developed countries in the sustainable development of developing countries, Demographic dynamics, and sustainability, Integrated approach for resource protection and management	
V		**Outreach activities designed by the Tutor**	**9**
	12	Guideline for visit and reporting (i) visit to a local recycling center, or (ii) assess the wisdom of the local community through group visits	

Reading list

1. Peter P. Rogers and Malin Falkenmark (2007), The Sustainable Development Goals: A Blueprint for Sustainability in the 21st Century, earthscan from Routledge.
2. Editors Okechukwu Ukaga, Chris Maser et al, (2019), Sustainable Development: Principles, Frameworks, and Case Studies (Social-Environmental Sustainability), CRC Press.
3. Transforming our World: The 2030 Agenda for Sustainable Development available at https://sustainabledevelopment.un.org/post2015/transformingourworld/publication
4. "The Future We Want: Radical Ideas for the New Century" edited by Sarah Leonard and Bhaskar Sunkara:
5. "The Sustainable Development Goals: An Interdisciplinary Perspective" edited by William M. Lafferty and James Meadowcroft:
6. "Localizing the Sustainable Development Goals: From Agenda 2030 to Urban Action" edited by David Simon and Michele Acuto.
7. Joseph Stiglitz, Amartya Sen, & Jean Paul Fitoussi(2009), The Measurement of Economic Performance and social progress revisited: Reflections and Overview, https://www.ofce.sciences-po.fr/pdf/dtravail/WP2009-33.pdf
8. Jonathan M. Harris and Brian Roach (2017): Environmental and Natural resource Economics: A Contemporary Approach, 4th Edition, Routledge.
9. Development, Poverty, and the Environment (T), Chapter 20 & FAO's,Global Information & Early Warning System at http://www.fao.org/giews/english/index.

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand Sustainable Development Goals and related concepts	U	PSO-1
CO-2	Examine the ethical dilemmas, cultural differences, and global perspectives	E, R	PSO-6,3
CO-3	Develop critical thinking essential for addressing sustainability challenges	Ap, E	PSO-1,4
CO-4	Acquire the practical skills in implementing sustainable practices	Ap, An	PSO-6,5
CO-5	Assess the wisdom of the local community through group visits	E, C	PSO-6

R-Remember, U-Understand, Ap-Apply, An-Analyze, E-Evaluate, C-Create

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/ PSO	Cognitive Level	Knowledge Category	Lecture (L)/ Tutorial (T)	Practical (P)
CO-1	Understand Sustainable Development Goals and related concepts	PO-1, PSO-1	U	C	L	-
CO-2	Examine the ethical dilemmas, cultural differences, and global perspectives	PO-2,3 PSO-3,6,	E, R	F, C	L	-
CO-3	Develop critical thinking essential for addressing sustainability challenges	PO-1,5 PSO-1,4	Ap, E	F, C	L	-
CO-4	Acquire the practical skills in implementing sustainable practices	PO-3 PSO-6,5	Ap, An	P, M	L	-

| CO-5 | Assess the wisdom of the local community through group visits | PO-2 PSO-6 | E, C | C, P | L/T | - |

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs:

	PSO 1	PSO 2	PSO 3	PSO4	PSO5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO 6	PO 7	PO 8
CO 1	2	-	-	-	-	-	2	-	-	-	-	-		
CO 2	-	-	2	-	-	1	-	1	2	-	-	-	-	-
CO 3	2	-	-	2	-	-	1	-	-	-	1	-	-	-
CO 4	-	-	-	-	3	1	-	-	2	-	-	-	-	-
CO 5	-	-	-	-	-	2	-	1	-	-	-	-	-	-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓	✓	-	✓
CO 2	✓	-	-	✓
CO 3	✓	-	-	✓
CO 4	✓	✓	-	✓
CO 5	-	✓	✓	-

SEMESTER II

		Discipline Specific Core		
2	UK2DSCECO100	Tools for Economic Analysis	DSC	100-199
	UK2DSCECO101	Fundamentals of Macroeconomics	DSC	100-199
	UK2DSCECO102	International Political Economy	DSC	100-199
	UK2DSCECO103	Managerial Economics	DSC	100-199
	UK2DSCECO104	Industrial Economics	DSC	100-199
	UK2DSCECO105	Economic History of India	DSC	100-199
		Multi-Disciplinary Course (can select one)		
2	UK2MDCECO100	Global Economic Issues	MDC	100-199
	UK2MDCECO101	Survey Techniques in Social Sciences	MDC	100-199

Discipline Specific Core

University of Kerala

Discipline	ECONOMICS				
Course Code	UK2DSCECO100				
Course Title	Tools for Economic Analysis				
Type of Course	DSC				
Semester	II				
Academic Level	100 - 199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	1. Proficiency in basic mathematics, including arithmetic, algebra, and geometry, is essential. 2. Strong logical reasoning skills and an interest in economics are advantageous for effective learning and application of the course content.				

Course Summary	Upon completing the "Tools for Economic Analysis" course, students will demonstrate proficiency in fundamental mathematical and statistical concepts essential for economic analysis. They will apply these techniques to analyse economic data, solve equations, and interpret measures of central tendency and dispersion. Moreover, students will grasp the intricacies of the real number system and its relevance in economic contexts. Through graphical representations, they will analyze economic functions and acquire skills in data presentation.

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Mathematics Fundamentals for Economics**	10
	1	Constants – Variables: Dependent, Independent, Discrete and Continuous - Parameters- Exponents- Polynomials	2
	2	Equations- Degree of Equations: Linear, Quadratic and Cubic – Simultaneous Equations- Solution of Simultaneous Equations: Simple Simultaneous Equations, Quadratic equations.	4
	3	The Real Number System: Natural Numbers, Integers, Rational and Irrational Numbers, Real Numbers, Complex Numbers and Prime Numbers – Axioms of Real Numbers.	4
II		**Sets, Relations, and Economic Functions**	12
	4	Sets – Definition and Notation- Forms of Sets – Venn Diagrams- Set Operations	4
	5	Ordered Pairs - Cartesian Product Relations - Domain and Range - One-to-one relation, Many-to-one relation, One-to-many relation	2
	6	Functions – Types of functions: Identity function, Constant Function, Linear Function, Quadratic Function, Polynomial Function, Exponential Function, Logarithmic Function, Explicit and Implicit Functions, Inverse Function, Monotone Function, Functions of two or more variables.	2
	7	Illustrations of Economic Functions Demand Function, Supply function, Savings function, Production Function, Cost function Revenue function, Utility function, and Profit Function	4
III		**Visual Techniques in Economic Graphs and Functions**	13
	8	Graphs – Coordinate System- Graphs of Equations in Two Variables	2
	9	Graphs of Functions: First-Degree, Second Degree and Third-Degree Function	2
	10	Formula for Distance between two points- Slope of a Straight line – Intercepts	3
	11	Functions and Diagrams in Economics: Demand function and curves, Supply function and curves, Cost functions and Cost curves, Total revenue functions and curves, the Production function, the Consumption function, and the Indifference curve.	6

			13
IV		**Foundations of Data Analysis: Understanding and Applying Statistical Measures**	
	12	Meaning of Data- Classification of Data: Primary and Secondary – Census Method and Sample Method – Classification of Data	2
	13	Frequency Tables: Discrete and Continuous, Exclusive and Inclusive – Cumulative Frequency Tables- Tabulation	5
	14	Presentation of Data: Diagrams and Graphs; Types of Diagrams; Types of Graphs:	6
	15	Various Central Tendency Measures. Arithmetic Mean- Properties-Merits and demerits- Different Methods of Calculation. Median- Properties- Merits and demerits- Different Methods of Calculation. Mode- Properties- Merits and demerits- Different Methods of Calculation. Harmonic Mean, Geometric Mean.	
	16	Dispersion- Absolute and Relative Measures- Range, Quartile Deviation, Mean Deviation, Standard Deviation.	
V		**Activity: Data Presentation Workshop**	**12**
		To familiarise students with different types of diagrams and graphs for presenting data effectively., design a simple activity focusing on data presentation using diagrams and graphs.	

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand how to identify and solve diverse equations in economic analysis efficiently.	U, Ap, An	PSO- 3
CO-2	Analyze Economic Functions and their Graphical Representations	U, Ap, An.	PSO- 1,3
CO -3	Analyze Frequency Tables and Graphical Representations of Economic Data	U, An	PSO- 3
CO - 4	Evaluate Measures of Central Tendency and Dispersion for Economic Data.	U, Ap, An,E	PSO- 1,3

CO-5	Evaluate the Significance of Statistical Measures in Economic Analysis	E	PSO- 3

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture:Tutorial:Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
1	Understand how to identify and solve diverse equations in economic analysis efficiently.	3	U,Ap, An	P	L	
2	Analyze Economic Functions and their Graphical Representations	1,3	U, Ap, An.	C	L	
3	Analyse Frequency Tables and Graphical Representations of Economic Data	3	U, An	F, C.	L	
4	Evaluate Measures of Central Tendency and Dispersion for Economic Data	1,3.	U, Ap, An, E.	P	L	
5	Evaluate the Significance of Statistical Measures in Economic Analysis	5	An	C		

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	-	-	-	-	-	-	2	2	-	-	-	-
CO 2	-	-	-	-	-	-	3	3	-	-	-	2
CO 3	1	1	3	3	3	1	2	2	-	2	-	3
CO 4	1	1	3	-	3	1	3	3	2	-	2	1
CO 5	1	2	3	3	3	1	3	3	3	2	2	2

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓

CO 2	✓			✓
CO 3	✓			✓
CO 4	✓			✓
CO 5		✓		

Reference

- Chiang, A.C. & Wainwright, K. (2013). Fundamental Methods of Mathematical Economics. (4th ed.). McGraw Hill Education (India) Private Limited.
- Sydsaeter, K. & Hammond, P. (2016). Mathematics for Economic Analysis. New Delhi: Pearson Education Inc
- Dowling, E. T. (2012). Schaum's Outlines-Introduction to Mathematical Economics. (3rd ed.)
- Goon, A.M., Gupta M.K. and Dasgupta, B. (2002). Fundamentals of Statistics, Vol. I, 8th Ed. The World Press, Kolkata.
- Mood, A.M., Graybill, F.A. and Boes, D.C. (2007). Introduction to the Theory of Statistics, 3rd Ed., (Reprint), Tata McGraw-Hill Pub. Co. Ltd

Recommended Readings

- Bradley, T. (2013). Essential Mathematics for Economics and Business. London: John Wiley & Sons.
- Renshaw, G. (2011). Maths for Economics. (4th ed.). Oxford: Oxford University Press.
- Roser, M. (2003). Basic Mathematics for Economists. (2nd ed.). New York: Routledge.
- Ross, S. M. (2010). Introductory statistics, 3rd Ed., Academic Press
- S P Gupta, Statistical Methods, Sultan Chand and Sons.

University of Kerala

Discipline	ECONOMICS				
Course Code	UK2DSCECO101				
Course Title	Fundamentals of Macroeconomics				
Type of Course	DSC				
Semester	II				
Academic Level	100 - 199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	Basic understanding of Economics				
Course Summary	The course introduces macroeconomic principles, focusing on the functioning and behavior of the economy as a whole. Topics include national income accounting, aggregate demand and supply, fiscal policy, monetary policy, inflation, unemployment, and economic growth.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Introduction to Macroeconomics and National Income Accounting**	**10**
	1	Definition and scope of macroeconomics. Basic issues in macroeconomics.	
	2	National Income Accounting-Measurement of gross domestic product- income, expenditure, and the circular flow- real versus nominal GDP .	
II		**Classical and Keynesian Systems.**	**15**
	3	The classical system- Says Theory of determination of income and employment- - The Keynesian system-Multiplier-Accelerator-	
	4	The simple Keynesian model of Income and Employment.	
	5	Aggregate Demand- Aggregate Supply -Equilibrium Aggregate output. Fiscal and Monetary policy.	
III		**Inflation and unemployment**	**12**
	6	Inflation – meaning, types, causes, and effects- demand-pull and cost-push inflation	
	7	Inflationary gap-Deflation – meaning, effects- Inflation Vs. deflation.	
	8	Types of Unemployment	
IV		**Economic growth, Trade, and business cycles**	**15**
	9	Meaning of Development – Development and Growth- Measuring Development-	
	10	- Problems of Growth- Developing Countries and Developed Countries-differences- International Trade-Absolute Advantage-Comparative Advantage.	

	11	Gains from Trade- Business Cycle.	
V		**Macro-economic data**	**8**
	12	Overview of commonly used macro-economic data-interpretation of data trends and its implications to the economy.	

Reading List

1. The Economy: Economics for A Changing World. OUP www.core-econ.org
2. Rudiger Dornbusch, Stanley Fischer & Richard Startz-Macro Economics-tenth edition
3. Diulio, Eugene (2004) Schaum's Outlines on Macroeconomics. McGraw-Hill
4. Robert E. Hall and David H. Papell. Macroeconomics - Economic Growth, Fluctuations and 3. Policy, Viva-Norton Student Edition. New Delhi, Chennai.
5. Robert J Gordon. Macroeconomics, 12 th Edition, Pearson Indian Education Services PVT. LTD.

Web Resources

1. https://www.freakonomics.com/
2. https://www.cbsnews.com/moneywatch/
3. https://hbswk.hbs.edu/
4. https://economics.mit.edu/
5. https://www.economy.com/dismal

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the fundamental principles and theories of macroeconomics.	R, U	PSO-1
CO-2	Apply macroeconomic concepts to analyze real-world economic issues.	Ap, An	PSO-2.3
CO-3	Evaluate the effectiveness of fiscal and monetary policies.	An, E	PSO-3,4
CO-4	Analyze and interpret macroeconomic data.	E, C	PSO-2,3

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

*Note: 1 or 2 COs/module***Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)**

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understand the fundamental principles and theories of macroeconomics.	PO-1 PSO-1	R, U	F, C	L	
CO-2	Apply macroeconomic concepts to analyze real-world economic issues.	PO-1,2 PSO-2 PSO-3	Ap, An	P	L	
CO-3	Evaluate the effectiveness of fiscal and monetary policies.	PO-2,3 PSO-3,4	An, E	P, M	L	
CO-4	Analyze and interpret macroeconomic data.	PO-2,3 PSO-2,3	E, C	P, M	L	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs:

	PSO 1	PSO 2	PSO 3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO-7	PO-8
CO 1	3	-	-	-	-	-	3							
CO 2		3	3	-	-	-	3	3						
CO 3	-	-	3	3	-	-		3						3

CO 4	-	3	3		-	-		3	3					
CO 5	-		-	-	-	-								
CO 6	-	-	-		-	-								

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4	✓	✓		✓
CO 5				
CO 6				

University of Kerala

Discipline	ECONOMICS				
Course Code	UK2DSCECO102				
Course Title	INTERNATIONAL POLITICAL ECONOMY				
Type of Course	DSC				
Semester	II				
Academic Level	100 – 199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	--	4
Pre-requisites	Basic understanding of Economics.				
Course Summary	The course introduces the fundamental theoretical perspectives of international Political Economy. It also analyses the transformation of the global economy especially after the second world war.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Introduction**	**10**
	1	Features of global economy Post -World War 11-Reconstruction and recovery- Decolonization- Expansion of trade and capital flows	
	2	Emergence of international institutions-Multinational corporations-Economic Blocks-New regionalism.	
II		**Theoretical Perspectives of International Political Economy**	**15**
	3	Economic Liberalism-Embedded Liberalism-Hegemonic Stability. Mercantilism- Neo-Mercantilism-. Structuralism- dependency theory	
	4	Modern world system-Neo-imperialism. Constructivism and feminist theory.	
III		**The New Economic Theories**	**10**
	5	The limitations of Neo-classical theories in analyzing the global political economy.	
	6	The New Economic Theories and their features-Institutions Scale Economies, Imperfect Competition, Technological Innovation,	
	7	History, and Geography. The new growth theory- the new economic geography- the new strategic theory - - the political significance of the new economic theories.	
IV		**The Structures of International Political Economy.**	**13**
	8	The Global Production Structure- the Global Trade Structure- The International Finance and Monetary Structure- The Global Security Structure – The Knowledge	
	9	and Technology Structure. The political economy of globalization- uneven development- inequality- gender issues, environment and sustainable development.	

V		Case studies	12
	10	The political economy of the Great Depression (1929-33), the transformation of East European Countries post1991, the Asian Financial Crisis (1997-98), and the Global Financial Crisis (2007-08).	

Reading list

1. David N Balaam and Bradford Dillman, Introduction to International Political Economy 7th Edition, Routledge,2019
2. Robert Gilpin, Global Political Economy-Understanding the International Economic Order, Princeton University Press,2001.
3. Benjamin J Cohen, international Political Economy-An Intellectual History, Princeton University Press.
4. Robert E Goodin (Ed), The Oxford Handbook of Political Science.
5. Beaud, Michel (2001). A History of Capitalism, 1500-2000,
6. Dumenil, G and D Levy (2011). The Crisis of Neoliberalism, Harvard University Press.
7. Hymer, Stephen (1975). "The Multinational Corporation and the Law of Uneven Development", in H. Radice (ed.) International Firms and Modern Imperialism, Penguin Books.
8. Dore, Ronald (2008). "Financialization of the Global Economy", Industrial and Corporate Change, Volume 17, Number 6, pp. 1097–1112.

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Develop an understanding of the global economy after the Second World War.	U	PSO-1
CO-2	Analyze and evaluate interactions between politics and economics at the international level.	U, An	PSO-2
C0-3	Analyse and Evaluate different theories and perspectives in international Political Economy.	An, E	PSO-3,4
C0-4	Analyse evaluate the role of the state in the globalized context	An, E	PSO-1,3
CO-5	Critically evaluate and draw conclusions about major political-economic events.	E, C	PSO-2,3

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tuto rial (T)	Practical (P)
CO-1	Develop an understanding of the global economy after the Second World War.	PO-1 PSO-1	U	F, C	L	-
CO-2	Analyze and evaluate interactions between politics and economics at the international level.	PO-1 PSO-1	U, An	F, C	L	-
CO-3	Analyse and Evaluate different theories and perspectives in International Political Economy.	PSO-3,4 PO-2	An, E	F, P	L	--
CO-4	Analyse evaluate the role of the state in the globalized context	PSO-1,3 PO-3	U, E	P, M	L	-
CO-5	Critically evaluate and draw conclusions about major political-economic events	PSO-1,2 PO-1,3	E, C	P, M		

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO4	PS O5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	-	-	-	-	-	3					

CO 2	3	3	-	-	-	-	3					
CO 3	-	-	3	3	-	-		3				
CO 4	2	-	2	-	-	-			2			
CO 5	2	2	-	-	-	-	2		2			

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4		✓		✓
CO 5		✓		✓

University of Kerala

Discipline	ECONOMICS				
Course Code	UK2DSCECO103				
Course Title	MANAGERIAL ECONOMICS				
Type of Course	DSC				
Semester	II				
Academic Level	100-199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	Understanding of basic Economics.				
Course Summary	This course intends to cover the basic concepts of demand analysis, estimation, production, cost analysis, and a firm's decision-making strategies which are relevant in decision-making and management.				

Detailed Syllabus:

Module	Unit	Content	Hrs.
I		**Principles of Managerial Economics**	**15**
	1	Meaning & Scope of Managerial Economics-Role of Managerial Economics in Problem Solving	
	2	Demand Analysis; Demand Curve, Determinants of Demand-Market Demand-Elasticity of Demand; Price, Income and Cross Elasticity of Demand	
	3	Demand Forecasting; Types, Forecasting Methods; Trend Analysis, ARIMA Model (Concept only), Biometric Forecasting, Surveys, Econometric Models	
II		**Production Analysis and Cost of Production**	**12**
	4	Production Function-Cobb-Douglas Production Function-Law of Variable Proportions-Law of Returns to Scale-Economies and Diseconomies of Scale	
	5	Nature of Cost Curves-Traditional Theory of Cost-Relevance of Cost Functions	
III		**Market Structure and Theory of the Firm**	**12**

	6	Perfect Competition- Monopoly-Monopolistic Competition (Concepts and features only), Oligopoly; Kinked Demand Curve Model -Profit-Maximization versus Break Even Analysis	
	7	Managerial Theory of the Firm; Baumol, Marris - Behavioral Theory of Firm; Cyert and March	
	8	Organization of the firm; Methods of Procuring Inputs, Transaction Cost	
IV		**Pricing Theory**	**15**
	9	Pricing Objectives-Price Discrimination-Crucial Factors in Formulating a Pricing Policy	
	10	Markup Pricing -Transfer Pricing-Peak load Pricing - Cost plus Pricing - Marginal Cost Pricing - Going Rate Pricing - Product Line Pricing - Breakeven Point Pricing - Pricing of a New Product-Pricing Over the Life Cycle of a Product	
V	**Managerial Economics in Practice** (This Module includes a set of case studies any of which each student is required to do)		**6**
	11	Select a few products, identify the characteristics and its market structure.	
	12	Identify a firm and examine the promotional measures carried out by it.	
	13	Prepare a report about a firm of your choice and examine its pricing strategies.	

Readings

1. D N Pandey (2004), 'Managerial Economics', Pearson Education
2. Dominick Salvatore (2014), 'Managerial Economics in a Global Economy', Oxford University Press
3. Dr. Ashok Purohit (2022), 'Managerial Economics', Pratham Publications
4. H Craig Peterson, W Cris Lewis (1999), 'Managerial Economics', Pearson Education
5. Luke M Froeb, Brian T McCann, Mikhael Shor, Michael R Ward (2014), 'Managerial Economics- A Problem Solving Approach', South Western Cengage Learning
6. Maria Moschandreas (2000), 'Business Economics', 2nd Edition, Business Press Thomson Learning
7. Michael R Baye, Jefrey T Prince (2022), 'Managerial Economics and Business Strategy', Mc Graw Hill LLC
8. Lila J Truett, Dale B Truett (2006), 'Managerial Economics-Analyses, Problems, Cases,' 8th Edition, Wiley Student Edition.

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the fundamentals of Managerial Economics	U, R	PSO-1, 5
CO-2	Examine the production and cost process of the firm	U, An, E	PSO-1,5
CO-3	Evaluate the notion of market and its different forms	U, An, E	PSO-1,3,5
CO-4	Examine the pricing strategies of firms with market power	E, An, E, C	PSO-1,3,5,6
CO-5	Apply the theories and principles of Managerial Economics in daily life.	Ap, C	PSO-3,5,6

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understand the fundamentals of Managerial Economics	PO-1 PSO- 1,5	U, R	C	L	-
CO-2	Examine the production and cost process of the firm	PO-1,2,3 PSO- 1,5	U, An, E	C, F,	L	-
CO-3	Evaluate the notion of the	PO-1,2,3 PSO-	U, An, E	C, P, M	L	-

	market and its different forms	1,3,5				
CO-4	Examine the pricing strategies of firms with market power	PO-1,2,3 PSO-1,3,5,6	E, An, E, C	F, P, M	L	-
CO -5	Apply the theories and principles of Managerial Economics in daily life.	PO-1,2,3,4,7 PSO-3,5,6	Ap, C	M		

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs:

	PSO 1	PSO 2	PSO 3	PSO4	PSO5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	3	-	1	-	2	-	3	2	1	-	-	-	-
CO 2	3	-	1	-	2	-	3	2	1	-	-	-	-
CO 3	1	-	2	-	3	-	1	3	2	-	-	-	-
CO 4	-	-	3	-	2	1	2	-	-	-	3	-	1
CO 5	-	-	3	-	1	2	3	-	2	-	-	-	1

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics:

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓	✓		✓
CO 2	✓	✓		✓
CO 3	✓	✓		✓
CO 4	✓	✓		✓
CO 5		✓	✓	

University of Kerala

Discipline	ECONOMICS				
Course Code	UK2DSCECO104				
Course Title	Industrial Economics				
Type of Course	DSC				
Semester	II				
Academic Level	100 - 199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	Basic understanding of Economics				
Course Summary	The course offers a comprehensive introduction to the fundamental principles, theories, and practices of economics applied to the industrial sector with a specific focus on Indian Industry.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Introduction**	**15**
	1	Nature and scope of Industrial Economics	
	2	Basic Concepts- Plant, Firm, Cartel, Industry, Industrial structure, Market, Market structure, Market power, Market conduct, Market performance.	
	3	Organization of a Firm-Ownership, Organisation, and Control of a Firm.Passive and active behavior of a Firm. Pricing and Investment decisions, Seller's concentration.	
	4		
II		**Theories of Industrial Location and Market Analysis**	**12**
	5	Industrial location – determinants	
	6	Theories of Industrial location – Weber and Sargent Florence- Factors affecting location	
	7	Market concentration and measures of market concentration	
	8	Advertisement, optimal advertisement, and cost of advertisement.	
III		**Industrial Finance and labour**	**15**
	9	Mode of Finance – owned, external, and other components of funds	
	10	Institutional finance – IDBI, IFCI, SFCS, SIDC, Commercial Banks, Share Market, Insurance companies, pension funds.	
	11	FDI and FII	
	12	Structure of Industrial Labour. wages and problems of bonus	
	13	Employment in Indian Industry	
	14	Industrial legislation, industrial relations, Exit policy and social security	
	15	labor market reforms – issues, policies, and reforms in India.	
	16		

	17		
IV		**Indian Industry**	**10**
	18	Industrial growth and pattern of growth, recent trends in growth.	
	19	Classification of Industry, MNCs and their role, Technology Transfer,	
	20	Public and private sector, Public sector reforms, Industrial sickness	
	21	Role of Small-scale Industries, Problems.	
	22	Environmental issues.	
V		**Case Work**	**8**
	23	Analyzing issues of specific industries -steel, cotton, and coal**.**	
	24	Assessing the industrial growth and issues of a locality.	
	25	CMIE data sets can be used.	

Reading List

1. Ahluwalia. I.J (1985), Industrial growth in India, Oxford University Press, New Delhi.
2. Bains, J.S. (1996), Industrial Organisation, Cheltenham, U.K.
3. Barthwal. R.R. (1985), Industrial Economics, Wiley Eastern Ltd., New Delhi.
4. Cherunilam, F. (1994), Industrial Economics: Indian Perspective (3rd Edition), Himalaya Publishing House, Mumbai.
5. Das, N. (1969), The Public Sector in India, Vora and Company, Bombay.
6. Dasgupta, P.S., Marglin and A. Sen (1972), Guideline for Project Evaluation, Unido Publications, New York.
7. Desai. B. (1991), Industrial Economy in India, (3rd Edition), Himalayan Publishing House,Mumbai.
8. Divine, P.J. and R.M. Jones et al. (1976), An Introduction to Industrial Economics, George Allen and Unwin Ltd., London.
9. Penrose E, The Theory of the Growth of the Firm, Blackwell, Oxford University Press, 1959.
10. Fog, B. (1959), Industrial Pricing Policies, North Holland, Amsterdam.
11. https://www.proquest.com/

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the basic principles of industrial economics	R, U	PSO-1
CO-2	Apply economic theories to analyze real-world industrial scenario	Ap.An	PSO-2
CO-3	Develop critical thinking and analytical skills for understanding and evaluating the industry.	An, E	PSO-3,4
CO-4	Analyse and evaluate the Indian industrial structure.	An, E	PSO-2,3

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create
Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture:Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understand the basic principles of industrial economics	PO-1 PSO-1	R, U	F, C	L	-
CO-2	Apply economic theories to analyze real-world industrial scenarios.	PO-1,2 PS-2	Ap, An	P, M	L	-
CO-3	Develop critical thinking and analytical skills for understanding and evaluating the industry	PO-1,2,3 PSO-3,4	An,E	P, M	L	-

| CO-4 | Analyse and evaluate the Indian industrial structure | PO-1,2 PSO-2,3 | An,E | P,M | L | - |

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO4	PSO5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	-	-	-	-	-	3					
CO 2		3	-	-	-	-	3	3				
CO 3	-	-	3	3	-	-	3	3	3			
CO 4	-	3	3		-	-	3	3				

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4	✓	✓		✓

University of Kerala

Discipline	ECONOMICS				
Course Code	UK2DSCECO105				
Course Title	Economic History of India				
Type of Course	DSC				
Semester	II				
Academic Level	100 – 199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	Basic understanding of the Indian Economy				
Course Summary	The course analyses the key aspects of Indian economic development during 1857-1947 of British colonial rule. It examines economic development in India in the context of colonial rule.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Introduction to Colonial Rule**	10
		Background- Colonial Administration-Colonial Exploitation	
II		**Macro-Economic Indicators**	12
		Growth and Trends of National Income- Population-Labour-Occupational Structure-Trade-Social Indicators-Life Expectancy-Poverty-Literacy	
III		**Agriculture, Industry, and Infrastructure**	15
		Agriculture- Agrarian Systems-Land Systems- Land Revenue Systems - Permanent Settlement in Bengal-Ryotwari and Mahal Wari system-Agrarian Distress.	
		Industrial Development-Textiles-Steel-Mining-Infrastructure-Railways-Ports-Trade. Comparison of India's economic	
		History with other colonized countries- nature of colonialization-economic exploitation-infrastructure-impacts on indigenous industries.	
IV		**Emergence of Indian Nationalism**	15
		The Economic Basis of Indian Nationalism-Drain Theory- Impact of World Wars-Bengal Famine- Deindustrialization -Rural Distress.	
		The emergence of Indian Capitalism and Economic Associations-Indian Economic thought- Colonial legacy.	
V		**Assessment of Colonial Rule**	8
		The colonial rule can be assessed using case studies focusing on specific economic policies like trade, land revenue systems, and Industrialization. Students can use datasets containing economic historical data and	

		statistical methods and graphs to understand trends and patterns and draw conclusions about the economic and structural changes during that period.	

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understanding the colonial history of India and its economic basis.	U	PSO-1,2
CO-2	Analyzing the growth and trends of various macroeconomic indicators	U, An	PSO-3
CO-3	Evaluating the impacts of colonial rule on the various sectors of the Economy.	An, E	PSO-2,3
CO-4	Analyze and Evaluate the economic element in the Indian national movement.	An, E	PSO-1,3

R-Remember, U-Understand, Ap-Apply, An-Analyze, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understanding the colonial history of India and its economic base.	PO-1 PSO-1,2	U	F, C	L	
CO-2	Analyzing the growth and trends of	PO-1,2,7 PSO-2,3	U, An, E	P, M	L	

	various macroeconomic indicators				
CO-3	Evaluating the impacts of colonial rule on the various sectors of the Economy.	PO-1,2 PSO-2,3	An, E	P	L
CO-4	Analyze and Evaluate the economic element in the Indian national movement.	PO-1,3 PSO-1,3	An, E	P, M	L

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs:

	PS O1	PS O2	PS O3	PS O4	PS O5	PS O6	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO7	PO8
CO 1	3	-	-	-	-	-	3	3						
CO 2		3	3	-	-	-	3	3					3	
CO 3	-	3	3	-	-	-	3	3						
CO 4	3	-	3		-	-	3		3					
CO 5	-		-	-	-	-								

CO 6	-	-	-		-	-								

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics:

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4	✓	✓		✓
CO 5				
CO 6				

Multi-disciplinary course

University of Kerala

Discipline	ECONOMICS				
Course Code	UK2ECOMDC100				
Course Title	GLOBAL ECONOMIC ISSUES				
Type of Course	MDC				
Semester	II				
Academic Level	100-199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	3	3	-	-	3
Pre-requisites	An understanding of the global economic Issues.				
Course Summary	This course provides an in-depth understanding of the global economic issues concerning geopolitical issues, and issues related to the environment and trade.				

Detailed Syllabus:

Module	Unit	Content			Hrs
I		**Introduction to the Global Economy**			**10**
	1	World Economy at a glance; Global Growth Trends, New World Bank Country Classification by Income Level, Challenges to Growth			
	2	Economic Downturns; Great Depression, Global Financial Crisis.			
	3	Multilateral Institutions; Role of IMF, World Bank, UNDP			
	4	International Cooperation; Relevance of G-7, G-20, BRICS and RCEP			
	5	Deglobalization and the World Economy			
II		**Global Economy: Geo-Political Issues**			**12**
	6	US-China Economic Relations; Consequences.			
	7	Ukraine-Russia War; Macroeconomic effects			
	8	Global Energy Crisis and Security; Oil Price Fluctuations			
	9	Covid-19 Pandemic; Impact on World Economy			
III		**Global Environmental Challenges**			
	10	Global Environmental Issues; Climate Change, Global Warming, Ozone Layer Depletion,			10
	11	Climate Change - Agreements, Conventions and Institutions			

	12	Concept and Measurement of Sustainable Development			
IV		**Global Issues in Trade**			**8**
	13	International Trade; Changing trends, Rise of Emerging Markets, Barriers to Trade in Goods and Services.			
	14	Trade and Environment			
	15	WTO and Trade			
V		**Global Economic Issues - Case Studies**			
	16	Discuss the Impact of the Global Financial Crisis on the Indian Economy.			5
	17	Prepare a presentation on Brexit and its economic implications.			
	18	Develop a report on the implications of Climate Change on Global Growth.			

Reading List

Module 1

- International Monetary Fund. World Economic Outlook. https://www.imf.org/en/Publications
- World Bank. World Development Indicators. https://datacatalog.worldbank.org/dataset/world-development-indicators
- The Economist. https://www.economist.com/finance-and-economics/2024/02/11/how-the-world-economy-learned-to-love-chaos
- Daniels, J. P., & VanHoose, D. D. (2018). Global Economic Issues and Policies.
- Eichengreen, B. (2010). Hall of Mirrors: The Great Depression, the Great Recession, and the Uses—and Misuses—of History. Oxford University Press.
- Stiglitz, J. E. (2019). Globalization and its Discontents Revisited: Anti-Globalization in the Era of Trump. W.W. Norton & Company.

Module 2

- Peterson Institute for International Economics. U.S.-China economic relations [Working paper]. https://www.piie.com/publications/working-papers/us-china-economic-relations
- IMF. https://www.imf.org/en/Publications/WP/Issues/2024/03/01/Medium-term-Macroeconomic-Effects-of-Russias-War-in-Ukraine-and-How-it-Affects-Energy-544043
- IMF. https://www.imf.org/en/Publications/fandd/issues/2022/12/bumps-in-the-energy-transition-yergin#:~:text=The%20current%20global%20energy%20crisis,fired%20up%20global%20energy%20consumption.
- World Bank. World Development Report. https://www.worldbank.org/en/publication/wdr2022/brief/chapter-1-introduction-the-economic-impacts-of-the-covid-19-crisis

Module 3

Charles Kolstad, Intermediate Environmental Economics, Oxford University Press,2nd edition
Anil, Sreeja S Nair ,Environmental Knowledge for Disaster Management NDM,New Delhi

Carter,Nick,1991,Disaster Management,Disaster Manager's Hand book, Asian Development Bank,Manila, Philippines

Module 4

- UNCTAD. https://unctad.org/system/files/official-document/ditctab2022d3_en.pdf
- World Trade Organization. https://www.wto.org/

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the dynamics of global economic growth and the mechanisms through which international cooperation is upheld	R, U	PSO 1,2,4
CO-2	Examine the geopolitical issues that influence the global economy	R, U	PSO 2,4
CO-3	Analyze the impact of environmental challenges on the global economy.	Ap, An	PSO 1,2,3
CO-4	Evaluate trade-related challenges within the global economy.	E	PSO 2,4

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understand the dynamics of global economic growth and the mechanisms through which international cooperation is upheld	PO – 1. PSO-1,2,4	R, U	C	L	-
CO-2	Examine the geopolitical issues that influence the global	PO-1. PSO 2,4	R, U	P, M	L	

	economy				-
CO-3	Analyze the impact of environmental challenges on the global economy.	PO-1,2,3 PSO 1,2,3	AP. An	P, M	L	-
CO-4	Evaluate trade-related challenges within the global economy.	PO-1,2 PSO 2,4	E	P	L	-

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs:

	PSO 1	PSO 2	PSO 3	PSO4	PS O5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6	P07
CO 1	1	3	-	2	-	-	3	-	-	-	-	-	-
CO 2	-	3	-	2	-	-	2	-	-	-	-	-	-
CO 3	1	2	3	-	-	-	1	2	2	-	-	-	-
CO 4	-	2	-	3	-	-	1	2		-	-	-	-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low

2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment / Discussion / Seminar
- Internal Exam
- Project Evaluation
- Final Exam

Mapping of COs to Assessment Rubrics:

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓		✓	✓
CO 2	✓			✓
CO 3	✓	✓	✓	✓
CO 4	✓	✓	✓	✓

University of Kerala

Discipline	ECONOMICS				
Course Code	UK2MDCECO10I				
Course Title	SOCIAL SCIENCE SURVEY TECHNIQUES				
Type of Course	MDC				
Semester	II				
Academic Level	100-199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	3	3 hours	-	-	3
Pre-requisites					
Course Summary	To understand the basic concepts in social science survey. This course will help students to proceed with a research problem, the steps he/she should adopt, and tools to be used for doing quality research				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		Fundamental concepts of social science survey	9
	1	Meaning of Social Surveying	
	2	Steps of the process of a survey	
	3	Formulation of the problem: objectives and goals	
	4	Identify the target audience	
	5	Design a questionnaire -Field survey -Analysis -Report Writing	
II		Tools and techniques for surveying	9
	6	Survey methods: Sampling method and census method -Descriptive, Exploratory cross -Section studies	
	7	Participatory-Empirical Survey – Case studies	
	8	Data collection: Questionnaire (postal, group-administered or online surveys, kiosk survey) surveys, interview surveys (personal telephone or focus group interviews	
	9	Delphi Method, Panel sampling method	
	10	Qualities of a good questionnaire -Pilot survey	
III		Data Collection Analysis	10
	11	Qualitative data analysis: content analysis, narrative analysis, discourse analysis, thematic analysis, and grounded theory analysis	
	12	quantitative analysis: Descriptive Statistics	
	13	Frequency Distribution, measures of central tendency: mean median mode, Use of Statistical packages like Gretl.	

	14	Mixed Data analysis	
IV		Report writing in social science survey	8
	15	Components of survey reports	
	16	Purpose of the survey report	
	17	Writing a survey proposal	
	18	Structure of survey report: Preliminary section, Main report, Interpretation of result, Suggested recommendations	
		Bibliography -Reference – footnotes	
V		FIELD SURVEY	9
	19	Preparation of a report on socio-economic problems or conduct a survey related to the contemporary issues of a nearby village/Locality and Seminar Presentation	

Basic Reading List

1. Bhattacherjee, A. (2012). Social Science research: Principles, methods and practices. 2nd Edn., University of South Florida, ISBN-13: 978-1475146127
2. Corbetta, P. (2003). Social research: Theory, methods and techniques. Sage Publn.
3. Bryman, Alan.1988.Quality and Quantity in Social Research.London: Unwin Hyman
4. Kothari,C.R., Gaurav Garg (2023), Research Methodology: Methods and Techniques, 5th Edn., New Age Publication, ISBN-13: 978-9389802559
5. Krishnaswami, O.R., Ranganatham , M. (2016), Methodology of research in Social Sciences, Himalaya Publishing House, ISBN: 978-9350975695
6. Eun Sul Lee, Ronald N. Forthpfer (2005), Analyzing Complex Survey Data, 2nd Edn, Sage University Paper, ISBN-13: 978-0761930389

Additional Reading List

1. Young, P.V.1988, Scientific Social Surveys and Research. New Delhi: Prentice Hall
2. Ahuja, Ram.2001.Research Methods. New Delhi:Rawat Publications
3. Lewis-Beck, M., Bryman, A.E., & Liao, T.F.(2003).The Sage encyclopedia of social science research methods. Sage Publications.

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the basic concepts in social science survey	R, U	PSO-1
CO-2	This course will help students to proceed with a research problem ,the steps he/she should adopt and tools to be used for doing quality research	R, U	PSO-2 PSO-3
CO-3	Analyse the various techniques in data collection	E, An	PSO-3
CO-4	Understanding about designing and writing a research report	Ap, E	PSO-1 PSO-3

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

| CO-5 | Evaluate and create a report based on a survey | | C, Ap, E | PSO-6 PSO-3 |

S-

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/ Tutorial (T)	Practical (P)
CO-1	Understand the basic concepts in social science survey	PO-1, PSO-1	R, U	C,F	L	-
CO-2	This course will help students to proceed with a research problem and the steps he/she should adopt and tools to be used for doing quality research	PO-1 PO-2 PSO-2 PSO-3	R, U	P, M	L	-
CO-3	Analyse the various techniques in data collection	PO-7 PO-8 PSO-3	An, E	P,F	L	-
CO-4	It will help to develop an understanding of designing and writing a research report	PO-1, PO-2, PO-7, PSO-1 PSO-3	Ap, E	P, M	L	-
CO-5	To evaluate and create a report based on a survey	PO-2 PSO-6	C, Ap, E	P, M	L	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs:

	PSO 1	PSO 2	PSO 3	PSO 4	PSO5	PSO 6	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO 1	3	-	-	-	-	-	3	-	-	-	-	-	-	-
CO 2	-	2	3	-	-	-	2	3	-	-	-	-	-	-
CO 3	-	-	3	-	-	-	-	-	-	-	-	-	3	3
CO 4	1	-	3	-	-	-	1	2	-	-	-	-	3	-
CO 5	-	-	-	-	-	3	-	2	3	-	-	-	-	-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓	-	-	✓
CO 2	✓		-	✓
CO 3	✓	✓	-	✓
CO 4	-	-	-	✓
CO5	-	✓	✓	✓

SEMESTER III

Discipline Specific Core			
UK3DSCECO200	Microeconomics-1	DSC	200-299
UK3DSCECO201	Human Resource Planning	DSC	200-299
UK3DSCECO202	Economic Demography	DSC	200-299
UK3DSCECO203	Economics of the Service Sector	DSC	200-299
UK3DSCECO204	Money and Banking	DSC	200-299
Discipline-Specific Elective (can select one)			
UK3DSEECO200	Behavioral Economics	DSE	200-299
UK3DSEECO201	Economics of Insurance	DSE	200-299
Value Added Course			
UK3VACECO200	Environment and Climate Change	VAC	200-299

Discipline Specific Core

University of Kerala

Discipline	ECONOMICS				
Course Code	UK3DSCECO200				
Course Title	Microeconomics I				
Type of Course	**DSC**				
Semester	III				
Academic Level	200 -299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	Preliminary knowledge of microeconomics				
Course Summary	The course lays the foundations of microeconomic theory. It presents the Behavior of the consumer and the producer and explains the different types of markets.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I	1	**Consumer Theory**	10
		Description of consumer preferences (representing preferences with indifference curves)-propertiesofindifferencecurves-budgetconstraint-consumer'sequilibrium-incomeandpricechanges–derivation of price consumption curve, income consumption curve, and Engel's curve – Substitution effect, income effect, and law of demand- Slutsky equation- Compensating and equivalent variation – concepts of Marshallian and compensated demand curves.	
	2	Revealed preference theorem of Samuelson-derivation of demand curve-recent Theories in demand analysis-the pragmatic approach to demand analysis- Linear Expenditure System -indirect utility function.	
II	3	**Producer Theory**	15
		Production function– isoquants and diminishing rate of factor substitution– isocost line- production decision- optimal input combination- producer's equilibrium-expansion path-homogeneous and homothetic production function and their properties-Cobb-Douglas, CES, VES,Translog production functions.	
		Modern Theory of cost: short run and long run – engineering cost- Economies and diseconomies of scale.	

III		**The market structure under Perfect Competition and Monopoly**	**10**
		Perfect Competition-features and assumptions-pure vs perfect competition- long-run and short-run equilibrium- monopoly- short-run and long-run equilibrium- price discrimination; degrees and types- monopoly power – Lerner Index- social cost of monopoly- monopsony and bilateral monopoly.	
IV		**Market Structure under Monopolistic Competition and Oligopoly and Welfare Economics**	**15**
		MonopolisticCompetition-non-pricecompetitionandsellingcost-shortrun and long run equilibrium - excess capacity-Oligopoly - collusive oligopoly - cartels and price leadership - low-cost firm, dominant and barometric- non-collusive models- Cournot model -Stackelberg model - Bertrand model - Sweezy model. Welfare economics–Criteria of social welfare-Pareto optimality-Kaldor-Hicks Compensation criterion- Scitovsky criterion.	

V	Do a study on a monopoly like KSEB, examine its price and output decisions, and price discrimination practices followed it, and find out the factors that led KSEB to monopolize Kerala's electrical-power market .		**10**

References

1. KarlE.Case and RayC.Fair,SharonM.Oster,Principles of MicroEconomics, Pearson Education Inc., 11thEdition, 2014

2. Robert Pindyck&Daniel Rubinfeld, Microeconomics(8thedition),PearsonEducation, 2017

3. Dominick Ssalvatore,Principles of Microeconomics(8thedition),,Oxford University

Press, 2009

4. D N Dwivedi, Microeconomics: Theory and Applications (4thEdition), , Visionias,2024.

5. GSMadala and EllenMiller,MicroEconomics-Theory and Applications,Tata McGraw Hill, 2004.

6. Hal R Varian,Intermediate Microeconomics: A Modern Approach 8thedition,W.W.Norton and Company Affiliated east-West Press, 2011.

7. A.Koutsoyiannis.(1979).Modern micro economics.Palgrave McMillan.

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Compare different theories on consumer behavior	E	PSO-1
CO-2	Compare different types of production functions and arrive at the optimal level of production.	An, E	PSO-1,3
CO-3	Understand the fundamentals of market mechanisms and analyze pricing strategies.	U, An	PSO-1,3
CO-4	Evaluate different types of markets	An, E	PSO-1, 3
CO-5	Evaluate the effect of policies on welfare	Ap,An, E	PSO-1,2,3

R-Remember,U-Understand,Ap-Apply,An-Analyze,E-Evaluate,C-Create

Note:1 or2 COs/module

NameoftheCourse:Credits:4:0:0(Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Compare different theories on consumer behavior	PO-1 PSO-1	E	F, C	L	
CO-2	Compare different types of production functions and arrive at the optimal level of production	PO-1,2 PSO-1,3	An, E	F,C, P	L	
CO-3	Understand the fundamentals of market mechanisms and analyse pricing strategies.	PO-1 PSO-1,3	U, An	F, C	L	
CO-4	Evaluate different types of markets	PO-1,2 PSO 1,3	An, E	F,C	L	
CO-5	Evaluatethe effect of policies on welfare	PO-1,2,3 PSO-1,2,3	Ap,An, E	F, C, M	L	

F-Factual,C-Conceptual,P-Procedural,M-Metacognitive

Mapping of COs with PSOs and POs

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	-	-	-	-	-	3					
CO 2	3		2	-	-	-	3	2				
CO 3	3	-	3	-	-	-	3					
CO 4	3	-	2		-	-	3	3				
CO 5	3	3	2	-	-	-	3	2	3			

CorrelationLevels:

Level	Correlation
-	Nil
1	Slightly/Low
2	Moderate/ Medium
3	Substantial/ High

University of Kerala

Discipline	ECONOMICS				
Course Code	UK3DSCECO201				
Course Title	Human Resource Planning				
Type of Course	DSC				
Semester	III				
Academic Level	200 - 299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	Basic Understanding of Economics				
Course Summary	The course provides an overview of human resource planning and the importance of aligning organizational goals with workforce needs. It also provides an understanding of forecasting techniques, talent acquisition strategies, and the role of HR in organizational development.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Introduction**	**15**
	1	Human resource planning- Definition-- Features of HRP	
	2	Significance of Human Resource Planning	
	3	The importance of Human Resource Planning in the current scenario- Employment situation- technological changes- organizational changes- demand for skill-demographic changes- government policies-the emergence of systems concept.	
	4		
II		**Human Resource Planning Strategy**	**10**
	5	Strategic planning-organizational strategy	
	6	Human resource as a core competency	
	7	Human resource strategy and organization life cycle	
	8		
III		**Human Resource Planning: Process, Methods and Techniques**	**12**
	9	Demand forecasting- quantitative and qualitative approaches- methods- Work study techniques, Job analysis Managerial/Executive judgment, Statistical Techniques Projecting Past Trends in Employment, Productivity Measurement Method, Time series.	
	10	Supply Forecasting- sources of supply - external and internal analysis.	
	11	Determination of manpower gaps.	
IV		**Human Resource Planning, Development and Management**	**15**
	12	Relationship between Human Resource Planning, Development and Management.	
	13	Human resource management functions -Primary and Secondary	
	14	Human resource development- the significance of Human Resource Development- Role of technology -Human Resource Information Systems-	

		data analytics in workforce planning – AI and Automation in Human Resource planning.	
	15	Significance of Human Resource development in the context of globalization in emerging economies like India.	
V		**Case Studies**	**8**
	16	Understanding SWOT analysis by preparing a SWOT statement.	

Reading List

1. Human Resource Planning and Strategic Change (2023), Sujith Kumar Acharya and Santosh Kumar Tripathi, Himalaya Publications.
2. Human Resource Planning (2012), Lucky Puchhrat, Gullybaba Publishing House(P) Ltd.
3. Human Resource Planning (2009), D K Bhattacharyya, Excel Publications
4. Human Resource Management: Theory and Practice (2012), John Bratton and Jeff Gold, Macmillan Publishers.
5. Human Resource Management: Text and Cases (2023), K Aswathappa and Sadhna Dash, McGraw Hill.
6. Manpower planning and the development of human resources (1971), Patten, Thomas H, John Willey, and Sons.

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the concept and significance of human resource planning in organizational structure	R, U	PSO-1,2
CO-2	Analyse forecasting techniques to predict future workforce needs.	An, E	PSO-2,3
CO-3	Evaluate the impact of human resource planning on organizational performance	An, E	PSO-3,4,5
CO-4	Develop skills in designing and implementing effective human resource planning.	E, C	PSO-5,6

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understand the concept and significance of human resource planning in organizational structure	PO-1 PSO-1,2	R, U	F, C	L	
CO-2	Analyse forecasting techniques to predict future workforce needs	PO-1,2 PSO-2,3	An, E	P	L	
CO-3	Evaluate the impact of human resource planning on organizational performance	PO-2,3 PSO-3,4,5	An, E	P, M	L	
CO-4	Develop skills in designing and implementing effective human resource planning	PO-2,3 PSO-5,6	E, C	P, M	L	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs:

	PSO 1	PSO 2	PSO 3	PSO4	PS O5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	3	-	-	-	-	3					
CO 2		3	3	-	-	-	3	3				

CO 3	-	-	3	3	3	-		3	3			
CO 4	-	-			2	2		3	3			

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics:

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓	✓		✓
CO 2	✓	✓		✓
CO 3	✓	✓		✓
CO 4	✓	✓		✓

University of Kerala

Discipline	ECONOMICS				
Course Code	UK3DSCECO202				
Course Title	ECONOMIC DEMOGRAPHY				
Type of Course	DSC				
Semester	III				
Academic Level	200 - 299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	An understanding of key concepts in Economics and Demography				
Course Summary	The course on "Economic Demography" provides an understanding of the determinants of population change and the effect of population growth on the economic development of an economy. The course also provides students with an understanding of the current population scenario of India.				

Detailed Syllabus:

Module			
I	Unit	**Introduction to Economic Demography**	**10 Hrs**
		Nature, scope, and importance of economic demography- Impact of population growth on economic development- Technological change and population growth- Population growth and environment: Global Warming-Tragedy of the commons-Sources of demographic data: Census, sample survey- vital statistics- registration system- Population projection: Meaning-its importance in economy-various methods of population projection	
II		**Population Dynamics**	**15 Hrs**
		Determinants of population growth: fertility, mortality, and migration- Fertility: meaning and concepts, ASBR, TFR, GFR, GRR, NRR- Factors affecting fertility-Impact of education on fertility	
		Mortality: CDR, ASDR, IMR, MMR, CSDR, child mortality rate, NNMR- Factors affecting Mortality –Age pyramid and demographic dividend- The consequences of age structure on economic development-Life tables: Types-construction-importance.	

		Nuptiality: Meaning-CMR-GMR-ASMR-SMAM-Factors determining nuptiality	
		Migration – meaning, types and importance – emigration-immigration – internal migration- Factors affecting migration (push and pull factors)- Its impact on labour market- Role of foreign remittances in an economy–Urbanization: meaning-causes and effects.	
III		**Theories of Population**	**10 Hrs**
		Malthusian Theory- Theory of Demographic Transition- Biological theories- Socio-economic theories- Optimum Theory of population- Marx's theory on population- Julian Simon's Theory of population growth	
IV		**Demographic Data Base of India**	**15 Hrs**
		India's population structure – Important Features of Census of India: 2001 & 2011 and NFHS-I, II, III, IV & V- National Population Policy 2000- India's age structure and its effects on economic development- Problem of aging: its causes and consequences.	
V		**An analytical study**	**10 Hrs**
		A study on current demographic scenario of India and states may be conducted.	
		An analytical and comparative study can be conducted based on India's population data for various years.	

Reading List:

1. Bhende A.A. and Tara Kanitkar (2019)- 'Principles of Population Studies'- Himalaya Publishing House, Bombay
2. Bouge, D.J. (1969) – ' Principles of Demography', John Wiley, New York
3. India, Government of, National Population Policy 2000, New Delhi: Dept. of Family Welfare
4. Oberi, A S et al, (1989), Determinants and Consequences of internal migration in India – Delhi Oxford University Press.
5. United Nations, Determinants and consequences of population trends – New York United Nations
6. https://censusindia.gov.in/
7. https://main.mohfw.gov.in/
8. Harris, John R. & Todaro, Michael P. (1970), "Migration, Unemployment and Development: A Two-Sector Analysis", *American Economic Review*, **60** (1): 126–142,
9. http://www.ed.lu.se/
10. Birdsall, N., A.C. Kelley, and S. Sinding (eds.). 2001. *Demography matters: Population change, economic growth and poverty in the developing world.* Oxford: Oxford University Press.
11. Bloom, D.E., and J.G. Williamson. 1998. Demographic transitions and economic miracles in emerging Asia. *World Bank Economic Review* 12: 419–455.

12. Bloom, D.E., D. Canning, and P. Malaney. 2000. Demographic change and economic growth in Asia. *Population and Development Review* 26: 257–1990.
13. Coale, A.J., and E.M. Hoover. 1958. *Population growth and economic development in low-income countries*. Princeton: Princeton University Press.
14. Kelley, A.C. 1988. Economic consequences of population change in the Third World. *Journal of Economic Literature* 26: 1685–1728.
15. Kuznets, S. 1960. Population change and aggregate output. In *Demographic and economic change in developed countries*, National Bureau of Economic Research. Princeton: Princeton University Press.
16. Armichael, G. A. (2016). *Fundamentals of demographic analysis: Concepts, measures and methods*. Springer.
17. John R. Weeks. 2015. Population (12 th Edition). Belmont, CA: Wadsworth, Thompson Learning, Inc.
18. John Bongaarts. 2004. Population Aging and the Rising Cost of Public Pensions. Population and Development Review, 30:1-23.

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Familiar with basic concepts and sources of data in demography	U	PSO 1
CO-2	Analyse population data and trends	An	PSO 3
CO-3	Grasp a clear understanding of the inter-relationship between demography and the process of economic development	U	PSO 2
CO-4	Analyse current demographic scenario of India	An	PSO 3
CO-5	Analyse the causes and consequences of migration and urbanization	U,An	PSO 3, PSO2

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture:Tutorial:Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
1	Familiar with basic concepts and sources of data in Demography	PSO 1	U	F,C	L	
2	Analyse population data and trends	PSO 3	An	P	L	
3	Grasp a clear understanding of the inter-relationship between demography and the process of economic development	PSO 2	U	F	L	

| 4 | Analyse current demographic scenario of India | PSO 3 | An | F | L | |
| 5 | Analyse the causes and consequences of migration and urbanization | PSO 3, PSO2 | U,An | F | L | |

F-Factual, C- Conceptual, P-Procedural, M-Meta cognitive

Mapping of COs with PSOs and POs:

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	-	2	-	-	-	-	-	-	-	-	3
CO 2	-	-	3	-	-	-	3	3	-	-	-	2
CO 3	-	3	-	-	-	-	3	3	-	-	-	3
CO 4	-	-	3	-	-	-	3	3	-	2	-	2
CO 5	-	2	3	-	-	-	3	3	-	-	2	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly/Low
2	Moderate/Medium
3	Substantial/High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	√			√
CO 2		√		√
CO 3	√	√		√
CO 4		√		√
CO 5	√	√		√

University of Kerala

Discipline	ECONOMICS				
Course Code	UK3DSCECO203				
Course Title	Economics of the Service Sector				
Type of Course	DSC				
Semester	III				
Academic Level	200 - 299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-		4
Pre-requisites	Basic understanding of Economics.				
Course Summary	The course deals with various economic aspects of the service sector economy. It includes studies on trade in services and macroeconomic dynamics in services sector growth in India.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Introduction**	15
	1	Definition of service- types and classification. Activities in the service sector, Economic services, rural and urban services, Dualism. Unorganized and Organised service sector .	
	2	Services Economy- Definition and its role in development, Contribution to GDP in different Developed and Developing Countries, and linkages to other sectors.	
	3	Sub sectors in the service sector, Knowledge economy, innovation, and Research and development.	
II		**Theories of the service sector**	10
	4	Unbalanced growth, Fisher-Clark hypothesis, Fuchs model of inter-sectoral shift in employment, Neo-Industrial Theory of Self-Services.	
III		**Pricing and Measurement of Services**	15
	5	Service- value and its calculation. Features on non-market services	
	6	Factors affecting demand and supply in the service sector.Service production, supply, and distribution. Cost function and optimal charges of service.	
	7	Market economy and provision of services.	
	8	Measuring output and productivity in the service sector and issues.	
IV		**Trade in Services**	15
	9	Features of Trade in Services- Barriers to trade in services;	
	10	Global Trade in Services- General Agreement on Trade in Services (GATS), Impact of globalisation-outsourcing, offshoring.	
	11	India's Trade Policy and Trade in Services, Role of the service sector in Indian Economy Reforms in the service sector.	

FYUGP-ECONOMICS

	12	Employment generation in the Services Sector- Business Services, Telecommunications, Tourism, health care, IT, hospitality,and ITES in India, Gender dimension, FDI in services.	
V		**Case Studies**	**5**
	13	Tracing the growth of the service sector in India and the changes in its sectoral contribution to the GDP.	

Reading List

1. Akehurst, G. and J. Gadrey, The Economics of Services, Routledge, 1998 (Modules 1 and 2)

2. Chanda, R., Trade in Services and India: Prospects and Strategies, Wiley India, 2006 (Module 3)

3. Chanda, R., Globalization of Services: India's Opportunities and Constraints, Oxford University Press, New Delhi, 2002 (Module 3)

4. Jansson, J. O., The Economics of Services, Development and Policy, Edward Elgar Publishing, 2006 (Module 1 and 2)

5. Economic Census of India

6. https://mospi.gov.in/25-services-sector-statistics

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Develop a good understanding of the economics of the service sector.	R, U	PSO-1
CO-2	Analyze the role of service sector in the economy	An, E	PSO-1,2
CO-3	Analyse and evaluate the trade in services and the impact of globalization on the service sector.	An , E	PSO-2,4
CO-4	Analyse and evaluate the role of service sector in the Indian Economy.	An, E	PSO-2,3

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial:Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Develop a good understanding of the economics of the service sector.	PO-1,2 PSO-1	R, U	F, C	L	
CO-2	Analyze the role of service sector in the economy	PO-2,3 PSO-1,2	An, E	P	L	
CO-3	Analyse and evaluate the trade in services and the impact of globalization on the service sector	PO-2,3 PSO-2,4	An , E	P, M	L	
CO-4	Analyse and evaluate the role of the service sector in the Indian Economy.	PO-2,3 PSO-2,3	An, E	P, M	L	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO4	PS O5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	-	-	-	-	-	3	3				
CO 2	2	2	-	-	-	-	2	2				
CO 3		2		3	-	-		2	2			

CO 4	-	2	3		-	-		3	3			

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4	✓	✓		✓

Discipline	ECONOMICS				
Course Code	UK3DSCECO204				
Course Title	MONEY AND BANKING				
Type of Course	DSC				
Semester	III				
Academic Level	200-299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4 hours
Pre-requisites					
Course Summary	The course on "Money and Banking" offers an in-depth exploration of the core principles and operational aspects governing monetary systems and financial institutions. Students engage with various monetary policy frameworks, and the functions of central banking entities. Using both theoretical concepts and practical examples, they can investigate subjects such as the determination of money supply, interest rate dynamics, the role of commercial banks in economic processes, and financial intermediation. Moreover, the curriculum encompasses the regulatory landscape surrounding banking systems, addressing issues such as risk assessment, maintaining financial stability, and overseeing banking activities. Through the analysis of real-world case studies and contemporary events, students gain valuable insights into the dynamic nature of money and banking within the modern global economic context.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**MONEY**	10
	1	Concept of Money: Kinds, Functions and Significance	
	2	Monetary Standards: Metallic Standard, Gold Standard and Paper Standard	
	3	Value of money: Measurement of changes in the value of money	
	4	High Powered Money and Money Multiplier	
	5	Indian Currency system	
II		**INTRODUCTION TO BANKING**	12
	6	Indian Banking System; Structure and Changing role	
	7	Banks as an engine of Growth	
	8	Payment Banks and Small Finance Bank	

	9	Commercial Bank; Classification of Bank	
	10	Cooperative credit structure	
	11	Role of Non-Bank Financial Institutions	
III		**CENTRAL BANK**	15
	12	Reserve Bank of India and its functions	
	13	Banking sector reforms in India	
	14	Foreign Exchange Management Act, 1999	
	15	The Prevention of Money Laundering Act, 2002	
	16	Securitization and Reconstruction of Financial Assets and Enforcement of Securities Interest Act (SARFAESI)	
IV		**DIGITAL BANKING AND E-COMMERCE**	15
	17	E-Banking; Internet Banking, Mobile Banking, E-Wallet, UPI Payment	
	18	Electronic Fund Transfer; Electronic Clearing Services, NEFT, RTGS, SWIFT and IFSC	
	19	Digital Currency; Crypto Currency.	
V		**Bank visit**	8
	20	Visit to a commercial to study bank	
	21	customer relationship and submit the report	

Reading List

1. Hajela, T.N (2009): Money and Banking: Theory with Indian Banking, Ane Books Pvt Ltd

2. Bhatia H L, Pubic Finance; Sage Publications, 2008

3. Bhole, L.M (2004): Financial Institutions and Markets: Structure, Growth and Innovations, McGraw Hill Education

4. Turban, Efraim, David King et.al (2002): Electronic Commerce: A Managerial Perspective, Pearson Education Asia, Delhi.

5. Kalakota, Ravi and Andrew B. Whinston (2009) : Frontiers of Electronic Commerce, Pearson Education India

6. Rayport, Jeffrey F and Jaworksi. Bernard J (2003): Introduction to E-Commerce, Tata McGrawHill

7. Michael W. Brandi (2019): Money, Banking, Financial Markets and Institutions, Cengage India Pvt Ltd, New Delhi

8. Khan, M. Y. (2019). Indian Financial System, 11th ed. McGraw Hill, New Delhi.

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the role of money and banks in the broader economy	R, U	PSO-1,3
CO-2	Examine the unique role of banks in the financial system.	R, U	PSO-1,4
CO-3	Evaluate the relevance of the central bank in the current financial market.	E	PSO-2,4
CO-4	Analyse the role and significance of digital banking and e-commerce	Ap, An	PSO-3,4

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture:Tutorial:Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO1	Understand the role of money and banks in the broader economy	PO-1, PSO-1,3	R,U	C	L	
CO2	Examine the unique role of banks in the financial system.	PO-1, PSO-1,4	R,U	C		
CO3	Evaluate the relevance of the central bank in the current financial market.	PO-1, PSO-2,4	E	P,M		
CO4	Analyze the role and significance of digital banking and e-commerce	PO-2,6 PSO-3,4	Ap,An	P,M	L	P

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs:

	PSO 1	PSO 2	PSO 3	PSO4	PSO 5	PSO 6	PO1	PO 2	PO3	PO4	PO 5	PO6
CO 1	3	-	-	3	-	-	1	-	-	-	-	-
CO 2	3	-	-	3	-	-	1	-	-	-	-	-
CO 3	-	1	-	3	-	-	2	-	-	-	-	-
CO 4	-	-	3	3	-	-		2	-	-	-	2

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics:	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓	-	-	✓
CO 2	✓	✓	-	✓

CO 3		✓	✓	-	✓
CO 4		-	✓	✓	-

Discipline Specific Elective

University of Kerala

Discipline	ECONOMICS				
Course Code	UK3DSEECO200				
Course Title	**Behavioural Economics**				
Type of Course	**DSE**				
Semester	III				
Academic Level	200 – 299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	Basic understanding of economic principles				
Course Summary	This course introduces the field of behavioral economics, which combines insights from psychology and economics to understand how individuals make decisions. Topics covered include cognitive biases, decision-making under uncertainty, behavioral game theory, nudges, and applications in various domains such as finance, public policy, and marketing.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Introduction to Behavioural Economics**	**12**
	1	Overview of Traditional Economics Vs Behavioural Economics	
	2	Historical development and key contributors	
	3	Psychological foundations of decision making: heuristics, biases, bounded rationality	
	4	Introduction to cognitive biases and their impact on decision making	
II		**Decision-Making Under Risk and Uncertainty**	**15**
	5	Prospect theory: value function, loss aversion, probability weighting	
	6	Behavioural biases in risk perception: Ambiguity aversion, overconfidence, framing effects	
	7	Application to individual decision-making, insurance, and investment	
III		**Game Theory with Behavioural insights**	**15**

	8	Basic game theory concepts: Strategic interactions, Nash equilibrium	
	9	Incorporating Psychological Factors into strategic decision making	
	10	Applications to bargaining, auctions, and other economic interactions	
IV		**Nudges and Choice Architecture**	**10**
	11	Introduction to Nudges	
	12	Choice architecture and libertarian paternalism	
	13	Nudges in Practice- Real-world examples	
V		**Applications of Behavioural Economics**	**8**
	14	Behavioral insights in Public policy	
	15	Behavioural economics in marketing and consumer behaviour	
	16	Behavioural insights in health care and education	

Essential Readings

1. An Introduction to Behavioural Economics by Wilkinson and Klaes, Palgrave McMillan 2012
2. Behavioral Economics: A very short introduction, by Michelle Beddeley, Rutledge, 2017

Additional Reading List

1. Cartwright , E, Behavioural Economics, Routledge, 2011
2. Diamond,P and Vartianen,H (eds) Behavioural Economics and its Applications, Princeton University Press, 2012
3. Behavioural foundations of economics by J.L. Buxter, McMillan Press.
4. Choice, Behavioural economics and addiction, edited by Ruby E Vachinich and Nick
5. Heather, Pergamon Elsevier, 2003,
6. Kahneman and Tversky (1979) "Prospect Theory: An Analysis of Decision Under Risk",
7. Econometrica, 47(2): 263– 291.
8. Thaler, Richard H. 1988. "Anomalies: The Ultimatum Game." Journal of Economic
9. Perspectives, 2(4): 195-206.
10. Tversky, A. and Kahneman, D. (1974) "Judgment Under Uncertainty: Heuristics and
11. Biases", Science, 185(4): 1124– 1131.
12. Thaler, R H and Sunstein, C R Nudge: Improving Decisions About Health, Wealtrh, happiness, Penguin books, 2009.
13. Ariely, D Predictably Irrational:The Hidden forces that shape our Decisions, Harper Collins, 2008.
14. Kahneman, D Thinking Fast and slow. Farrer, Straus and Giroux, 2011

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the foundational principles and key concepts of behavioral economics.	U	PSO-1

CO-2	Evaluate the implications of prospect theory and loss aversion on individual choices and market outcomes.	E	PSO-1,3,5
CO-3	Apply behavioral game theory concepts to understand strategic interactions and predict outcomes in social and economic settings.	Ap	PSO-1,3,5
CO-4	Critically evaluate the effectiveness of nudges and choice architecture in shaping individual behaviour and influence decision outcomes.	E	PSO-1, 3,5
CO-5	Explore the application of behavioral economics in different fields.	Ap	PSO-3,5

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture:Tutorial:Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
1	CO-1 Understand the foundational principles and key concepts of behavioural economics.	PO-1,2 PSO-1,2	U	F, C		
2	Evaluate the implications of prospect theory and loss aversion on individual choices and market outcomes.	PO- 1,2 PSO-1,3,5	E	F,P		
3	Apply behavioural game theory concepts to understand strategic interactions and predict outcomes in social and economic settings.	PO-1,2,3,6 PSO-1,3,5	Ap	F, C,P		
4	Critically evaluate the effectiveness of nudges and choice architecture in shaping individual	PO-1,3,4 PSO-1,2,3	E	F,C,P		

	behaviour and influence decision outcomes.												
5	Explore application of behavioural economics in different fields.	PO-1,2, 3,4,6 PSO-3,5	Ap		P								

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO4	PS O5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6	PO7	P08
CO 1	1	1	-	-	-	-	3	2	-	-	-	-	-	-
CO 2	2	3	-	-	3	-	3	3	-	-	-	-	-	-
CO 3	2	-	1	-	3	-	3	2	3	-	-	2	-	-
CO 4	1	2	3	-	-	-	3		2	2	-	-	-	-
CO 5	-	-	3	-	2	-	3	3	3	2	-	2	-	-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4		✓		✓
CO 5		✓		✓

University of Kerala

Discipline	ECONOMICS				
Course Code	UK3DSEECO201				
Course Title	Economics of Insurance				
Type of Course	DSE				
Semester	III				
Academic Level	200 - 299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	Basic understanding of Economics.				
Course Summary	The course examines the economic theories and behavioral models underlying the demand for and supply of insurance products.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Introduction**	**10**
	1	Insurance -Definition and role in risk management.	
	2	Risk and Uncertainty. Pure risk and speculative risk.	
	3	Economic functions of Insurance at the individual and national level.	
	4	Life, health, and general insurance.	
II		**Demand for Insurance**	**15**
	5	Major determinants for demand for insurance.	
	6	The expected utility maximization hypothesis.	
	7	Theory of Insurance demand-Insurance demand in the presence of irreplaceable assets- Demand for insurance without fair premiums- Demand for insurance with multiple risks.	
	8		
III		**Supply of Insurance and Risk Management**	**15**
	9	Supply of insurance-premium calculation-economies of scope and scale..	
	10	Fundamentals of risk management -Risk management and diversification	
	11	Risk Assessment, risk control, and risk financing-Forward contracts, futures, and options.	

IV		**Asymmetric Information and Insurance Regulation**	12
	18	Asymmetric information and impacts- Moral Hazard and adverse selection.	
	19	Types and effects of insurance regulation.	
	20	Recent trends in insurance regulation.	
V		**Case Studies**	8
	23	A survey to analyze the factors influencing the purchase of insurance products**.**	

Reading list

1. Zweifel, Peter and Eisen,Rolland (2012).Insurance Economics, Springer.
2. Dionne G and Harrington S.E (Ed),(1997), Foundations of Insurance Economics, Kluwer Academic Publications.
3. Beard R. E, Pentikainen T and Pesonen E (1984), Risk Theory: The stochastic Basis of Insurance, London, Chapman and Hall.

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the fundamental principles of insurance demand theory	R, U	PSO-1
CO-2	Analyze the role of risk, income, and other socioeconomic factors in insurance purchasing decisions.	An, Ap	PSO-2,3
CO-3	Analyse behavioral economics perspectives on insurance demand	An, Ap	PSO-3,6
CO-4	Analyse and evaluate policy implications and market dynamics related to insurance demand	An,E	PSO-3,6

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture:Tutorial:Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)

CO-1	Understand the fundamental principles of insurance demand theory	PO-1,2 PSO-1	R, U	F, C	L	
CO-2	Analyze the role of risk, income, and other socioeconomic factors in insurance purchasing decisions	PO-2,3 PSO-2 PSO-3	Ap,An	P	L	
CO-3	Analyse behavioral economics perspectives on insurance demand	PO-3,4 PSO-3,4	Ap,An	P	L	
CO-4	Analyse and evaluate policy implications and market dynamics related to insurance demand	PO-3,4 PSO-3,6	Ap,An	P,M	L	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO4	PS O5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	2	-	-	-	-	-	2	2				
CO 2		3	3	-	-	-			3	3		
CO 3	-	-	3	3	-	-			3	3		

CO 4	-	-	3		-	3			3	3		

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4	✓	✓		✓

Value Added Course

University of Kerala

Discipline	ECONOMICS				
Course Code	UK3VACECO200				
Course Title	Environment and Climate Change				
Type of Course	VAC				
Semester	III				
Academic Level	200-299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	3	3 hours	-	-	3
Pre-requisites					
Course Summary	The course titled "Environment and Climate Change" provides a thorough examination of the intricate interplay between human actions and the natural world, particularly focusing on climate change. Adopting a multidisciplinary approach, students delve into various aspects encompassing scientific, economic, social, and policy dimensions of environmental concerns. Key areas of study include the science behind climate change, its causative factors and consequences, strategies for both mitigating and adapting to its impacts, principles of sustainable development, and international accords about climate change. Additionally, the course addresses a range of environmental challenges including pollution, deforestation, biodiversity loss, and depletion of natural resources. Through engagement in case studies, collaborative discussions, and practical assignments, students acquire a profound comprehension of the complexities inherent in environmental issues, cultivating critical thinking abilities to propose solutions for fostering a sustainable future.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Fundamentals of Environmental Science & Climate change**	**12**

	1	Environment and Ecology	
	2	Biodiversity,Conservation biology	
	3	Environment science: Environmental Pollution,Environmental Impact Assessment (EIA)	
	4	Climate Change: Climate science (Greenhouse gas, climate modelling, climate variability)	
	5	Impacts of Climate Change-Mitigation and Adaptation	
II		**Global warming and Ozone Layer Depletion**	**12**
	6	Greenhouse gases: role of CO_2, role of CH_4, Global warming potential, CO_2 Emission	
	7	Human Emission of CO_2, Remedial measure to reduce global warming, Global cooling	
	8	Vienna convention on the protection of ozone layer − 1985, Montreal protocol, protection and maintenance of ozone layer	
	9	Indian efforts for ozone layer protection	
	10	El-Nino and its effects, La-Nina, impact of climate change on India	
III		**Impact of Climate Change and Global Warming**	**10**
	11	Impact of Climate Change in India: Pattern change of Rainfall, Drought, Effects on water resources, Sea Level Rise	
	12	Impacts on Agriculture,food security,Glacier,Health,	
	13	Impacts on energy security	
	14	Climate change & disaster in India	
	15	Urban flood, Cyclone, Forest fire	
IV		**Sustainable Development and Environmental Policy and Governance**	**6**
	16	Brundtland Commission	
	17	UN Environmental Agenda &role of U.N. agencies	
	18	Climate change convention-1992 &Earth Summit	
	19	Strategies for equitable Mitigation and Adaptation	
	20	Environmental World Environment Organization	
V		**FIELD SURVEY**	**5**
	21	To conduct a \survey and make a report regarding environmental issues of the locality in association with Block/Village Disaster Management Committees	

Basic Readings

1. William Cunningham, Mary Cunningham and Catherine O'Reilly, 2021, Principles of Environmental Science: Inquiry & Applications, McGraw Hill Education
2. Hussain, M, Ahmed. 2000. Principles of Environmental Economics, Routledge, London and New York
3. Anil Shishodia and Katar Singh, 2007, Environmental Economics: Theory and Applications, Sage Publications
4. Charles Kolstad, Intermediate Environmental Economics, Oxford University Press, 2nd edition
5. Rabindra N Bhattacharya (ed) 2002, Environmental Economics: An Indian Perspective, Oxford University Press.

Additional Readings

1. Jonathan M Harris, 2006, Environmental and Natural Resource Economics : A Contemporary approach, Houghton Mifflin
2. Joy A. Palmer, 1998, Environmental Education in 21st century, Routledge, London.
3. Ramprasad Sengupta, 2002, ECOLOGY AND ECONOMICS (OIP): An Approach To Sustainable Development, OUP India

4. Mahesh Rangarajan, 2009, ENVIRONMENTAL ISSUES IN INDIA: A READER, Pearson Education India
5. Shagoon Tabin, 2008, Global Warming: The Effect Of Ozone Depletion, APH Publishing
6. Climate Change – An Indian Perspective, Sushil Kumar Dash, Cambridge University Press India Pvt. Ltd, 2007
7. William Nordhaus, 2015, The Climate Casino: Risk, Uncertainty, and Economics for a Warming World, Yale University Press. ISBN: 978-0300212648
8. Encyclopedia of Global Warming and Climate Change By George Philander, SAGE Publications Inc; First edition, 2008.
9. Global Warming: The Complete Briefing By John Houghton, Cambridge University Press; 4th edition 2009.
10. Gupta Anil K, Sreeja S. Nair. 2011 Environmental Knowledge for Disaster Risk Management, NIDM, New Delhi
11. Kapur, Anu & others, 2005: Disasters in India Studies of grim reality, Rawat Publishers, Jaipur

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	understand the basic concepts of environmental and climate change	R, U	PSO-1
CO-2	examine the key issues of climate change and policy	R, U	PSO-2
CO-3	analyse the impacts of Climate change	E,An	PSO-4
CO-4	Evaluate importance of sustainable development and mitigation policies for climate change.	Ap, E	PSO-3,4
CO-5	Students should evaluate and create a report based on a survey	C,Ap	PSO-6

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Name of the Course: Credits: 4:0:0 (Lecture:Tutorial:Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	understand the basic concepts of environmental and climate change	PO-1, PSO-1	R, U	C,F	L	-

CO-2	Examine the key issues of climate change and policy framework	PO-2, PSO-2	R, U	P, M	L	-
CO-3	Analyse the impacts of Climate change	PO-3, PSO-4	An, E	P	L	-
CO-4	Evaluate importance of sustainable development and mitigation policies of climate change	PO-1, 2,7 PSO-3,4	Ap, E	P, M	L	-
CO-5	Evaluate and create a report based on a survey	PO-3 PSO-6	C,Ap	P,M	L	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PO 1	PO2	PO3	PO4	PO5	PO6	PO 7	PO 8
CO 1	3	-	-	-	-	-	3	-	-	-	-	-	-	-
CO 2	-	2		-	-	-	2	-	-	-	-	-	-	-
CO 3	-	-	-	3	-	-	1	-	3	-	-	-	-	-
CO 4	-	-	3	3	-	-	1	2	-	-	-	-	3	-
CO 5	-	-	2	-	-	3	1	-	3	-	-	-	-	-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓	-	-	✓
CO 2	✓	✓	-	✓
CO 3	✓	✓	-	✓
CO 4	-	-	-	✓
CO5	-	✓	✓	-

SEMESTER IV

Discipline Specific Core			
UK4DSCECO200	Macroeconomics -1	DSC	200-299
UK4DSCECO201	Mathematics for Economics-I	DSC	200-299
UK4DSCECO202	Economics of Migration	DSC	200-299
UK4DSCECO203	Monetary Economics	DSC	200-299
UK4DSCECO204	Economics of labour	DSC	200-299
Discipline-Specific Elective (can select one)			
UK4DSEECO200	Environmental Economics	DSE	200-299
UK4DSEECO201	Foundations of Data Science	DSE	200-299
Value Added Course			
UK4VACECO200	Public Policy, Value, and Ethics	VAC	200-299
UK4VACECO201	Women and Development	VAC	200-299
Skill Enhancement Course (can select one)			
UK4SECECO200	Securities Market Analysis	SEC	200-299
UK4SECECO201	Logistics and Transportation Economics	SEC	200-299

Discipline Specific Core

University of Kerala

Discipline	ECONOMICS
Course Code	UK4DSCECO200
Course Title	MACROECONOMICS-I

Type of Course	DSC				
Semester	IV				
Academic Level	200 – 299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	Understanding of basic issues in Macroeconomics				
Course Summary	This course is designed to give a systematic introduction to mainstream approaches to the study of macroeconomics. The course begins by familiarizing students with the various important macroeconomic variables and their measurement techniques. Then the course proceeds on a systematic overview of the important macroeconomic theories.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Title of the Module - National Income Accounting**	10
	1	National Income Accounts: GDP – National Income – Personal and Disposable Personal Income; National Income Accounting Identities.	
	2	Issues in National Income Accounting; Cost of Living Index: GDP deflator, WPI & CPI.	
II		**Title of the Module- Classical and Keynesian Macroeconomics**	10
	3	The Classical Revolution – Aggregate Demand - Aggregate Supply- Determination of Equilibrium Output and Employment. The Quantity theory of money – The Classical Theory of the Interest Rate.	
	4	The Simple Keynesian Model: The Components of Aggregate Demand. Determining Equilibrium Income. Fiscal Stabilization Policy. Exports and Imports in the Simple Keynesian Model. Multiplier – Static and Dynamic.	
III		**Title of the Module – Closed Economy in the short run**	15
	5	The goods market and derivation of the IS curve; real influences and Shift in IS schedule; the money market and derivation of the LM curve;	
		monetary influences and the shift in the LM curve; determination of equilibrium income and interest rates; the relative efficacy of fiscal and monetary policy under IS-LM framework; Critiques of IS-LM.	
IV		**Title of the Module-Theories of Consumption and Investment**	15
	6	Consumption: Keynesian Consumption Function, Kuznets Consumption Puzzle, Absolute Income Hypothesis, Relative Income Hypothesis,	
	7	Friedman's Permanent Income, Modigliani's Life Cycle Hypothesis, Hypothesis. Investment: The Neoclassical Theory of Investment; Residential Investment; The Accelerator Theory of Investment	
V		**Title of the Module-: Analytical Exercises**	10

		1. Estimate different measures of national income such as GDP, GNP, and GVA using the RBI database. DBIE (rbi.org.in) 2. Estimate trends and components of India's inflation from the RBI database.	

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the concept of National Income Accounting	U, An, Ap	PSO-1
CO-2	Interpret the mainstream approaches to the study of Macroeconomics	U, An, Ap	PSO-1,3
CO-3	Acquires the technical ability to illustrate and examine the simultaneous equilibrium in the goods and money market through IS LM tools.	An, Ap, Ev	PSO- 1, 2,3
CO 4	Analyse The Various Consumption Theories And Investment	Ap, An, Ev	PSO -1,3

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture:Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understand the concept of National Income Accounting	PO - 1 PSO-1	U, An	F, C, P	L	
CO-2	Interpret the mainstream approaches to the study of Macroeconomics	PO – 1, 2 PSO - 1, 3	U, An, Ap	C, P	L	

CO-3	Acquires the technical ability to illustrate and examine the simultaneous equilibrium in the goods and money market through IS LM tools.	PO -1,2 PSO - 1,2,3	An, Ap, Ev	C, P	L
CO 4	Analyse theories of consumption and investment	PO – 1,2 PSO 1, 3	Ap, An, Ev	P	L

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO4	PS O5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	1	3	-	-	-	3	-	2			
CO 2	3	-	3	-	-	-	3	2				
CO 3	3	2	3	-	-	-	3	2				
CO 4	3	-	3	-	-	-	3	2				

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4	✓	✓		

Essential Readings

1. Froyen R (2014) Macroeconomics: Theories and Policies (10th ed,), Pearson Education
2. Andrew B. Abel and Ben S. Bernanke, Macroeconomics, Pearson Education, Inc.,7th edition, 2011

Additional Reading List

1. Mankiw, N. G, Macroeconomics, Worth Publishers, 7th edition, 2010
2. Dornbusch, R., Fischer, S. and Startz, R., Macroeconomics, McGraw Hill, 12th edition, 2014
3. Diulio, Eugene(2011) Macroeconomic Theory, Shaum's Outline series. Tata McGraw Hill
4. Blanchard, O., Macroeconomics, Pearson Education, Inc., 5th edition, 2009.
5. Sheffrin, Steven M., Rational Expectations, Cambridge University Press, 2nd edition, 1996.
6. Abel, A. B. and Bernanke, B. S., Macroeconomics, Pearson Education, Inc., 7th edition, 2011.
7. Froyen, R.T. Macroeconomics, Pearson Education Asia, 2nd edition, 2005.
8. Chandana Ghosh and Ambar Ghosh, Macroeconomics, Second edition, EEE, 2021.

Discipline	ECONOMICS
Course Code	UK4DSCECO201
Course Title	MATHEMATICS FOR ECONOMICS - I
Type of Course	DSC
Semester	IV
Academic Level	200 - 299

Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	Students should have a fundamental understanding of algebraic operations, equations, and geometric concepts.				
Course Summary	This course provides a rigorous study of mathematical techniques essential for economic analysis. Topics include calculus, multivariable functions, and linear algebra, emphasizing their practical applications in economics, such as optimization and system solving. Through modules and real-world case studies, students develop problem-solving abilities, preparing them for success in diverse economic fields.				

University of Kerala

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Differential Calculus**	**15**
	1	Limits – Continuity- Slope of a Curvilinear Function	
	2	The Derivative – Rules of Differentiation: The Linear Function Rule, The Power Function Rule, The Rules for Sums and Differences, The Product Rule, The Quotient Rule, The Chain Rule, Implicit Function Rule- Higher Order Derivatives	
	3	Applications of Derivatives in Economics - Marginal Concepts: Marginal utility, Marginal Propensity to Consume, Marginal Propensity to Save, Marginal Product, Marginal Cost, Marginal Revenue, Marginal Rate of Substitution, Marginal Rate of Technical Substitution - Relationship among Total, Marginal and Average Concepts- Elasticities	
	4	Maxima and Minima of Economic Functions- Necessary and Sufficient Conditions.	
II		**Differential Calculus: Multivariable Functions**	**8**
	5	Multivariable Function - Partial Differentiation – Second Order Partial Differentiation- Total Differentiation	
	6	Maxima and Minima of Multivariable Functions	
III		**Integral Calculus and its Applications**	**10**
	8	Integration- Rules of Integration: Integration by Substitution; Integration by Parts	
	9	Definite Integral – Properties of Definite Integral	
	10	Application of Integral Calculus in Economics: Revenue and Cost Curves, Consumers' and Producers' Surplus, Area between Curves.	

IV		**Elements of Linear Algebra**	**15**
	11	Vectors (Concept only) – Matrix – Types - Matrix Operations: Addition, Subtraction, Scalar Multiplication and Multiplication. Laws of Matrix Algebra: Commutative, Associative and Distributive	
	12	Determinants - Rank of a Matrix	
	13	Minors, Cofactors, Adjoint and Inverse Matrices	
	14	Solving a System of Linear Equations – Matrix Inversion Technique-Cramer's Rule- Gauss Elimination Method	
V		**Mathematical Analysis in Economics**	**12**
		This module aims to apply mathematical concepts learned in the previous modules to analyze real-world economic scenarios. Students will engage in various activities (Case Studies Analysis/ Problem-solving Sessions/ Interactive Quizzes/ Group Seminarsetc.)designed to deepen their understanding of mathematical tools and their applications in economics**.**	

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Apply differential calculus to analyze economic functions and optimize outcomes.	U, Ap	PSO-1,3
CO-2	Apply multivariable calculus for analyzing complex economic functions and optimization in constrained scenarios.	R, U, Ap	PSO-1,2,3
CO-3	Evaluate economic quantities and interpret their significance using integral calculus.	U, Ap, An, E	PSO- 1,3.
CO-4	Evaluate different methods for solving systems of linear equations using matrices.	U, Ap, An, E	PSO- 1,3
CO-5	Analyse real-world economic issues using mathematical tools and communicate findings effectively.	An, E	PSO- 1,3.

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture:Tutorial:Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
1	Apply differential calculus to analyze economic functions and optimize outcomes	1,3	U, Ap	C, F	L	-
2	Apply multivariable calculus for analyzing complex economic functions and optimization in constrained scenarios.	1,2,3	R, U, Ap	P, M	L	-
3	Evaluate economic quantities and interpret their significance using integral calculus.	1,3	U, Ap, An, E	C, F	L	
4	Evaluate different methods for solving systems of linear equations using matrices.	1,3	U, Ap, An, E	C, P	L	
5	Analyze real-world economic issues using mathematical tools and communicate findings effectively.	1,3	An, E	C, F		

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs:

	PSO 1	PSO 2	PSO 3	PSO4	PSO5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	-	3	-	-	-	3	3				3
CO 2	2	1	2	-	-	-	2	2				2
CO 3	3	-	3	-	-	-	3	3				3

CO 4	2	-	2		-	-	2	2					2
CO 5	2	-	2	-	-	-	2	2					2

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4	✓			✓
CO 5		✓		

Mapping of COs to Assessment Rubrics:

Reference

- Chiang, A.C. & Wainwright, K. (2013). Fundamental Methods of Mathematical Economics. (4th ed.). McGraw Hill Education (India) Private Limited.
- Sydsaeter, K. & Hammond, P. (2016). Mathematics for Economic Analysis. New Delhi: Pearson Education Inc

- Dowling, E. T. (2012). Schaum's Outlines-Introduction to Mathematical Economics. (3rd ed.)

Recommended Readings

- Roser, M. (2003). Basic Mathematics for Economists. (2nd ed.). New York: Routledge
- Renshaw, G. (2011). Maths for Economics. (4th ed.). Oxford. Oxford University Press
- Hoy, Michael, John Livernois, Chris McKenna, Ray Rees and Thanasis Stengos Mathematics for Economics, Third Edition. PHI Learning
- Black. J. and J.F Bradley: Essential Mathematics for Economic, John Wiley and Sons, .New Delhi

- Allen, R.G.D Mathematical Analysis for Economists, AITBS Publishers, Delhi

University of Kerala

Discipline	ECONOMICS				
Course Code	UK4DSCECO202				
Course Title	ECONOMICS OF MIGRATION				
Type of Course	DSC				
Semester	IV				
Academic Level	200-299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	Basic Understanding of Economics				
Course Summary	The course thoroughly examines the economic drivers influencing migration trends worldwide. Drawing on a combination of theoretical models and real-world data, students explore the economic principles underpinning migration choices, which encompass factors like push-pull dynamics, labor market dynamics, and the accumulation of human capital. The curriculum further analyzes how migration impacts the economies of both origin aorigin and destination countries, scrutinizing its effects on , wages, productivity, and public finances. Through case studies and research endeavors, students gain valuable insights into the intricate interplay among economics, migration dynamics, and				

		broader societal outcomes, enriching their comprehension of this increasingly salient global phenomenon.	

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Introduction and Fundamentals of migration**	10
	1	Migration-types of migration	
	2	Gender and Migration	
	3	Inter-state Migration	
	4	Seasonal migration and commuters	
	5	Immigrant Incorporation	
	6	Determinants of migration and consequences of migration	
	7	Pre and Post-independence migration patterns in India	
II		**Migration Decision**	14
	8	Theories of migration -Micro and Macro theories	
	9	Raven Stein's Laws of Migration, Lee's theory	
	10	New Economics of Migration	
	11	Neoclassical macro theory -Dual labor macro theory	
	12	Problems of left behinds	
	13	Issues of Social networking and the Health of migrant	
	14	Push and Pull factors in migration	
	15	Compare and contrast economic and political explanations for migration	
III		**Impact of migration on destination countries**	12
	16	Impacts of migration -positive and negative	
	17	Labour market impact and benefits: Descriptive and Structural methods	
	18	The effects of immigration on wages and employment	
	19	the effects of immigration on the industry, structure and technology	
	20	Costs and benefits of migration -Economic, social and environmental	
	21	Methods of measuring migration: National growth rate method and Residual method (vital statistics method and survival ratio method)	
IV		**Understanding the challenges of Global migration And Mitigation policies**	12
	22	Causes and effects of global migration	
	23	Attitudes towards migration in destination countries, Origin countries	
	24	Brain Drain and Brain Gain, Income gains and remittances, social remittances	
	25	the effects of diasporas-Challenges of reverse migration in India	
	26	Trends and status of internal migration since 1991.	
V		**Migration Survey**	
	20	To conduct a local migration survey – Issues and Challenges	12
	21	To conduct Data analysis of migration (secondary data)	

Reading List

1. International Migration, Immobility and Development: Multidisciplinary Perspectives: by Grete Brochmann (Editor), Kristof Tamas (Editor), Thomas Faist (Editor), Tomas Hammar (Editor)

2. International Migration: A Very Short Introduction (Very Short Introductions) Khalid-Koser
3. Researching Internal Migration : by R. B. Bhagat (Author), S. Irudaya Rajan (Author)
4. MIGRATION THEORY: Talking across Disciplines :by Caroline B. Brettell (Editor), James F. Hollifield (Editor)
5. Rationalizing Migration Decisions: Labour Migrants in East and South-East Asia A-K-M-Ahsan-Ullah
6. Gender, Work and Migration: Agency in Gendered Labour Settings : Megha Amrith and Nina Sahraoui
7. Gibson, John, and David McKenzie (2011). Eight Questions about Brain drain. Journal of Economic Perspectives,25:107-128.
8. Yang, D.(2011).Migrant Remittances. Journal of Economic Perspectives, 25:129-152.

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the basic concepts of migration	R, U	PSO-1
CO-2	Examine the theoretical aspects of migration	R, U	PSO-2 PSO-3
CO-3	Evaluate the cost and effectiveness of migration	E,An	PSO-2
CO-4	Examine the general trends and issues of global migration	E,An	PSO-1,2
CO-5	Evaluate and create a report about the local migration survey – Issues and Challenges & Data analysis of migration with secondary data	C,Ap	PSO-3,6

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create
Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)

CO-1	Understand the basic concepts of migration	PO-1, PSO-1	R, U	C, F	L	-
CO-2	Examine the theoretical aspects of migration	PO-2, PSO-1	R, U	P, M	L	-
CO-3	Evaluate the cost and effectiveness of migration	PO-7 PSO-1,2	An, E	P	L	-
CO-4	Examine the general trends and issues of global migration	PO-1,2 PSO-1,2	E, An	P, M	L	-
CO-5	Evaluate and create a report about the local migration survey – Issues and Challenges & Data analysis of migration with secondary data	PO-8 PSO-3 PSO-6	C, Ap	P, M	L	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs:

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PO 1	PO2	PO 3	PO4	PO 5	PO 6	PO 7	PO 8
CO 1	3	-	-	-	-	-	3	-	-	-	-	-	-	-
CO 2	3	-	-	-	-	-	-	3	-	-	-	-	-	-
CO 3	1	3	-	-	-	-	-	-	-	-	-	-	3	-
CO 4	2	3	-	-	-	-	1	2	-	-	-	-	-	-
CO 5	-	-	1	-	-	3		-	-	-	-	-	-	2

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓	-	-	✓
CO 2	✓	✓	-	✓
CO 3	✓	✓	-	✓
CO 4	-	-	-	✓
CO5	-	✓	✓	-

University of Kerala

Discipline	ECONOMICS				
Course Code	UK4DSCECO203				
Course Title	MONETARY ECONOMICS				
Type of Course	DSC				
Semester	IV				
Academic Level	200 - 299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	Basic knowledge in Macro Economics				
Course Summary	The undergraduate course in "Monetary Economics" offers a comprehensive investigation into the principles, theories, and strategies guiding the function of money within the economy. Utilizing a blend of theoretical frameworks and real-world scenarios, students explore subjects like the creation of money, tools of monetary policy, operations of central banks, and the mechanisms through which monetary policy influences economic outcomes.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Introduction to Monetary Economics**	12
	1	Nature and Functions of Money	
	2	Demand and Supply of Money	
	3	Theories of Value of Money; Cash Transaction Approach, Cash Balance Approach, Friedman's Restatement of Quantity Theory	
	4	Inflation; Meaning, Types, Causes and Effects, Control Measures	
II		**Theories of Monetary Economics**	10
	5	Demand for Money; The Classical Approach, The Keynesian, Post Keynesian Developments	
	6	Baumol's Approach to Transaction Demand for Money	
	7	Tobin's Theory of Speculative Demand for Money	
	8	Supply of Money: Financial Intermediaries and the supply of Money	
	9	The Nature and Functions of Financial Intermediaries	
III		**Money and Banking**	14
	10	Endogenous and Exogenous Money Supply	
	11	High Powered Money	
	12	Measures of Money Supply with special emphasis on Indian Economy	
	13	Commercial Banking; Functions of Commercial Banks, Balance Sheet of a Commercial Bank	
	14	New Age Banking; Internet Banking, E-Banking, Mobile Banking	
	15	Digital Banking Instruments; E-Wallet, UPI Payment	
	16	Central Bank; Meaning, Role, and Functions	
	17	Monetary Policy of Central Banks; Objectives and Instruments	
IV		**International Finance**	12
	18	World Bank; aims and Functions; Structure, Policies, Development Assistance, Financing Investment	
	19	Asian Development Bank and Project Financing	
	20	Bank for International Settlements (BIS); Role, Functions.	
	21	Role of International financial institutions for financial inclusion	
V		**Activity**	12
	22	**Guidelines:** **Cross-country analysis of financial inclusion using any authentic international database**	

Reading List

1. Hajela, T.N (2009): Money and Banking: Theory with Indian Banking, Ane Books Pvt Ltd
2. Bhatia H L, Pubic Finance; Sage Publications, 2008
3. Bhole, L.M (2004): Financial Institutions and Markets: Structure, Growth and Innovations, McGraw Hill Education

4. Turban, Efraim, David King et.al (2002): Electronic Commerce: A Managerial Perspective, Pearson Education Asia, Delhi.

5. Kalakota, Ravi and Andrew B. Whinston (2009): Frontiers of Electronic Commerce, Pearson Education India

6. Rayport, Jeffrey F and Jaworksi. Bernard J (2003): Introduction to E-Commerce, Tata McGrawHill

7. Michael W. Brandi (2019): Money, Banking, Financial Markets and Institutions, Cengage India Pvt Ltd, New Delhi

8. Khan, M. Y. (2019). Indian Financial System, 11th ed. McGraw Hill, New Delhi.

9. Shapiro, Eli, et al. (1968): Money and Banking, New York, Holt, Rinehart and Winston.

10. M.L. Vaish (1978): Money Banking International Trade, WILEY EASTER Publication.

11. M. L. Seth (1984): Money Banking, International Trade and Public Finance, Lakshmi Narain Agarwal publication.

12. Ishwar C. Dhingra (2019): The Indian Economy Environment and Policy, S. Chand and Sons.

13. Noushad Chengodan (2017): Indian and Kerala Economy: Key Concepts Techniques & Latest Trends, Saradhi Books.

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the foundations of monetary economics	R, U	PSO-1
CO-2	Critically examine the theories of monetary economics	U, An, E	PSO-1,4
CO-3	Understand the current monetary policy and analyse monetary instruments	R, U, An	PSO-3
CO-4	Review the various trends and functions of monetary and financial institutions	U, An, E	PSO-2,4

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create
Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/ PSO	Cognitive Level	Knowledge Category	Lecture (L)/ Tutorial (T)	Practical (P)
CO-1	Understand the foundations of monetary economics	PO-1, PSO-1	R, U	F, C	L	-

CO-2	Critically examine the theories of monetary economics	PO-1, PSO-1, PSO-4	U, An, E	C, P	L	-
CO-3	Understand the current monetary policy and analyse monetary instruments	PO-1, PO-2, PSO-3	R, U, An	C, P	L	-
CO-4	Review the various trends and functions of monetary and financial institutions	PO-2, PO-5, PSO-2, PSO-4	U, An, E	F, C	L	-

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs:

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	-	-	-	-	-	3	-	-	-	-	-
CO 2	3	-	-	2	-	-	3	-	-	-	-	-
CO 3	-	-	3	-	-	-	3	3	-	-	-	-
CO 4	-	3	-	2	-	-	-	2	-	-	2	-
CO 5	-	-	-	-	-	-	-	-	-	-	-	-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics:

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓	-	-	✓
CO 2	✓	✓		✓
CO 3	✓	✓	✓	✓
CO 4	✓	✓		✓
CO 5	-	✓	✓	-

University of Kerala

Discipline	ECONOMICS				
Course Code	UK4DSCECO204				
Course Title	Economics of Labour				
Type of Course	DSC				
Semester	IV				
Academic Level	200 - 299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	Basic understanding of Economics.				
Course Summary	The course covers fundamental concepts and theories related to the labor market, employment, and wages.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Introduction**	10
	1	Nature and scope of labor economics.	
	2	Features of labor markets in emerging countries- Measurements of Employment LFPR, WFPR, and unemployment types, measurements.	
	3	Theories of labor markets.	
	4	Issues and Trends in Labour Market.	
II		**Demand and Supply of labour**	15
	5	Demand for labor- Hiring decision of the firm - relation to size and pattern of investment, choice of technology	
	6	Supply of labor- decision at the individual and household level-, relation to the growth of labor force**.** Labour market elasticity.	
	7	Labour market Equilibrium	
III		**Determination of Wages and the Indian labour market.**	15
	9	Theories of wage determination-Classical, Neo-Classical, and bargaining theories.	
	10	Minimum Wage, Living wage, and fair wage. Role of Trade Unions. Human capital theory.	
	11	Wage differences in rural, urban formal, and informal sectors.	
	12	Gender pay gap, Occupational, segregation, labour market discrimination-gender, race, ethnicity. challenges to collective bargaining.	
	13	Indian labor market, labor market reforms issues in labor market.	
IV		**Labour, globalization, and the New Economy.**	12
	18	Labor mobility, internal and international labor, Migration. Outsourcing, offshoring, and precarious work. Impact of automation, Contractualisation of labor and Gig work.	
	19	Factors affecting skills and labor market dynamics in the new economy – technology-oriented skills- Flexible and adaptive skill sets- Remote work skills-Global skills and Cultural Competency.	
	20	Importance of lifelong learning-Entrepreneurial Skills-Automation and reskilling-inclusive hiring practices.	
V		**Case Studies**	8
	23	Survey to understand the working conditions of informal sector workers, gig workers and women workers.	
	24	Datasets of PLFS for analyzing Indian labour market- https://www.mospi.gov.in/Periodic-Labour-Surveys	
	25	ILO data bases can be used - https://www.ilo.org/global/statistics-and-databases/lang--en/index.htm	

Reading List

1. Barua, R. (2017). Labour, employment and economic growth in India. Indian Growth and Development Review, 10(1), 62-64.

2. Borjas, George J. (2016). Labor Economics. McGraw-Hill/Irwin, Boston.

3. Breman, J. (2019). Capitalism, inequality and labour in India. Cambridge University Press.

4. Campbell R., McConnell, et al. (2017). Contemporary Labor Economics. McGraw-Hill Education, New York

5. Lester, R.A. (1964), Economics of Labour, (2nd Edition). Macmillan, New York.

6. Stiglitz, J. E. (2017). Globalization and Its Discontents. Penguin India.

7.Lester R A (1964), Economics of Labour 2nd Edition, Macmillan ,Newyork.

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the basic principles of the Labour and Labour market	R, U	PSO-1
CO-2	Analyse labour market functioning and wage determination	An	PSO-2,3
CO-3	Critically analyze the impact of globalization and the emergence of the new economy on labour	An, E	PSO-2,3
CO-4	Critically analyze labour market discrimination and challenges.	An, E	PSO-2,4,6

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture:Tutorial:Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understand the basic principles of the Labour and Labour market	PO-1 PSO-1	R, U	F, C	L	
CO-2	Analyse labour market functioning and wage determination	PO-1,2 PSO-2,3	An	P	L	

| CO-3 | Critically analyze the impact of globalization and the emergence of the new economy on labour | PO-2,3 PSO-2,3 | An ,E | P,M | L | |
| CO-4 | Critically analyze labour market discrimination and challenges. | PO-2,3,8 PSO-2,4,6 | An, E | P,M | L | |

F-Factual, C- Conceptual, P-Procedural, M-Met cognitive
Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO4	PSO5	PSO 6	PO 1	PO 2	PO 3	PO4	PO 5	PO6	PO -7	PO-8
CO 1	3	-	-	-	-	-	3							
CO 2		3	3	-	-	-	3	3						
CO 3	-	2	2	-	-	-		2	2					
CO 4	-	2		2	-	3		2	2					2
CO 5	-		-	-	-	-								
CO 6	-	-	-		-	-								

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low

2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4	✓	✓		✓
CO 5				
CO 6				

Discipline Specific Elective

University of Kerala

Discipline	ECONOMICS				
Course Code	UK4DSEECO200				
Course Title	Environmental Economics				
Type of Course	DSE				
Semester	IV				
Academic Level	200-299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week

	4	4 hours	-	-	4
Pre-requisites	Basic understanding of Economics.				
Course Summary	understand the basic concepts of Environmental Economics and Climate change issues and analyze their impact. Evaluate the importance of sustainable development and mitigation policies for climate change.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Fundamentals of Environmental Economics**	10
	1	Environmental Economics: Definition, Nature and Scope	
	2	Interlinkages between Environment, Ecology and Economy	
	3	Law of Entropy, Material Balance Theory, Limits to Growth	
	4	Environment Development Trade off	
	5	Environment Kuznets Curve	
II		**Environmental Externalities**	12
	5	Environmental Externalities	
	6	Corrective Measures**:** Quantity Based Instruments, Market-based Instruments, and Non-Market Instruments, Mixed instruments	
	7	Tragedy of Commons, Coase Theorem	
	8	Civil Society and Collective Action	
	9	Environmental Policies and Legislation in India	
III		**Environmental Valuation**	15
	10	Environmental Valuation, Use Values, Non-use Values, Option Values	
	11	Direct Methods of Valuation- Contingent Valuation Methods	
	12	Indirect Valuation Methods- Revealed Preference Methods, Cost Based and Other Methods	
	13	Cost Benefit Analysis	
	14	Environmental Impact Assessment	
IV		**Climate Change and Sustainable Development**	15
	16	Climate Change: Concept, Causes and Impact	
	17	Climate Change: Agreements and Institutions	
	18	Sustainable Development: Concept, Components, Indicators and Measures	
	19	Sustainable development goals	
V		**FIELD SURVEY**	
	20	**T**o conduct a recent survey and make a report regarding environmental issues of the locality in association with Block/Village Disaster Management Committees	**8**

Basic Readings

1. William Cunningham, Mary Cunningham and Catherine O'Reilly, 2021, Principles of Environmental Science: Inquiry & Applications, McGraw Hill Education

2. Hussain, M, Ahmed. 2000. Principles of Environmental Economics, Routledge, London and New York

3. Anil Shishodia and Katar Singh, 2007, Environmental Economics: Theory and Applications, Sage Publications
4. Charles Kolstad, Intermediate Environmental Economics, Oxford University Press, 2nd edition
5. Rabindra N Bhattacharya (ed) 2002, Environmental Economics: An Indian Perspective, Oxford University Press.

Additional Readings

1. Jonathan M Harris, 2006, Environmental and Natural Resource Economics : A Contemporary approach, Houghton Mifflin
2. Joy A. Palmer, 1998, Environmental Education in 21st century, Routledge, London.
3. Ramprasad Sengupta, 2002, ECOLOGY AND ECONOMICS (OIP): An Approach To Sustainable Development, OUP India
4. Mahesh Rangarajan, 2009, ENVIRONMENTAL ISSUES IN INDIA: A READER, Pearson Education India
5. Shagoon Tabin, 2008, Global Warming: The Effect Of Ozone Depletion, APH Publishing
6. Climate Change – An Indian Perspective, Sushil Kumar Dash, Cambridge University Press India Pvt. Ltd, 2007
7. William Nordhaus, 2015, The Climate Casino: Risk, Uncertainty, and Economics for a Warming World, Yale University Press. ISBN: 978-0300212648
8. Encyclopedia of Global Warming and Climate Change By George Philander, SAGE Publications Inc; First edition, 2008.
9. Global Warming: The Complete Briefing By John Houghton, Cambridge University Press; 4th edition 2009.
10. Gupta Anil K, Sreeja S. Nair. 2011 Environmental Knowledge for Disaster Risk Management, NIDM, New Delhi
11. Kapur, Anu & others, 2005: Disasters in India Studies of grim reality, Rawat Publishers, Jaipur

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Examine the interlink ages between environment, ecology, and economy	R, U	PSO-1
CO-2	Describe the concept of externalities and its corrective measures	U, An	PSO-2

CO-3	Understand the methods of environmental valuation	An, Ap	PSO-4
CO-4	Evaluate the relevance of sustainable development in the context of climate change	Ap, E	PSO-3,4
CO-5	Students should evaluate and create a report based on a survey	C,Ap	PSO-6

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create
Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/ Tutorial (T)	Practical (P)
CO-1	understand the basic concepts of Environment and climate change	PO-1, PSO-1	R, U	C,F	L	-
CO-2	examine the key issues of climate change and policy framework	PO-2, PSO-2	R, U	P, M	L	-
CO-3	analyse the impacts of Climate change	PO-3, PSO-4	An, E	P	L	-
CO-4	evaluate importance of sustainable development and mitigation policies of climate change.	PO-1,2,7 PSO-3,4	Ap, E	P, M	L	-
CO-5	evalute and create a report based on a survey	PO-3 PSO-6	C,Ap	P,M	L	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

Correlation Levels:

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PS O6	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO 1	3	-	-	-	-	-	3	-	-	-	-	-	-	-
CO 2	-	2		-	-	-	2	-	-	-	-	-	-	-
CO 3	-	-	-	3	-	-	1	-	3	-	-	-	-	-
CO 4	-	-	3	3	-	-	1	2	-	-	-	-	3	-
CO 5	-	-	2	-	-	3	1	-	3	-	-	-	-	-

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:
- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓	-	-	✓
CO 2	✓	✓	-	✓
CO 3	✓	✓	-	✓
CO 4	-	-	-	✓
CO5	-	✓	✓	✓

University of Kerala

Detailed Syllabus:

Discipline	ECONOMICS				
Course Code	UK4DSEECO201				
Course Title	FOUNDATIONS OF DATA SCIENCE				
Type of Course	DSE				
Semester	IV				
Academic Level	300-399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-		4
Pre-requisites	1. Knowledge of basic statistical and econometrics concepts for application				
Course Summary	Expected to explore the collection, manipulation, storage, retrieval, and computational analysis of data in various forms so that students emerge with a unique blend of skills, ready to tackle real-world challenges				

Module	Unit	Content	Hrs

I		Introduction to Data Science	10
	1	Overview of data science	
	2	Importance of data-driven decision making in economics	
	3	Big Data and Data Science	
	4	Datafication - Current landscape of perspectives - Skill sets needed	
II		Data Processing techniques- Software- Python	15
	5	Data Science Methodology	
	6	Data pre-processing: Data cleaning - data integration - Data Reduction Data Transformation and Data Discretization.	
	7	Evaluation of classification methods – Confusion matrix, Students T-tests and ROC curves	
	8	Exploratory Data Analysis - Basic tools (plots, graphs, and summary statistics) of EDA	
III		Machine Learning for Economic Prediction	15
	9	Basic Machine Learning Algorithms- Association Rule Mining - Linear Regression- Logistic Regression	
	10	Classifiers - k-Nearest Neighbours (k-NN), k-means -Decision tree - Naive Bayes	
	11	Ensemble Methods - Random Forest	
	12	Feature Generation and Feature Selection - Feature Selection algorithms – Filters, Wrappers, Decision Trees	
IV		Clustering and data visualization	10
	13	Basic concepts and Partitioning methods	
	14	Clustering Methods-hierarchical- agglomerative clustering	
	15	Data Visualization: Basic principles, ideas and tools for data visualization	
V		Case Studies and Projects- Software Python	10
	16	Practical applications of data science techniques in economics	
	17	Hands-on projects using real-world economic datasets	
	18	Presentation and discussion of project findings	

Recommended Texts:

1. "Data Science for Economics" by Edward L. Melnick
2. "Python for Data Analysis" by Wes McKinney
3. "Introduction to Econometrics" by James H. Stock and Mark W. Watson

Additional Resources:

1. Online tutorials and documentation for Python/R programming languages
2. Online platforms for accessing economic datasets (e.g., World Bank, Federal Reserve Economic Data).

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understanding basic ideas in data science	U	PSO-1,2

CO-2	Applying data preprocessing and processing techniques for analysis	Ap, An	PSO-1,3, 5
CO-3	Understand and explore machine learning concepts and algorithms and apply clustering and data visualization	Ap, An	PSO-1,3
CO-4	Make judgments and create models with the help of real-world economic data sets	E, C	PSO-1,3,5

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
1	Understanding and applying data collection, cleaning and preprocessing techniques	PO-1,3,7 PSO- 1,2	U	C, P		
2	Examining and evaluating data integration and transformation with the help of EDA	PO-2,3,6 PSO- 1,3,5	Ap, An	C, P		
3	Understand and explore machine learning concepts and algorithms	PO- 1,3,7 PSO- 1,3	Ap, An	C, P		
4	Make judgments and create models with the help of real-world economic data sets	PO- 2,3,7 PSO- 1,3,5	E, C	P, M		

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs:

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO 1	2	1	-	-	-	-	2		1				3	
CO 2	2		3	-	1	-		3	2			1		
CO 3	3	-	2	-	-	-	2		1				3	
CO 4	1	-	3		-2	-		2	1				3	

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Correlation Levels:

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics:

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations

CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4			✓	✓

Value Added Course

University of Kerala

Discipline	ECONOMICS				
Course Code	UK4VACECO200				
Course Title	Public Policy, Value, and Ethics.				
Type of Course	VAC				
Semester	IV				
Academic Level	200 - 299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	3	3 hours	-	-	3
Pre-requisites	None				
Course Summary	This course explores the intersection of public policy, values, and ethics. It examines the ethical dimensions of public policy formulation, implementation, and evaluation. The course aims to develop student's abilities to think reflectively and argue persuasively about the moral and ethical dimensions of politics, public policies, and careers in public affairs.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Introduction**	10
	1	Public policy and governance.	
	2	Principles of good governance- accountability, transparency, integrity, and public good.	
	3	Good Governance, Values and Ethics.	
II		**Distributive Justice**	10
	4	Distributive justice in tax, property, and welfare	
	5	Role of economy and government in providing distributive justice	
	6	Rawlsian, Nozick's, and Sen's theory of justice (Concepts only).	
III		**Economics and Public Policy**	12
	7	The economic foundations of Command Economy, Free market economy, Mixed market economies.	
	8	Neoclassical Economics and its Ethical and Value Foundation.	
	9	The role of public policymaking in attaining the common good, inclusive growth, Gender equality, and sustainability.	
IV		**Globalization and Governance**	8
	10	The need for value-based international policy-making, and international cooperation.	
	11	The role of inter-governmental organizations, regional blocks, and NGO's.	
	12	Challenges of value-based policy making in a globalized economy.	
V		**Activity**	5
		Assess the role of NGOs, women empowerment through public policy	

Reading List

1. A Guide to Ethics and Public Policy: Finding Our Way (2012), D. Don Welch, Routledge.
2. Political Ethics and Public Office (1990), Dennis Thompson, Harvard University Press.

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understanding public policy frameworks	U	PSO-1,2
CO-2	critically analyze ethical dilemmas in public policy, considering diverse stakeholder perspectives, and propose ethically sound solutions	Ap, E	PSO-2,3
CO-3	critical thinking and debate concerning the ethical implications of various policy choices	E, C	PSO-4,6
CO-4	Engage in civic activities and enhance their role as informed citizens in shaping public policies.	C	PSO-4.6

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understanding public policy frameworks	PO-1 PSO-1,2	U	F, C	L	
CO-2	Critically analyze ethical dilemmas in public policy, considering diverse stakeholder perspectives, and propose ethically sound solutions	PO-2,3 PSO-2,3	Ap, E	P, M	L	
CO-3	Critical thinking and debate concerning the ethical implications of various policy choices	PO-4,6 PSO-4,6	E, C	P, M	L	
CO-4	Engage in civic activities and enhance their role as informed citizens in shaping public policies.	PO-4,6 PSO-4,6	C	P, M	L	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs:

	PSO 1	PSO 2	PSO 3	PSO4	PSO5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6

CO 1	3	3	-	-	-	-	3						
CO 2		3	3	-	-	-		3	3				
CO 3	-	-		3	3	-					3		3
CO 4	-	-		3	-	3					3		3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics:

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations

CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4		✓		✓

University of Kerala

Discipline	ECONOMICS				
Course Code	UK4VACECO201				
Course Title	Women and Development				
Type of Course	VAC				
Semester	IV				
Academic Level	200 - 299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	3	3 hours	-	-	3
Pre-requisites	None				
Course Summary	The course provides a critical and ethical perspective and knowledge of how gender matters in development.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Introduction**	10
	1	Women in the household, patriarchal and matriarchal society.	
	2	Private and participation of women in pre-industrial and industrial societies.	
	3	Women in formal and informal labour.	
II		**Gender in policies**	8
	4	Involving gender into development policies - Gender planning techniques, Gender-sensitive governance, and Gender Budgeting.	
III		**Women in Society**	12
	5	Factors affecting decision-making by women – Property rights, access to and control over economic resources & assets – Power of decision-making at household and community level.	
	6	Demographic imbalance of female population: Age structure, Mortality rate, and Sex ratio.	
IV		**Women and Work**	10
	7	Status of women and its Effect on work-participation rate, Income Level, health, and Education in developing countries and India	
	8	Factors affecting female entry in the labor market.	
	9	Wage differentials in agriculture, non-agriculture rural activities, informal sector, cottage and small scale industries, organized industry, and services sector.	
V		**Field survey**	5
	10	To conduct a survey and make a report regarding the different issues faced by women in the workplace, wage differences, and other issues.	

Reading List

1. Babcok, Linda and Sara Laschever (2003), Women Don't Ask: Negotiations and Gender Divide. Princeton University Press: Princeton Benaria,
2. Lourdes (2003) Gender Development and Globalisation: Economics as if All People Mattered, Routledge: New York Blau,
3. Francine D, Anne E Winkler and Marianne A Ferber (2009) The Economics of Women, Men and Work, Prentice Hall
4. Boserup, Ester (2007), Women's Role in Economic Development, George Allen and Unwin, London.
5. Ghosh Jayati (2009) Never Done and Poorly Pad: Women's Work in Globalizing India, New Delhi, Women Unlimited, 2009.
6. Hoffman, Saul D and Susan Averett (2010) Women and the Economy: Family, Work and Pay, Prentice
7. Hall Kabeer, Naila (1995) Reversed Realities: Gender Hierarchies in Development Thought, Verso: London 1995

Course Outcomes

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand various issues in the analysis of gender and development.	R, U	PSO-1
CO-2	Analyze the role of women in Household, Production, and Reproduction.	Ap,An	PSO-2 PSO-3
CO-3	Evaluate the linkages between women and Society.	E	PSO-3 PSO-6
CO-4	Analyze the challenges of providing inclusive women's development.	An, E	PSO-3 PSO-4

Name of the Course: Credits: 4:0:0 (Lecture:Tutorial:Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understand various issues in the analysis of gender and development.	PO-1 PSO-1	R, U	F, C	L	
CO-2	Analyze the role of women in Household, Production, and Reproduction	PO-1 PO-8 PSO-2 PSO-3	Ap,An	P	L	

CO-3	Evaluate the linkages between women and Society.	PO-3 PO-8 PSO-3 PSO-6	E		P,M	L	
CO-4	Analyze the challenges of providing inclusive women's development.	PO-3 PO-8 PSO-3 PSO-4	An, E		P,M	L	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO-7	PO-8
CO 1	2	-	-	-	-	-	2							
CO 2		3	3	-	-	-	3		2					3
CO 3	-	-	2	-	-	2-								
CO 4	-	-	2	3	-	-	3						3	

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4	✓	✓		✓

Skill Enhancement Course

University of Kerala

Discipline	ECONOMICS
Course Code	UK4SECECO200
Course Title	SECURITIES MARKET ANALYSIS
Type of Course	SEC
Semester	IV
Academic Level	200 - 299

Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	3	**3 hours**	**-**	**-**	**3**
Pre-requisites	Foundations in Macro Economics				
Course Summary	This course is designed to provide a comprehensive study of the significance of the Securities Market in the modern financial system. It includes a discussion of the efficient securities markets, covers bond pricing and introduces the top-down approach to investment decisions.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**FINANCIAL MARKET AND THE ECONOMY**	**6**
	1	Financial Market; Meaning, Types, Function	
	2	Financial Institutions and Economic Development	
	3	Role of Financial intermediaries; payments mechanism, maturity transformation, risk transformation	
II		**APPROACHES TO SECURITY MARKET ANALYSIS**	**8**
	4	Fundamentals Analysis; Stages/ Steps, Use of Financial Ratio- Economic Analysis; Inductive and Deductive Method- Industrial Analysis, Company Analysis- Technical Analysis; Chart Pattern and Technical Indicators	
	5	Efficient Market Theory	
III		**SECONDARY MARKET AND STOCK EXCHANGES IN INDIA**	**14**
	6	Classification of Stock Markets and Securities	
	7	Ordinary shares, valuation of ordinary shares (common stocks)- Preference shares, valuation of preferred stock (primary market) - Private equity	
	8	Initial Public Offerings; Secondary Equity Market and Stock Exchanges in India	
	9	Stock Market Indices and Stock Price Quotations- Types of Investors in the Stock Market- Stock Market Liquidity	
	10	Market Microstructure in Indian Stock Market- Listing of Securities-Security Groupings; Trading System- Margin Trading- Short Selling-Settlement Cycle- Drawbacks of Indian Stock Markets	
	11	Major Policy Developments in the Indian Capital Market	
IV		**PORTFOLIO INVESTMENT AND MUTUAL FUNDS**	**8**
	12	Portfolio Investment; Stock, Dividend, Bond, Types of Bonds, Risk & Investment, Portfolio Investment and Risks	
	13	Mutual Fund; Concept, NAV, Mutual Fund Selection, Prospects, Risk & Uncertainty	
V		**INTERNSHIP/TRAINING/CERTIFICATION**	**9**
	14	Guideline: Internship or training with any registered broking firm for not less than 15 hours to analyze online trading or trade related to derivatives	

		or mutual funds and submit a report not exceeding 10 pages for assessment. In lieu students may complete any basic module of NiSM and submit the course completion certificate as proof	

Reading list

1. Thomas Piketty (2014). Capital in the Twenty-First Century, Harvard Business School Press India Limited.
2. John J. Murphy (2020), Technical Analysis of the Financial Markets: A Comprehensive Guide to Trading Methods and Applications, Prentice Hall Press.
3. Financial Ratios e-book, Corporate Finance Institute,
4. https://corporatefinanceinstitute.com/assets/CFI-Financial-Ratios-Cheat-Sheet-eBook.pdf
5. The First Step Guide to Technical Analysis, NTAA, Toshiki Aoki Pubn.,
6. https://ifta.org/wp-content/uploads/2018/05/technicalhandbook_2018_NTAA.pdf
7. Benjamin Jonathan Clarke, Tomas Jandik, Gershon Mandelker (2000), The Efficient Markets Hypothesis
8. Graham and David Dodd, (2008 Reprint), Security Analysis, 7th Edn, Mc Graw Hill Education.
9. Keith Pibeam (2005), Finance and Financial Markets, Tata Mc Graw Hill Co Ltd New Delhi
10. Mishkin, Frederick S, and Stanley G Eakins (2018), Financial Markets and Institutions, 9th ed.,
11. Global Edition, Pearson Ed.
12. Donald E Fischer & Ronald J Jordan, (1995), Security Analysis and Portfolio management,
13. Pearson Education, Inc
14. Bhole, LM and Jitendra Mahakud (2018), Financial Institutions and Markets: Structure,
15. Growth and Innovation, 6th ed., McGraw-Hill.
16. M.Y. Khan (2019), Indian Financial System, 11th Edn, Mc Graw Hill Education.
17. Kumar, SSS, (2007), Financial Derivatives 5th ed, PHI Learning Private Ltd
18. Robert W Kolb, James A Overdabl, Futures, Options and Swaps,5th ed., Wiley – Blackwell
19. Michael Ferrari, Frank J Fabozzi, Franco Modigliani (2001), Foundations of Financial
20. Markets and Institutions, 4th ed, Pearson College Div.
21. Sasidharan K., Alex K Mathews (2008), Financial Institutions and Services, Mc Graw Hill
22. Education

Certification

https://www.nism.ac.in/securities-markets-primer/

https://www.nism.ac.in/financial-planning-basic/

https://www.nism.ac.in/mutual-funds-basic/

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand basic functions of the financial market and its significance in economic development.	U	PSO-1,4
CO-2	Evaluate the principles of security market analysis.	E, U	PSO-1

CO-3	Understand the types of market segments in the stock markets, securities traded and valuation techniques of stocks	U, An	PSO-1,5
CO-4	Analyse the role of portfolio investments in financial planning.	An, E	PSO-3
CO-5	Grasp and experience the functioning of stock exchanges and mutual fund transactions.	C, Ap	PSO-4

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Name of the Course: Credits: 3:0:0 (Lecture:Tutorial:Practical)

CO No.	CO	PO/ PSO	Cognitive Level	Knowledge Category	Lecture (L)/ Tutorial (T)	Practical (P)
CO-1	Understand basic functions of the financial market and its significance in economic development	PO-1 PSO-1,4	U	F	L	-
CO-2	Evaluate the principles of security market analysis	PO-3 PSO-1	E, U	F	L	-
CO-3	Understand the fundamentals of stock market trading in India	PO-1, PO-6 PSO-1,5	U, An	F, P	L	-
CO-4	Analyse the role of portfolio investments in financial planning	PO-4 PSO-3	An, E	P	L	-
CO-5	Grasp and experience the functioning of stock exchanges and mutual fund transactions	PO-1, 4 PSO-4	Ap, C	P	L	-

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs:

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO 1	1	-	-	2	-	-	1	-	-	-	-	-	-	-
CO 2	2	-	-	-	-	-	-	-	2	-	-	-	-	-
CO 3	2	-	-	-	3	-	1	-	-	-	-	2	-	-
CO 4	-	-	2	-	-	-	-	-	-	2	-	-	-	-
CO 5	-	-	-	3	-	-	2	-	-	2	-	-	-	-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:
- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓	✓	-	✓
CO 2	-	✓	-	✓
CO 3	✓	✓	-	✓
CO 4	✓	✓	-	✓
CO 5	-	✓	✓	-

University Of Kerala

Discipline	ECONOMICS				
Course Code	UK4SECECO201				
Course Title	Logistics and Transportation Economics				
Type of Course	SEC				
Semester	IV				
Academic Level	200 - 299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	3	3 hours	-	-	3
Pre-requisites	Basic Knowledge on economics				

		Course Summary	This course helps to enhance skills in fundamental logistics and supply chain management, including transport demand, private and social transport costs, market structures, competition, and pricing strategies in transportation markets.

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Concepts of Logistics and Supply Chain**	10
	1	Importance of Logistics in global Sourcing, Production and consumption	
	2	Dimension of Logistics: Macro and Micro aspects	
	3	Key components of logistics: transportation, warehousing, inventory management, and information systems.	
	4	Supply chain contours: Backward and forward linkages- Supply chain efficiency	
II		**Logistics and Procurement**	10
	5	Logistics as a Support function of Procurement and Vendor Facilitation	
	6	Logistics as interface function of Demand Forecasting, Global procurement, Tracking inward shipments and Storage Planning	
	7	Logistics as an enabler of Just-in-Time (JIT), Kanban (A scheduling system for lean inventory), Vendor Managed Inventory (VMI) for Vendors and the firm.	
	8	Measuring Performance, Comparing Performance, Analysing a Supply Chain, Improving Performance	
III		**Transportation Economics**	10
	9	The subject matter of transportation economics - economic characteristics of transport	
	10	Transportation Demand - Divisible Goods Case, Discrete Good Case	
	11	Firm Production and Cost in Transportation - The Long Run and Short Run	
	12	Direct Costs of Transport -Factors influencing the supply of transport - Fixed and variable costs	
	13	Economies of scale, scope, density, experience, and commonality	
	14	Problems of common cost allocation: the road and rail track cases	
	15	Transport user costs and the notion of generalized costs	
	16	The bunching of public transport services	
	17	Transportation Investment	
IV		**Pricing of Transport**	10
	18	Matching supply with demand -Marginal cost pricing	
	19	Price differentiation, price discrimination, and yield management - Pricing with stochastic demand	
	20	The problem of the peak -Indirect pricing	
	21	Containing the Environmental Costs of Transport - The OECD's 'polluter-pays principle'	
	22	Transport subsidies and the environment	
V		**Activity**	5
	23	Analyse the logistics industry in India: https://data.gov.in/search?title=logistics	
	24	Find the trends of transport sector in the world using the data set: OECD. International Transport Forum. 2012. "Trends in the Transport Sector: 1970-2009". http://www.oecdilibrary.	

| | 25 | org.prx.library.gatech.edu/ | |
| | | Using the database in the website: https://portwatch.imf.org/, analyse the activities of the port in different parts of the world | |

References

1. Sahay B.S, Supply Chain Management for Global Competitiveness, Macmillan India

Ltd., New Delhi.

2. Reguram G , Rangaraj N , Logistics and Supply Chain Management Cases and

Concepts, Macmillan India Ltd., New Delhi..

3. Coyle, Bradi & Longby, T h e Management of Business Logistics, West Publishing

Co. Martin Christopher, Logistics and Supply Chain Management

4. Paul R. Murphy Jr. and Donald Wood, Contemporary Logistics

5. Harvard Business Review, Managing Supply Chains

6. Alan E. Branch, Global Supply Chain Management and International Logistics

7. Simchi-Levi, Kaminsky & Simchi-Levi, Managing the Supply Chain: The Definitive Guide

8. McCarthy, P. 2001. Transportation Economics: Theory and Practice . Chapters 3 and 4. Malden, MA: Blackwell Publishers, Inc.

9. Button, K., Transport Economics (4th ed.), Edgar Elgar, 2022.

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Familiarise with the critical role of logistics in global operations	U	PSO-1,2
CO-2	Analyze logistics as a support and interface function in procurement	Ap	PSO-3

CO-3	Evaluate the economic characteristics of transportation	E	PSO-3
CO-4	Evaluate pricing strategies in transportation	E	PSO-3, 4
CO-5	Evaluate the logistics industry using relevant databases	E	PSO-3, 4

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture:Tutorial:Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
1	Familiarise with the critical role of logistics in global operations	PO - 3 PSO-1,2	U	F, C	L	
2	Analyze logistics as a support and interface function in procurement	PO -2 PSO-3	Ap	P	L	
3	Evaluate the economic characteristics of transportation	PO- 4 PSO-3	E	P	L	
4	Evaluate pricing strategies in transportation	PO-3 PSO-3, 4	E	P	L	
5	Evaluate the logistics industry using relevant databases	PO-3, 4 PSO-3, 4	E	M	T	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	1	-	-	-	-	-	-	-	3	-	-	-
CO 2	2	3	-	-	-	-	-	3	-	-	-	-
CO 3	-	-	1	-	-	-	-	-	-	3	-	-
CO 4	-	-	2	3	-	-	-	-	3	-	-	-
CO 5	-	1	-	-	-	-	-	-	3	3	-	-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4		✓		✓
CO 5		✓		✓

SEMESTER V

		Discipline Specific Core		
5	UK5DSCECO300	Indian Economy	DSC	300-399
	UK5DSCECO301	International Economics -1	DSC	300-399
	UK5DSCECO302	Statistical Methods for Economics	DSC	300-399
	UK5DSCECO303	Economics of Education	DSC	300-399
	UK5DSCECO304	Economics of Health	DSC	300-399
	UK5DSCECO305	Development Policy Issues in Emerging and Frontier Economies	DSC	300-399
		Discipline-Specific Elective (can select two)		
5	UK5DSEECO300	Research Methodology in Economics	DSE	300-399
	UK5DSEECO301	Public Economics	DSE	300-399
	UK5DSEECO302	Artificial Intelligence and Machine Learning in Economics	DSE	300-399
		Skill Enhancement Course (can select one)		
5	UK5SECECO300	Start-Up Management	SEC	300-399

UK5SECECO301	Environmental Impact Assessment	SEC	300-399

Discipline Specific Core

University of Kerala

Discipline	ECONOMICS				
Course Code	UK5DSCECO300				
Course Title	INDIAN ECONOMY				
Type of Course	DSC				
Semester	V				
Academic Level	300-399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	Basic understanding of the Indian Economy				
Course Summary	The 'Indian Economy' course offers a thorough examination of India's economic dynamics, employing an interdisciplinary approach to delve into the societal and economic forces influencing its development. Topics include growth indicators, sectoral analysis of population and human development, economic reforms, poverty alleviation strategies, demographic shifts, and the effects of globalization.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Overview of Indian Economy**	10
	1	State of the Economy: Pre and Post-Liberalization Phases	
	2	Growth and Trends in National Income, Poverty, Inequality and Unemployment	
	3	Debate on poverty estimation, poverty alleviation strategies and programs	
	4	Formal and Informal Economy, Gig Economy	
	5	India in the global development front	
II		**Population and Human Development**	12
	6	Demographic Transition, Demographic Dividend	
	7	Rural and Urban Migration, Degree and Trend of Urbanization	
	8	Labour Force, work participation and occupational structure	
	9	Human Development Indices: HDI, GDI, Multi-dimensional Poverty Index, Hunger Index, Happiness Index	
III		**Sectoral Composition of the Indian Economy**	14

	10	Sectoral Contribution, Structural Changes	
	11	Role and Significance of Agriculture, Land Reforms and Institutional Changes in Agrarian Structure	
	12	Current issues in Agriculture- agrarian crisis, price instability, rural indebtedness, marketing constraints	
	13	Relevance of Industrial sector - Growth and performance since 1991, MSME Sector in India, Public Sector Policies and Disinvestment, Sunrise industries	
	14	Significance and Composition of the Service Sector in India	
	15	Infrastructure Development in India, Modes of Financing Infrastructure development, Transportation, Communication, Insurance, IT & ITeS, Fintech, E-commerce and Digital Economy	
IV		**Economic Reforms**	**12**
	16	Genesis and impact of LPG	
	17	Inflation dynamics and Inflation targeting in India	
	18	Reforms in Tax policy, GST regime	
	19	Centre-State Fiscal relations, Finance Commission & devolution of resources	
	20	Institutional Mechanism of NITI Aayog, Make in India, Atmanirbhar Bharat, Amrut Kaal, Knowledge-Economy, India Innovation Index	
	21	External sector, Foreign Trade Policy 2023	
V		**Group Activity designed by the Tutor**	
	22	Guideline: (i) Evaluation through data analysis and group discussion/seminar on the performance of the Indian Economy since independence (ii) Analyse the trend in poverty, inflation, and unemployment using any national database	**12**

Basic Readings

1. Uma Kapila, (2022), 33rd Edition, Indian Economy Since Independence, Academic Foundation, New Delhi.
2. Rodrik, Dani, and Arvind Subramanian (2004) From" Hindu growth" to productivity surge: the mystery of the Indian growth transition. No. w10376. National Bureau of Economic Research.
3. Jose, Tojo (2021), Indian Economy, First Edition, Media Books
4. Economic Survey available at
   https://www.indiabudget.gov.in/economicsurvey/index.php
5. RBI database on Indian Economy
   https://cimsdbie.rbi.org.in/DBIE/#/dbie/home
6. Periodic Labour Force Surveys
   https://www.mospi.gov.in/Periodic-Labour-Surveys

Additional Readings

1. Jalan, B. (1992), The Indian Economy – Problems and Prospects, Viking, New Delhi.
2. Rakesh Mohan (2008), 'Growth Record of the Indian Economy, 1950-2008: A Story of Sustained Savings and Investment", Economic and Political Weekly, Vol. 43, No. 19 , pp. 61-71
3. Tendulkar Committee Report available at
   http://planningcommission.gov.in/eg_poverty.html

4. Nagaraj R.(2020) "Understanding India's Economic Slowdown: Need for Concerted Action" The India Forum, February 7, available at
https://www.theindiaforum.in/article/understanding-india-s-economic-slowdown

5. Nagaraj R(2017). "Economic Reforms and Manufacturing Sector Growth: Need for Reconfiguring the Industrialisation Model", *Economic and Political Weekly*: Vol. 52, Issue No. 2, 14 Jan.

6. Evolving Issues and Future Directions in GST Reform in India by M Govind Rao
https://www.mse.ac.in/wp-content/uploads/2022/08/Working-Paper-221.pdf

7. Mukherjee Arpita (2013). The service sector in India. ADB Working Paper No. 352, Asian development Bank, Manila

8. Report of the 15th Finance Commission for 2021-26
https://prsindia.org/policy/report-summaries/report-15th-finance-commission-2021-26

9. Shaktikanta Das (2021), Financial Inclusion – Past, Present and Future,
https://www.rbi.org.in/Scripts/BS_SpeechesView.aspx?Id=1110

10. Mukherjee Arpita (2013). The service sector in India. ADB Working Paper No. 352, Asian development Bank, Manila

11. Shweta Saini. et.al, (2021). Farm loan waivers in India: Assessing impact and looking ahead. NABARD Research Study – 22.
https://www.nabard.org/auth/writereaddata/tender/2304223730farm-loan-waivers-in-india-assessing-impact-and-looking-ahead_compressed.pdf

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the current state of Indian Economy	R, U	PSO-2 PSO-4
CO-2	Evaluate the status of India in the Human Development front	U, An	PSO-2 PSO-3
CO-3	Analyse the sectoral composition and performance of the economy	Ap, An	PSO-2

CO-4	Evaluate the impact of various reforms in the domestic economy	An, E	PSO-2 PSO-3 PSO-4
CO-5	Evaluate the growth trend and basic issues through group activities	E, C	PSO-3 PS0-4 PSO-6

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create
Note: 1 or 2 COs/module

Name of the Course: Indian Economy

Credits: 4:0:0 (Lecture:Tutorial:Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understand the current state of Indian Economy	PO-1, PSO-2, PSO-4	R, U	C, F	L	-
CO-2	Evaluate the status of India in the Human Development front	PO-1, PO-2, PSO-2, PSO-3	U, An	C, F	L	-
CO-3	Analyse the sectoral composition and performance of the economy	PO-1, PO-3, PSO-2	Ap, An	F, P	L	-
CO-4	Evaluate the impact of various reforms in the domestic economy	PO-5, PO-2, PSO-3. PSO-4	An, E	F, P	L	-
CO-5	Evaluate the growth trend and basic issues through group activities	PO-5, PO-6 PSO-3 PSO-4 PSO-6	E, C	P, M	T	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PO 1	PO2	PO3	PO4	PO5	PO6	PO 7	PO 8
CO 1	-	3	-	3	-	-	2	-	-	-	-	-	-	-
CO 2	-	2	3	-	-	-	2	3	-	-	-	-	-	-
CO 3	-	3	-	-	-	-	2	-	2	-	-	-	-	-
CO 4	-	-	3	2	-	-	-	2	-	-	3	-	-	-
CO 5	-	-	2	1	-	3		-	-	-	2	2	-	-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓	-	-	✓
CO 2	✓	✓	-	✓
CO 3	✓	✓	-	✓
CO 4	✓	✓	-	✓
CO5	-	✓	✓	-

University of Kerala

Discipline	ECONOMICS				
Course Code	UK5DSCECO301				
Course Title	INTERNATIONAL ECONOMICS-1				
Type of Course	DSC				
Semester	V				
Academic Level	300 - 399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	An understanding of the basic economic concepts				
Course Summary	The course provides knowledge on theories of International trade. The course also makes the students aware of India's exports, imports and direction of trade.				

Detailed syllabus:

Module I	Theories of International trade	15 Hrs
1	Subject matter of International economics- International trade v/s internal trade and -Trade as an engine of growth- Mercantilist view and Physiocrats view	
2	Classical Theories: Absolute cost advantage and comparative cost advantage- Heckscher-Ohlin theory- Leontief	
3	Paradox- Reciprocal Demand- Terms of trade- offer curve-Community Indifference curve-Opportunity Cost-Static and dynamic gains from trade- foreign trade multiplier.	
Module II	**Advanced Theories**	**15 Hrs**
4	Neo Heckscher-Ohlin theory- Stolper-Samuelson Theorem-Metzler Paradox-Rybezynski theorem-Dutch disease-Factor Price equalization theorem-	
5	Factor intensity reversal-Leontief paradox-Learner's reformulation of the Leontief test.	
Module III	**Intra-Industry trade**	**10 Hrs**

6	Intra-industry trade models: Krugman's Model (1979)-Brander-Krugman Model (1983)-Gravity Model Heterogeneous firm trade models (Melitz Model)- Lerner Symmetry theorem- General		
	equilibrium analysis-Small and Large country case.		
ModuleIV	**Technical Progress and Trade**	**10 Hrs**	
7	Technical progress and Trade-Neo-Technological trade theories theory of Availability-Linder's theory of Volume of Trade and Demand pattern-Posner's Imitation Gap model's Product Cycle theory.		
Module V	**Case Study**	**10 Hrs**	
	Trend and pattern of India's exports, imports, and direction of trade. The students should conduct an analytical study on the exports, imports, and direction of trade of India (1) https://commerce.gov.in/trade-statistics/ (2) https://data.imf.org/?sk=9d6028d4f14a464ca2f259b2cd424b85		

Reading List:

1. Carbaugh, R J (2008) - International Economics, (11th Edition) Thomson South Western, New Delhi

2. Soderstein BO and Geffry Reed, (2006) International Economics, Palgrave, Mc Milan

3. Salvatore, D (2008) - International Economics, (8th Edition). Wiley India, New Delhi

4. Krugman P R and Obsfeild M (2009) - International Economics- Theory and Policy, (8th Edition) Pearson, Dorling Kindersley (India) Pvt. Ltd, New Delhi

5. Kindleberger, C P -International Economics (1973) Routledge, London.

6. Appleyard D. R and Field A J (2014) -International Economics (8th Edition), McGraw Hill, New Delhi.

7. Richard E Caver and Harry G Johnson, (1968), Readings in International economics, George Allen and Unwin, London,

8. Grimwade Nigel (2001), International Trade, (Second Edition), Routledge, London.

9. Haberler G (1961), A Survey of International Trade Theory, International Finance Section, .Department of Economics, Princeton University.

10. Reinert K A (2012), An Introduction to International Economics, Cambridge University Press, New York.

11. Gandolfo, Giancarlo,(2016), International Finance and Open Economy Macro economics, Springer.

12. Gandolfo, Giancarlo,(2014), International Trade Theory and Policy, Springer

13. Levi, Maurice D, (2009), International Finance, Fifth Edition, Routledge, London and New York

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Gain clarity in theoretical aspects of international trade and analyse the global trade scenario in the light of learned theories.	U, An	PSO-1,2
CO-2	Understand some advanced theories on intra-industry trade	U	PSO-1
CO-3	Analyse the trend and pattern of India's foreign trade	An	PSO-3
CO-4	Evaluate India's position in international trade scenario	E	PSO-3

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: International Economics Credits: 4:0:0 (Lecture:Tutorial:Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
1	Gain clarity in theoretical aspects of international trade and analyse the global trade scenario in the light of learned theories.	PSO-1,2	U,An	F, C	L	-
2	Understand some advanced theories on intra-industry trade	PSO-1	U	P	L	-
3	Analyse the trend and pattern of India's foreign trade	PSO-3	An	C,P	L	-
4	Evaluate India's position in international trade scenario	PSO-3	E	P,M	L	-

F-Factual, C- Conceptual, P-Procedural, M-Met cognitive

Mapping of COs with PSOs and POs:

	PSO 1	PSO 2	PSO 3	PSO4	PS O5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	3	-	-	-	-	3	2	-	-	-	-
CO 2	3	-	-	-	-	-	-	-	-	-	-	3
CO 3	-	-	3	-	-	-	3	2	-	-	-	-
CO 4	-	-	3	-	-	-	3	3	-	-	-	2

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics:

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓	✓		✓
CO 2	✓	✓		✓
CO 3	✓	✓	✓	✓
CO 4	✓	✓	✓	✓

University of Kerala

Discipline	ECONOMICS				
Course Code	UK5DSCECO302				
Course Title	STATISTICAL METHODS FOR ECONOMICS				
Type of Course	DSC				
Semester	V				
Academic Level	300 - 399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours			4
Pre-requisites	Familiarity with basic statistics.				
Course Summary	Application of statistical techniques to economic data enables students to understand relationships, make predictions, and enhance decision-making skills.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Index Numbers and Time Series**	15
	1	Index Numbers and Time series-meaning-components	
	2	Measurement of the trend-graphic method, semi-average method, moving average method – exponential smoothing, and method of least squares	
	3	Index numbers-Meaning and types of Index numbers – Simple and Weighted index numbers and WPI- Problems in the construction of index numbers – Tests of index numbers- Fishers ideal index numbers- factor reversal test and time reversal test	
	4	Deflating – Base shifting – Splicing -Uses of Index numbers- Give data set	
II		**Correlation and Regression**	15
	5	Correlation--Simple, Partial and Multiple correlation	
	6	Scatter diagram-Karl Pearson's coefficient of correlation-Spearman's rank correlation, Probable error- uses of correlation	
	7	Simple and multiple linear regression - Method of Least Squares-Lines of regression- Regression coefficient- Relation between regression and correlation coefficients	
III		**Elementary Probability Theory**	12
	8	Sample spaces and events	
	9	Probability axioms and properties	
	10	Conditional probability and Bayes' rule; independence	
IV		**Random Variables and Probability Distributions**	12
	11	Defining random variables; probability distributions	
	12	Expected values of random variables and of functions of random variables	

	13	Properties of commonly used discrete and continuous distributions (uniform, binomial, normal, Poisson and exponential random variables).	
V		**Application**	**6**
	14	Application of the 4 modules can be done using Spreadsheet	

Readings

1. Murray R. Spiget (1999), Probability Theory Schaum's Series .
2. Lipshutz, (2000), Theory of Probability, Schaum 's Series
3. S P Gupta, Statistical Methods, Sultan Chand and sons.
4. John E. Freund, Mathematical Statistics, Prentice Hall, 1992.
5. Richard J. Larsen and Morris L. Marx, An Introduction to Mathematical Statistics and its Applications, Prentice Hall, 2011
6. DeGroot, M., and M. Schervish. Probability and Statistics. 3rd ed. Reading, MA: Addison-Wesley, 2001. ISBN: 9780201524888.
7. Lindgren, B. Statistical Theory. 4th ed. New York, NY: Chapman and Hall, 1993. ISBN: 9780412041815.

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understanding and solving range of index numbers and moving averages to analyse real world data	U, Ap, An	PSO-1,2
CO-2	Interpreting and quantifying the strength and direction of relationships between variables.	U, Ap	PSO-1,2
CO-3	Applications of linear regression and its interpretation in real-world datasets	Ap, E	PSO-1,2,4
CO-4	Create a solid foundation in probability concepts and statistical methods	U, C	PSO- 1,3
CO-5	Explore essential concepts related to chance and uncertainty	U, An	PSO-1,3

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture:Tutorial:Practical)

CO	CO	PO/PSO	Cognitive	Knowledge	Lecture (L)/Tutorial	Practical

No.			Level	Category	(T)	(P)
CO-1	Understanding and solving range of index numbers and moving averages to analyse real world data	PO-1,2,3 PSO-1,2	U, Ap, An	C,P		
CO-2	Interpreting and quantifying the strength and direction of relationships between variables.	PO-1,2,3 PSO-1,2	U, Ap	C,P		
CO-3	Applications of linear regression and its interpretation in real-world datasets	PO-1,2,3 PSO-1,2,4	Ap, E	C,P,M		
CO-4	Create a solid foundation in probability concepts and statistical methods	PO-1,2,3 PSO-1,3	U,C	C, P		
CO-5	Explore essential concepts related to chance and uncertainty	PO-1,2,3 PSO-1,3	U, An	C, P		

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6

CO 1	3	2	-	-	-	-	3	2	1			
CO 2	2	3	-	-	-	-	3	2	1			
CO 3	2	3		1	-	-	2	3	1			
CO 4	2	-	3		-	-	3	2	1			
CO 5	3		2	-	-	-	1	2	3			
CO 6	-	-	-		-	-						

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4		✓		✓
CO 5		✓		✓

University of Kerala

Discipline	ECONOMICS				
Course Code	UK5DSCECO303				
Course Title	Economics of Education				
Type of Course	DSC				
Semester	V				
Academic Level	300 - 399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-		4
Pre-requisites	Basic understanding of Economics				
Course Summary	The course introduces students to the economic principles and theories underlying education. It examines the relationship between education and economic development, the allocation of resources in education, and the impact of education policies on individuals and society.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Introduction**	15
	1	Meaning and scope of Economics of Education.	
	2	Formal and non-formal education.	
	3	Providers of education- public, private, and non-profit making institutions.	
	4	Role of State in Education, Education and spillover and inter-generational effects.	
II		**Cost and Benefits of Education**	15
	5	Demand and supply of education- determinants of demand for education..	
		Concept of cost of education. Cost and benefits of education- Types of cost- Direct, indirect, private, social, and opportunity cost-Education Production function	
	6	Benefits of education and indirect benefits, private and social benefits.	
	7	Returns from education- Private and social returns. Evaluation of educational effectiveness.	
III		**Education and Economic Development**	10
	8	Relation between education and development. Meaning of Human capital, manpower, and human resources.	
	9	Education and Human Capital- Human capital and its constituents.	
	10	Human capital model -signaling model.	
IV		**Financing of Education**	12
	11	Sources of education finance- financing and cost-sharing of higher education. Education loans and subsidies.	
	12	Commercialization and privatization of education in India.	
	13	Role of the state in regulating and financing higher education.	
	14	Overview of New Education Policy 2020.	
V		**Case works**	8

	15	Comparing NEP-1986 and NEP-2020.	
	16	Survey to analyze the issue of educated unemployed. Data Base on AISHE Survey to evaluate the Indian Higher education sector: https://aishe.gov.in/aishe/gotoAisheReports UNESCO database for Education for cross-country analysis http://sdg4-data.uis.unesco.org/	

Reading List

1. An Introduction to the Economics of Education (Mark Blaug, 1972, Penguin books
2. Economics of Education (Michael Lovenheim & Sara Turner) Worth Publishers, 2018, Chapter 1-3
3. Education and economic growth (Hanushek and Woessmann, 2010) Elsevier
4. Becker G.S, Human Capital: A theoretical and empirical analysis with special reference to education, Columbia University Press, NY, 1964.
5. Becker, G.S. (1962). "Investment in Human Capital: A Theoretical Analysis," Journal of Political Economy 70, pp. 9-49
6. Economics of Education (Michael Lovenheim & Sara Turner) Worth Publishers, 2018
7. Economics of Education (Michael Lovenheim & Sara Turner) Worth Publishers, 2018
8. Returns to Education in Developed Countries M Gunderson and P Oreopoulos, University of Toronto, Toronto, ON, Canada ã 2010 Elsevier Ltd
9. Private Higher Education in India by J.B.J Tilak, EPWVol. 49, Issue No. 40, 04 Oct, 2014Financing Higher Education and Education Loans in India: Trends and Troubles P. Geetha Rani, Journal of Social Sciences, 2016

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the meaning and scope of the Economics of Education	R, U	PSO-1
CO-2	Critically analyze the cost and benefits of education.	An, E	PSO-2,3
CO-3	Analyze and evaluate the financing of education and its impacts	An, E	PSO-3,4
CO-4	Evaluate the role of education in economic development.	An, E	PSO-3,4

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture:Tutorial:Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understand the meaning and scope of the Economics of Education	PO-1,2 PSO-1	R, U	F, C	L	
CO-2	To critically analyze the cost and benefits of education.	PO-2,3 PSO-2,3	An, E	P, M	L	
CO-3	To analyze and evaluate the financing of education and its impacts	PO-2,3 PSO-3,4	An, E	P, M	L	
CO-4	To evaluate the role of education in economic development	PO-2,4 PSO-3,4	An, E	P, M	L	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO4	PSO5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	-	-	-	-	-	3	3				

CO 2		3	3	-	-	-		3	3			
CO 3	-	-	3	3	-	-		3	3			
CO 4	-	-	2	2	-	-		2		2		

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4	✓	✓		✓

University of Kerala

Discipline	ECONOMICS				
Course Code	UK5DSCECO304				
Course Title	Economics of Health				
Type of Course	DSC				
Semester	V				
Academic Level	300 -399				
Course Details	Credit	Lecture Per week	Tutorial Per week	Practical Per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	Knowledge of basic economic concepts.				
Course Summary	ThecourseprovidestheoreticalfoundationsaswellaseconomicevaluationofHealthEconomics.Italsooffersanoverviewofhealth Sector in India.				

Detailed Syllabus:

Module	Unit	Content	Hrs
		Introduction to Health Economics	**10**

References

1) WilliamJack,(1999),PrinciplesofHealthEconomicsforDevelopingCountries,World Bank Institute Development Studies.

	Introduction to Health Economics - Definition of Health Economics - The state and Scope of Health Economics - Health Dimensions of development - Economic Development and health: linkage & impact - Determinants of Health – Indicators of Health: mortality indicators, morbidity indicators, HALE, DALY, QUALY, health care delivery indicators, and utilization rates.
	Types of Healthcare services – curative, preventive, promotive, and palliative Economic principles and their application to healthcare (scarcity, opportunity cost, and efficiency).
II	**Micro economic Foundations of Health Economics**
	Demand and supply of health care- Grossman model of demand for health - Disparities in health care –Demand for Health - Factors affecting the demand for health care - Models of access to health care: The Anderson behavioral model, the health belief model, the theory of reasoned action.
	Uncertainty and Health insurance market- The concept of human life value- Types of insurance mechanisms: Public, private & social-Market failure and rationale for Public intervention -Moral hazard and adverse selection in insurance.
III	**Economic Evaluation of HealthCare**
	Partial economic evaluation: cost of illness analysis and program cost analysis- full economic evaluation: cost-effectiveness analysis, cost-utility analysis, cost-benefit analysis, willingness to pay, cost minimization analysis, and cost consequence analysis.
IV	**India: Health System Review**
	Principal health reforms: Phase I (1946-82), Phase II (1983-2001), Phase (2002- 2020): NHP 2002, NRHM 2005, RSBY, PM-JAY and state level government-funded health insurance schemes, NHP 2017, Ayushman Bharat 2018. Assessment of the health system-Population health-health service outcomes and quality of care-health system efficiency.
V	Assess Kerala's health system using the latest NSSO Data for Kerala and submit a report.

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

3) World Development Report (1993). Investing in Health. The World Bank.

4) World Health Organisation (2013). The Economics of the Social Determinants of Health and Health Inequalities: A Resource Book. World Health Organisation.

5) AndrewMJones(ed.)2006.TheElgar Companion to Health Economics,EdwardElgar Publishing Ltd,2012

6) SherryGliedandPeterC.Smith(2011):The Oxford Handbook of Health Economics, OUP UK, 201.

7) PanchamukhiPR(2002):EconomicsofHealth:AnIntroductoryReview,ICSSR.

8) MusgroveP(2004):Health Economics in Development,TheWorld Bank

9) NationalHealthAccounts- India

10) JamesW.Hendeson(2005),Heath Economics and Policy,Thomson-South–Western.

11) ChokshiM,PatilB,KhannaR,NeogiSB,SharmaJ,PaulVK,ZodpeyS.(2016)Health systems in India. J Perinatol.

12) Singh,Malkeet &Jyani, Gaurav. (2021). Indian Health System &Healthcare Financing.

13) AjayMaha(2022),IndiaHealthSystemReview,HealthSystemsinTransition,World Health Organization.

14) Turner HC, Archer RA, Downey LE, Isaranuwatchai W, Chalkidou K, Jit M and TeerawattananonY(2021)AnIntroductiontotheMainTypesofEconomicEvaluations Used for Informing Priority Setting and Resource Allocation in Healthcare: Key Features, Uses, and Limitations. Front. Public Health.

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand basic health economic concepts	R,U	PSO-1,2
CO-2	Apply economic concepts to critically analyse health care policies	Ap	PSO-1,2,3
CO-3	Evaluate health programmes in general.	E	PSO-1,2,3

CO-4	Judge the institutional aspects of health care in India.	E	PSO-1,2,3
CO-5	Critically evaluate the health policies in India.	E	PSO-2

R-Remember,U-Understand,Ap-Apply,An-Analyze,E-Evaluate,C-Create

Note:1 or2 COs/module

Name of the Course: Economics of Health Credits:4:0:0(Lecture:

Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understand basic health economic concepts	PO-1 PSO-1,2	R.U	F,C	L	i.
CO-2	Apply economic concepts to critically analyse health care policies	PO-2 PSO-1,2,3	Ap	F,C	L	
CO-3	Evaluate health programmes in general	PO-2,3 PSO-1, 2,3	E	F,C	L	
CO-4	Judge the institutional aspects of	PO-1,2 PSO-1,2,3	E	F,C	L	

	Health care in India				
CO-5	Critically evaluate the health policies in India	PO-2 PSO-2	E	F,C	L

F-Factual,C-Conceptual,P-Procedural,M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	3	-	-	-	-	3					
CO 2	2	3	2	-	-	-		2				
CO 3	3	2	2	-	-	-		3	2			
CO 4	-	-	2	3	-	-						
CO 5	-	1	-	-	-	-						
CO 6	-	-	-	3	-	-						

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly/Low
2	Moderate/ Medium
3	Substantial/ High

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4	✓	✓		✓

Discipline	ECONOMICS				
Course Code	UK5DSCECO305				
Course Title	Development Policy Issues in Emerging and Frontier Economies.				
Type of Course	**DSC**				
Semester	V				
Academic Level	300 - 399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	Understanding of macroeconomics and development policies.				
Course Summary	The course examines economic policies and challenges faced by emerging and frontier economies. It covers theoretical frameworks, empirical evidence, and policy debates surrounding key issues such as macroeconomic policy, economic growth, trade, finance, poverty alleviation and governance.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Introduction to development issues**	8
	1	Emerging Economies and Frontier Economies- emerging economies and frontier economies in the context of globalization- issues in investment in frontier markets.	
II		**Macroeconomic Policy Challenges**	16
	2	Fiscal policy-. Managing deficits, debt- Public Sector Reforms, external shocks like pandemic- Significance of TTT, Sovereign debt management.	
	3	Monetary Policy- inflation targeting-limitations of conventional tools and instruments- Unconventional monetary policy- Forward guidance- Asset Purchases and Quantitative Easing- negative interest rates- term funding facilities- adjustments to market operations.	
III		**Trade, and Finance**	14
	4	Trade liberalization vs. protectionism-regional integration- Multilateralism-. Agricultural trade liberalization and food security- Trade related challenges for smallholder farmers- External Imbalances-Export-oriented growth policies- FDI and capital inflows.	
	5	E-commerce and digital trade- Access to Finance and financial inclusion- microfinance- financial regulation and stability.	
IV		**Poverty and Social Development**	12
	6	Rural and urban poverty- targeted vs. social protection programs- cash transfer programs- food assistance programs- social insurance schemes- employment	

	7	generation- Slum upgradation -Inclusive urban development. Human capital development-Education-Health-Nutrition and food security.	
V		**Case Studies**	**10**
		Students may be asked to do case studies covering the various aspects of development issues of emerging and frontier economies. Some suggestions – a) RBI's response to the COVID-19 crisis: Objectives, measures and impact. b) Compare the COVID-19 fiscal policy responses of Brazil, China, and India and discuss how well the policies complied with the TTT and sound fiscal policy.	

Reading List

1) Rodrik, D. (2017). Straight Talk on Trade: Ideas for a Sane World Economy. Princeton University Press.
2) Acemoglu, D., & Robinson, J. A. (2012). Why Nations Fail: The Origins of Power, Prosperity, and Poverty. Crown Business.
3) Ravallion, M. (2016). The Economics of Poverty: History, Measurement, and Policy. Oxford University Press.
4) Huidrom-Kose-Ohnsorge (2016) Fiscal Policy Challenges in Emerging and Developing Economies, World Bank Policy Research Working Paper; No. 7725
5) IMF (2020): Here's how fiscal policy can support emerging markets and developing economies through COVID-19 and beyond
6) World Development Report 2017, Chapter 1: "Governance for development", World Bank (2017)
7) Williams, John, 2014: Monetary policy at the zero lower bound: Putting theory into practice.
8) Bernanke, B. 2020. The New Tools of Monetary Policy. AEA Presidential Address. Brookings Institution https://www.brookings.edu/wp-content/uploads/2019/12/Bernanke_ASSA_lecture.pdf
9) Williams, John, 2014: Monetary policy at the zero-lower bound: Putting theory into practice. https://www.brookings.edu/wp-content/uploads/2016/06/16-monetary-policy-zero-lower-bound_williams.pdf
10) World Bank (2008), The Political Economy of Policy Reform: Issues and Implications for Policy Dialogue and Development Operations, Report No 44288-GLB. http://siteresources.worldbank.org/EXTSOCIALDEV/Resources/The_Political_Economy_of_Policy_R eform_Issues_and_Implications_for_Policy_Dialogue_and_Development_Operations.pdf

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the unique economic characteristics of emerging economies and frontier economies.	R, U	PSO-1 PSO-2
CO-2	Analyze the role of economic policies in promoting growth, stability, and development.	U, An	PSO-2 PSO-3
CO-3	Critically evaluate the effectiveness of various policy measures in addressing challenges faced by these economies.	An, E	PSO-2 PSO-3 PSO-4
CO-4	Examine the implications of the various challenges on economic policy formulation.	E, C	PSO-2 PSO-3
CO-5	Analyse and evaluate case studies and real-world examples of economic policy implementation.	E, C	PSO-2 PSO-3 PSO-4

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understand the unique economic characteristics of emerging economies and frontier	PO-1 PO-2 PSO-1 PSO-2	R, U	F, C	L	

	economies.					
CO-2	Analyze the role of economic policies in promoting growth, stability, and development.	PO-1 PO-2 PSO-1 PSO-2	U, An	P	L	
CO-3	Critically evaluate the effectiveness of various policy measures in addressing challenges faced by these economies.	PO-1 PO-2 PO-3 PSO-2 PSO-3 PSO-4	An, E	P, M	L	
CO-4	Examine the implications of the various challenges on economic policy formulation.	PSO-2 PSO-3 PO-1 PO-2 PO-3	E, C	P, M	L	
CO-5	Analyse and evaluate case studies and real-world examples of economic policy implementation	PSO-2 PSO-3 PSO-4 PO-1 PO-2 PO-3 PO-4	E, C	P, M	L	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs:

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	3	-	-	-	-	3	3				
CO 2	3	3	-	-	-	-	3	3				
CO 3	-	3	3	3	-	-	3	3	3			
CO 4	-	3	3		-	-		3	3			
CO 5	-	3	3	3	-	-	3	3	3	3		

Correlation Levels:

Assessment Rubrics:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics:

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4	✓			✓

Discipline Specific Elective

University of Kerala

Discipline	ECONOMICS				
Course Code	UK5DSEECO300				
Course Title	Research Methodology in Economics				
Type of Course	DSE				
Semester	V				
Academic Level	300 - 399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites					
Course Summary	The course provides the theoretical perspectives that guide research and equips the students with the tools and techniques of data collection, and methods of data analysis especially in Economics.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Fundamentals of Research and Research Design**	15
	1	Meaning and Objective of Research- Types of Research- Research Methodology, Research Methods, and Techniques	
	2	Defining the Research Problem-Formulation of research problem: Broad Topic - Narrow Topic- Focused Topic- Research Question- Research Process and Steps involved in Research Process- Criteria of good research, Research proposal or synopsis	
	3	Literature Survey- Sources of Literature- Books, Journals, E-Journals, Thesis- Research design- meaning, definition- features of a good design- Research Hypothesis-.	
	4	Sampling and Sample Design –Probability and Non-Probability Sampling - Random and Non-Random Sampling Errors	
II		**Methodology of Research**	15
	5	Theoretical Framework, Conceptual Framework, Operational Framework, and Analytical Framework.	
	6	Quantitative and Qualitative Data- Classification of Measurement scales- Validity and Reliability	
	7	Sources of data- Primary data, Secondary data, Cross-sectional, Time series, panel data	

	8	Methods of Data Collection- Observation, Experimentation, Interviewing, Panel Method- Tools for Data Collection – Schedule, Questionnaire- Pilot studies and Pre-tests- Case study method	
III		**Data Analysis**	15
	9	Data Preparation- Editing, Coding, Classification, Tabulation, Graphical Presentation, Data Cleaning	
	10	Statistical Inference- Parameter and Statistic, Degree of Freedom, Standard Error- Testing Hypothesis- Null and Alternative Hypothesis	
	11	Statistical Analysis- Types of Statistical Analysis –Descriptive and Causal Analyses: Unidimensional analysis, Bivariateanalysis, Multivariate analysis; Inferential analysis	
	12	Testing of hypotheses: Parametric and non-parametric tests	
	13	Economic modelling-Exposure to Software Packages - Use of computer Programs/Packages in Data analysis (Gretl, R)	
IV		**Interpretation and Report Writing**	10
	14	Interpretation- Meaning, Techniques.	
	15	Report Writing- Introduction- Types of Reports- Steps involved in Report Writing	
	16	Research Report Format- Principles of Writing- Documentation- Footnotes and Bibliography – Briefing, Evaluation of Report Writing, Academic integrity	
V		**Case works**	5
	23	Identifying research problems- preparation of research projects.	

Reading List

1) Business Research Methods- Alan Bryman & Emma Bell, Oxford University Press.
2) Business Research Methods- Donald Cooper & Pamela Schindler, TMGH
3) Reasearch methodology:Techniques and Methods, C R Kothari
4) Gerald Guthrie(2012),Basic Research Methods, Sage, New Delhi.
5) Majumdar, P.K. (2011), Research Methods in Social Sciences, Viva Books, New Delhi
6) Rowena Murray(2010), How to Write a Thesis, Tata McGraw Hill, New Delhi.

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Develop a comprehensive understanding of the fundamental principles of research.	R, U	PSO-1
CO-2	Gain the ability to critically evaluate research literature and become proficient in reading and interpreting research literature.	An, E	PSO-2,3
CO-3	Develop practical experience in developing research proposals	C	PSO-2,3,6
CO-4	Develop the ability to communicate research findings effectively through written reports, oral presentations, and visual representations.	E, C	PSO-3,5

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture:Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Develop a comprehensive understanding of the fundamental principles of research	PO-1 PSO-1	R, U	F, C	L	
CO-2	Gain the ability to critically evaluate research literature and	PO-1,2 PSO-2,3	An, E	P, M	L	

	become proficient in reading and interpreting research literature				
CO-3	Develop practical experience in developing research proposals	PO-2,3,8 PSO-2,3,6	C	P, M	L
CO-4	Develop the ability to communicate research findings effectively through written reports, oral presentations, and visual representations	PO-3,4,7 PSO-3,5	E, C	M	L

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO4	PS O5	PSO 6	PO1	PO 2	PO3	PO 4	PO 5	PO6	PO -7	PO -8
CO 1	3	-	-	-	-	-	3							
CO 2		3	3	-	-	-	3	3						

CO 3	-	3	3	-	-	3		3	3					3
CO 4	-	-	3		3	-			3	3			3	

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4		✓		✓

University of Kerala

Detailed Syllabus

Discipline	ECONOMICS				
Course Code	UK5DSEECO301				
Course Title	PUBLIC ECONOMICS				
Type of Course	DSE				
Semester	V				
Academic Level	300 - 399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4hours	-	-	4
Pre-requisites	Understanding of basic concepts in Economics				
Course Summary	The course enables the student to understand the complex framework of Government finance and Government policy along with fiscal federalism. The course provides a comprehensive understanding of theories of public expenditure and principles of taxation and budgetary procedure of governments.				

Module	Unit	Content	Hrs
I		**Introduction to Public Economics**	10 Hrs
	1	Meaning and scope of public economics-Private and Public finance- Principles of Maximum Social Advantage: Dalton, Musgrave- Market	
	2	failure- Private and Public Goods- Characteristics- Mixed Goods and Merit Goods - Externalities - Role of Government	
		Public Revenue and Debt	

II	3	Meaning- Tax and non-tax revenue- Cannons of Taxation- effects of taxation- impact, incidence, and shifting of tax (concepts only)-Taxable Capacity -Classifications of tax-Direct and Indirect-Personal Income Tax-Corporate Tax-Current rates and slabs- GST system in India-Classification of Tax rates-CGST-SGST-IGST-UTGST- volume of non-tax revenue in India-SEZ	15 Hrs
	4	Public Debt- Meaning and Objectives- Classification- Sources of Public Debt-Methods of Public Debt redemption- present debt situation of Union and Kerala governments- FRBM ACT- Deficit financing- Trends and pattern of public debt in India	
III		**Public Expenditure**	10 Hrs
	5	Meaning— Classification of Public Expenditure-Plan and Non-plan Expenditure-Developmental and Non-developmental expenditure-Revenue and capital expenditure- Canons of Public Expenditure –	
	6	Theories of Public Expenditure: Wagner's Hypothesis & Peacock - Wiseman Hypothesis– Effects of Public Expenditure- Reasons for the growth of public expenditure in India	
IV		**Fiscal Federalism and Budgeting**	15 Hrs
	7	Meaning of fiscal federalism- Principles- fiscal federalism in India – Finance commission- Role of Finance commissions- Latest finance commission and its recommendations- Union-state shares- allocation criteria-structural changes during the last decade- issues of central state financial relations in India.	
	8	Meaning and types of Budgets- Classification of budget Concepts: Revenue Account, Capital Account, Fiscal Deficit, Revenue Deficit, Primary Deficit, – Zero Based Budgeting-Budgetary Procedure in India-Union Budget- Allocation of resources- Revenue under various heads.	
V		**Activity**	10 Hrs
		Make an evaluative report on the public revenue, public debt, and expenditure structure and its trends in India.	
		OR	
		Prepare an evaluative report on the efficiency of the present indirect tax structure in India.	

Reading List:

1. Musgrave and Musgrave (2004). (Fifth edition). Public Finance in Theory and Practice. Tata McGraw- Hill. New Delhi.

2. Stiglitz, Joseph E and Jay K. Rosengard (2015) Economics of the Public Sector, WW Norton &Co

3. Jha, R. (2009). Modern Public Economics Second Edition. Routledge.

4. Herber, B. P. (1979). Modern Public Finance, Richard D. Irwin INC, Illinois.

5. Holley H. Ulbrich (2011) Public Finance in Theory and Practice, Routledge.

6. Dalton, H. (2013). Principles of Public Finance. Routledge.

7. Myles, G. D. (1995). Public Economics. Cambridge University Press.

8. Gupta, J. R. (2007). Public Economics in India Theory and Practice.

9. Mithani, D. M. (1998). Modern Public Finance: Theory and Practice. Himalaya House.

10. Singh, S. K. (2008). Public Finance in Theory & Practice. S.Chand.

11. Govindha Rao, M & Sen K Thapas. (1995) Fiscal Federalism in India: Theory and Practice. Indian Institute of Public Finance and Policy

12. Reddy Y. V and Reddy G. V(2019) Indian Fiscal Federalism .Oxford

 13. Reports of Economic Survey of India

14. GOI (2019), "Report for the Year 2020-21-XV Fifteenth Finance Commission"

15. Singh, Charan (2018) Debt Management in India

16. Buchanan.J.M.(1958) Public Principles of Public Debt, A defence and Restatement.

17. Indian Public Finance Statistics, Department of Economic Affairs (https://dea.gov.in)

18. Economic Survey 2022-23, Fiscal Development: Revenue Relish, Chapter III (www.indiabudget .gov.in)

19. Economic Review 2023, State Planning Board(https://spb.kerala.gov.in)

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive	PSO addressed

			Level	
CO-1	Familiar with basic concepts and theories of public economics	U		PSO-1
CO-2	Analyse the issues in central state financial relations	An		PSO-3
CO- 3	Analyse the budget presented by the government.	An		PSO-3
CO -4	Evaluate the indirect tax system in India	E		PSO -36,
CO-5	Evaluate the public revenue, debt, and expenditure trends in India	E		PSO -3,6

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
1	Familiar with basic concepts and theories of public economics	PO-1,6 PSO- 1,2	U	F, C	L	
2	Analyse the issues in central state financial relations	PO-2,3,5,6 PSO-2,3	An	F, C	L	
3	Analyse the public budget.	PO-2,3,5 PSO-2, 3	An	F, C	L	
4	Evaluate the indirect tax system in India	PO-1,2,3,5,6, PSO-2,3,6	Ap, An	P	L	

| 5 | Evaluate the public revenue, debt, and expenditure trends in India | PO-1,2,3,5,6 PSO-3, 6 | Ap, An | P | L | |

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs:

	PSO 1	PSO 2	PSO 3	PSO4	PSO5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	2	-	-	-	-	3	-	-	-	-	3
CO 2	-	3	3	-	-	-	-	3	2	-	2	3
CO 3	-	2	3	-	-	-	-	3	2	-	2	-
CO 4	-	2	3	-	-	3	3	2	2	-	2	3
CO 5	-	2	3	-	-	3	3	2	2	-	2	3

Correlation Levels:

Level	Correlation
-	Nil

1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics:

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓	✓	✓	✓
CO 3	✓	✓	✓	✓
CO 4		✓	✓	✓
CO 5		✓	✓	✓

University of Kerala

Discipline	ECONOMICS				
Course Code	UK5DSEECO302				
Course Title	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING FOR ECONOMICS				
Type of Course	DSE				
Semester	V				
Academic Level	300-399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-		4
Pre-requisites	Knowledge of topics such as probability distributions, statistical inference, and hypothesis testing and mathematical concepts like vectors and matrices				
Course Summary	This course aims to give the students a basic understanding of AI and ML and impart relevant knowledge to enhance research tools and improve optimized decision-making.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Introduction to Artificial Intelligence and Machine Learning**	**8**
	1	Overview of AI and ML concepts	
	2	History and development of AI and ML	
	3	Applications of AI and ML in Economics	
II		**Familiarization of Packages for AI and ML**	**14**
	4	Google Colab, Anaconda distribution: - JupyterLab/ Spyder/ PyCharm	
	5	Python libraries: NumPy, SciPy, SciKit-Learn (Practice Session)	
	6	Pandas:-- Loading and Dealing Data-Data pre-processing techniques (Practicals)	
	7	Matplotlib:- Familiarization of Line Plot, Scatter Plot, Histogram, Bar Plot, Box Plot (Box-and-Whisker Plot), Pie Chart	
III		**Foundations of Machine Learning – Software Python**	**15**
	8	Supervised learning, unsupervised learning, and reinforcement learning	
	9	Regression analysis: - Linear Regression, Logistic Regression, Classification algorithms: - K-means	

	10	Dimensionality Reduction-Principal Component Analysis (PCA)	
	11	Performance Evaluation Metrics: - Confusion Matrix, - ROC curves, Precision, Recall	
IV	**Data Pre-processing, Feature Engineering and Predictive Modelling in Economics**		**15**
	12	Data cleaning and pre-processing techniques Feature selection and extraction methods	
	13	Handling missing data and outliers	
	14	Econometric modelling with machine learning	
	15	Predictive modelling for economic indicators	
V	**Case Studies and Applications**		8
	16	Case studies of AI and ML applications in economics	
	17	Hands-on projects and practical applications	
	18	Presentations and discussions on real-world examples	

Readings

1. "Machine Learning for Economics: A Guide to Professional Applications" by Ethan J. Adams and Will E. Drover
2. "Artificial Intelligence: Foundations of Computational Agents" by David L. Poole and Alan K. Mackworth
3. "Data Science from Scratch" by Joel Grus: O'Reilly Media, Inc.

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the theoretical foundations of artificial intelligence and machine learning.	U	PSO-1,3,6
CO-2	Familiarising Python packages for data analysis	U, Ap	PSO-1,3,6
CO-3	Explore the application of AI and ML techniques in economic analysis	Ap, An	PSO-1,3,6
CO-4	Learn how to apply AI and ML methods in Data Preprocessing, Feature Engineering and Predictive Modelling in Economics	Ap, An	PSO-1,3,6
CO-5	Gain hands-on experience with programming and data analysis in economic contexts.	E, C	PSO-1,3,6

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understand the theoretical foundations of artificial intelligence and machine learning.	PO-1,2,3 PSO-1,3,6	U	C, P	L	
CO-2	Familiarising Python packages for data analysis	PO-1,2,3 PSO-1,3,6	U, Ap	P	L	
CO-3	Explore the application of AI and ML techniques in economic analysis	PO-1,2,3 PSO-1,3,6	Ap, An	P, M	L	
CO-4	Learn how to apply AI and ML methods in Data Preprocessing, Feature Engineering and Predictive Modelling in Economics	PO- 1, 2,3 PSO-1,3,6	Ap, An	C, P	L	
CO-5	Gain hands-on experience with programming and data analysis in	PO- 1, 2,6 PSO-1,3,6	E, C	P, M	L	

	economic contexts.					

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs:

	PSO 1	PSO 2	PSO 3	PSO4	PS O5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	2	1	3	-	-	-	1	3	2				
CO 2	2	1	3	-	-	-	1	3	2				
CO 3	1	2	3	-	-	-	2	3	1				
CO 4	1	2	3		-	-	1	3	2				
CO 5	1	2	3	-	-	2	1	2					3
CO 6	-	-	-	3	-	-							

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4		✓		✓
CO 5		✓		✓

Skill Enhancement Course

University of Kerala

Discipline	ECONOMICS				
Course Code	UK5SECECO300				
Course Title	START-UP MANAGEMENT				
Type of Course	SEC				
Semester	V				
Academic Level	300 - 399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	3	3 hours	-	-	3
Pre-requisites	None				
Course Summary	This course provides an overview of start-ups, start-up requirements, strategies, and challenges in setting up a start-up.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Start-up Ecosystem**	**9**
	1	Business Start-up	
	2	Ideation- Venture Choices	
	3	The Rise of the start-up Economy	
	4	Pillars to initiate start-up	
	5	The Start-up Equation	
	6	The Entrepreneurial Ecosystem	
	7	Entrepreneurship in India	
	8	Government Initiatives-Incubation support-Start-up support Hubs	
II		**Start-up Requirements**	**10**
	9	Identifying Start-up capital Resource requirements	
	10	Develop financial assumptions- Constructing a Process Map	
	11	Positioning the venture in the value chain - Launch strategy to reduce risks	
	12	Start-up financing metrics	
	13	The Legal Environment- Approval for New Ventures	
	14	Taxes or duties payable for new ventures	
III		**Starting up Financial Issues**	**8**
	15	Feasibility Analysis	
	16	The cost and process of raising capital	

	17	Unique funding issues of high-tech ventures	
	18	Funding with Equity	
	19	Financing with Debt	
	20	Funding start-ups with bootstrapping- crowd funding- strategic alliances	
IV		**Start-up Strategies**	**9**
	21	Stages of growth in a new venture	
	22	Growing within the industry	
	23	Venture life patterns– preparing for change	
	24	Leadership succession	
	25	Dealing with Failure: Bankruptcy, Exit Strategies, Selling the business	
V		**Tutor designed Module**	**9**
	26	Organize an idea conclave and build viable ideas or YIP activities in consultation with Tutor	

Reading list

John Wiley & Sons, 6 Sept 2012 - Business & EconomicsAn essential guide to building supportive entrepreneurial communities.

Gerardus BlokdykAA World Services2018 ISBN:9780655140757, 0655140751 Startup company Standard Requirements.

A New Roadmap for Entrepreneurial Success By Tom Eisenmann · 30 March 2021 Tom Eisenmann.

The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses Illustrated, 13 September 2011by Eric Ries (Author)

"Start-up Strategies: Navigating the Entrepreneurial Journey" Jessica Thompson Publisher: Entrepreneur Press 2023 ISBN: 978-1-64504-123-4

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the idea behind start-ups	U	PSO-1
CO-2	Analyze start-up capital requirement by examining legal factors	R, U	PSO-3
CO-3	Interpret feasibility analysis towards funding issues	R, U	PSO-6
CO-4	Evaluate Start-up strategies	E, A	PSO-6
CO-5	Develop a start-up startegy with innovative ideas		

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture:Tutorial:Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understand the idea behind start-ups	PO-1, PSO-1	U	C,P	L	-
CO-2	Analyze start-up capital requirement by examining legal factors	PO-1, PO-2 PSO-3	R, U	M	L	-
CO-3	Interpret feasibility analysis towards funding issues	PO-1, PO-6, PO-2 PSO-6	R, U	P,M	L	-
CO-4	Evaluate Start-up strategies	PO-1, PO-3 PSO-6	E, A	P	L	-
CO-5	Develop a start-up startegy with innovative ideas	PO-1, PO-6, PSO-2 PSO-6	Ap, Cr	P, M	T	-

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	2	-	-	-	-	-	2	-	-	-	-	-	-	-
CO2	-	-	3	-	-	-	2	1	-	-	-	-	-	-

CO 3	-	-	-	-	-	2	2	3	-	-	-	1	-	-
CO 4	-	-	-	-	-	1	3	-	1	-	-	-	-	-
CO 5	-	2	-	-	-	3	-	2	-	-	-	2	-	-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓	✓		✓
CO 4		✓		✓
CO 5				

University of Kerala

Discipline	ECONOMICS				
Course Code	UK5SECECO301				
Course Title	Environmental Impact Assessment				
Type of Course	SEC				
Semester	V				
Academic Level	300 - 399 .				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	An understanding of key concepts in Environmental Economics				
Course Summary	The course "Environmental Impact Assessment" makes the students familiar with specific models and methodologies used for impact prediction on the physical-chemical, biological, cultural, and socioeconomic components of the environment.				

Detailed Syllabus:

Module I	Unit	**Introduction to Environmental Impact Assessment**	**08 Hrs.**
	1	Environmental Impact Assessment: Meaning, concept, and objectives- Rationale behind EIA	
	2	Role of EIA in the planning process- Evolution of EIA- International laws and regulations	
Module II		**EIA: Its Procedure**	**20 Hrs**
	3	Alternatives-project screening-scoping- methodologies and impact identification: public involvement-aims and objectives; public involvement methods- data collection for impact analysis-base line situation-Environmental risk analysis	
	4	Cost-benefit analysis- mitigation-impact management-follow up -EIA report-review & licensing- monitoring-case studies	
ModuleIII		**EIA: Methods, Problems, and Constraints**	**10 Hrs**
	5	Criteria for the selection of EIA methodology- Ad-hoc methods, matrices methods, Network methods, Environmental Media Quality Index method, overlay methods, cost/benefit Analysis-	
	6	Challenges: Legal and institutional frameworks,Political and economic factors, Technical and methodological issues, Capacity building and learning, International and regional cooperation, availability of data	

ModuleIV		EIA in India	10 Hrs
	7	History of EIA in India- Importance of EIA in India- Environmental appraisal procedures in India-Current status in India	
	8	Rules and regulations-categorization of projects-Principles of EIA process in India-Challenges- Case studies in India	
Module V		An analytical study	12 Hrs
		(a) Students must identify the potential impacts of a hypothetical project (b) Students have to prepare an EIA report for a local project	

Reading List:

1. Wathern P., "Environmental Impact Assessment: Theory and Practice",Routledge Publishers,1990
2. Glasson J., Therivel Riki, Chadwick Andrew, "Introduction to Environmental Impact Assessment", Oxford Brookes University 2012/ 4th edition
3. Anjaneyulu Y., Manickam Valli, "Environmental Impact Assessment Methodologies", CRC Press 2011
4. Marriott B., "Environmental Impact Assessment: A Practical Guide",McGraw-Hill Publication,1997
5. https://www.iisd.org/learning/eia/
6. Larry W. Canter, *Environmental Impact Assessment*, McGraw Hill Inc. Singapore , 1996
7. A Chadwick, *Introduction to Environmental Impact Assessment*, Taylor & Francis , 2007
8. https://www.cseindia.org/understanding-eia-383
9. https://www.sciencedirect.com/science/article/pii/S0195925513000760
10. https://www.adb.org/sites/default/files/project-documents/43253/43253-026-eia-en.pdf

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Analyze the environmental effects of proposed development projects	U, An	PSO1, PSO3
CO-2	Develop skills in identifying the problems related to proposed local projects	An	PSO3
CO-3	Participate in EIA report preparation teams	Ap	PSO4
CO-4	prepare an environmental impact assessment report	Ap	PSO6
CO-5	Evaluate the benefits and costs of a proposed nearby project	E	PSO2

R-Remember, U-Understand, Ap-Apply, An-Analyze, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
1	Analyse the environmental effects of proposed development projects	PSO 1, PSO3	U	C, P	L	
2	Develop skills in identifying the problems related to proposed local projects	PSO 3	An	P	L	
3	Participate in EIA report preparation teams	PSO 4	U	P	L	
4	prepare an environment impact assessment report	PSO 6	An	P	L	
5	Evaluate benefits and costs of a proposed nearby project	PSO2	U,An	P	L	

F-Factual, C- Conceptual, P-Procedural, M-Meta cognitive

Mapping of COs with PSOs and POs:

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	-	3	-	-	-	3	2	-	-	2	3
CO 2	-	-	3	-	-	-	3	2	1	-	2	3
CO 3	-	-	-	3	-	-	-	3	3	3	3	2
CO 4	-	-	-	-	-	2	3	3	2	1	3	2
CO 5	-	3	-	-	-	-	3	2	3	2	2	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly/Low
2	Moderate/Medium

3	Substantial/High

Assessment Rubrics:

- Quiz /

- Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics:

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	√	√		√
CO 2			√	√
CO 3		√	√	√
CO 4	√	√		√
CO 5		√		√

SEMESTER VI

		Discipline Specific Core		
6	UK6DSCECO300	Econometrics -I	DSC	300-399
	UK6DSCECO301	Development Economics	DSC	
	UK6DSCECO302	International Economics -II	DSC	300-399
	UK6DSCECO303	Economics of Disaster Management	DSC	300-399
	UK6DSCECO304	Operations Research	DSC	300-399
	UK6DSCECO305	Mathematical Economics	DSC	300-399
		Discipline-Specific Elective (can select two)		
6	UK6DSEECO300	Kerala Economy	DSE	300-399
	UK6DSEECO301	Financial Econometrics	DSE	300-399
	UK6DSEECO302	Gender Economics	DSE	300-399
		Skill Enhancement Course (can select one)		
6	UK6SECECO300	Introduction to Academic Writing in Social Science	SEC	300-399
	UK6SECECO301	Data Analysis in Spreadsheet and R	SEC	300-399

Discipline Specific Core

University of Kerala

Discipline	ECONOMICS				
Course Code	UK6DSCECO300				
Course Title	Econometrics-I				
Type of Course	DSC				
Semester	VI				
Academic Level	300-399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4	-	-	4
Pre-requisites	Basic understanding of statistics and mathematical economics				
Course Summary	The course aims at creating conceptual clarity and analytical skills concerning basic econometrics and research methodology.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Nature and Scope of Econometrics**	10
	1	What is econometrics- Econometric models- aims and methodology of econometrics- Types of Data- Time Series, Cross Section- Panel data	
	2	Sample Regression Function and Population Regression Function- Significance of stochastic disturbance term	
	3	Point and interval estimation- Confidence interval- Estimation of Population Parameters	
	4	Testing of hypothesis- type 1 and type 2 errors	
II		**Model Estimation**	12
	5	Simple Linear Regression Model: Two Variable- Case Estimation of model by method of ordinary least squares	
	6	Properties of estimators- ANOVA- goodness of fit; scaling and units of measurement	
	7	Gauss-Markov theorem; forecasting	
III		**Multiple Linear Regression Model**	15
	8	Estimation of parameters; properties of OLS estimators	
	9	Goodness of fit - R2 and adjusted R	
	10	Partial regression coefficients; testing hypotheses – individual and joint; functional forms of regression models	
	11	Qualitative (dummy) independent variables	
IV		**Violation of CLRM assumptions**	15
	12	Heteroscedasticity- Consequences, Detection and Remedies	
	13	Autocorrelation- Consequences, Detection and Remedies	
	14	Multicollinearity- Consequences, Detection and Remedies	
	15	Specification errors- Omission of a relevant variable; inclusion of irrelevant variable; tests of specification errors.	
V		**Case studies**	8
	16	**Application of simple and multiple regression models using GRETL and interpreting the result**	

Readings

1. Jay L. Devore, Probability and Statistics for Engineers, Cengage Learning, 2010.
 2. John E. Freund, Mathematical Statistics, Prentice Hall, 1992.
 3. Richard J. Larsen and Morris L. Marx, An Introduction to Mathematical Statistics and its Applications, Prentice Hall, 2011.
 4. D. N. Gujarati and D.C. Porter, Essentials of Econometrics, McGraw Hill, 4th edition, International Edition, 2009.
5. Christopher Dougherty, Introduction to Econometrics, Oxford University Press, 3rd edition, Indian edition, 2007.
6. William J Goode and Paul K Hatt (1981): Methods in Social Research- McGraw-Hill.

7. Cotton, R., Learning R(2013): A step by step function guide to data analysis. 1st edition. O'reilly Media Inc.

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Create an understanding among the students on basic econometric methodology	U	PSO-1,2
CO-2	To equip students to estimate linear models using OLS and make inferences about population parameters	An, E	PSO- 2,3, 6
CO-3	Apply multiple regression to empirical data	Ap, E	1,2,3
CO-4	Explore techniques for detecting violations and evaluate model validity	Ap,E	1,3
CO-5	Applying OLS to real world data	E, C	PSO-1, 2

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture:Tutorial:Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Create an understanding among the students on basic econometric methodology	PO-1, 2 PSO-1,2	U	F, C		
CO-2	To equip students to estimate linear models using	PO-1, 2, 3 PSO-	An, E	C, P		

	OLS and make inferences about population parameters	2,3,6			
CO-3	Apply multiple regression to empirical data	PO-1, 2, 3 PSO-1,2, 3	Ap, E	C, P	
CO-4	Explore techniques for detecting violations and evaluate model validity	PO-1, 2, 3 PSO-1,3	Ap, E	P, M	
CO-5	Applying OLS to real world data	PO-1, 2, 3 PSO-1,2	E, C	C, P	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO1	PSO 2	PSO 3	PSO4	PS O5	PSO 6	PO1	PO2	PO3	PO4	PO 5	PO6
CO 1	2	3	-	-	-	-	2	3				
CO 2		1	3	-	-	2	1	2	3			
CO 3	2	1	3	-	-		2	3	1			
CO 4	3	-	2		-		1	3	2			
CO 5	2	3	-	-	-	-	2	3	1			

CO 6	-	-	-		-	-							

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics:

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4		✓		✓
CO 5		✓		✓
CO 6				

University of Kerala

Discipline	ECONOMICS				
Course Code	UK6DSCECODSC301				
Course Title	DEVELOPMENT ECONOMICS				
Type of Course	DSC				
Semester	VI				
Academic Level	300-399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-		4
Pre-requisites	knowledge of the basic concepts, issues, theories, and growth models				
Course Summary	This course provides an understanding of basic economic growth and development issues in a developing economy. It equips students to know about the different measures, theories, and models to evaluate economic development.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Concepts and Measures of Development**	**15**
	1	Basic concepts- Economic growth, Economic Development, World Bank Classification of Countries; Low, Lower Middle, Upper Middle, and High-Obstacles to development-Development gap- Concept of Sustainability; Sustainable Development Goals	
	2	Dialogues in development-Views of Amartya Sen, Abhijit Banerjee, Claudia Goldin, Thomas Piketty	
	3	Tools for measuring economic development; GNP, Per Capita Income, PQLI, HDI, GDI, GEM, Happiness Index, Global Hunger Index	
II		**Issues in Economic Development**	**12**

	4	Poverty; Absolute, Relative, and Extreme Poverty, Vicious circle of poverty, Poverty Line, Head Count Ratio, Poverty Gap, , Human Poverty Index (HPI), Multidimensional Poverty Index (MPI)	
	5	Inequality- meaning, Lorenz curve, Gini coefficient, Inverted U-Hypothesis-Kuznets Ratio	
	6	Inclusive Development Paradigm - economic, social and sectoral inclusion	
III		**Growth Models**	**15**
	7	Classical Theories of Growth- Adam Smith, Karl Marx	
	8	Models of Growth- Schumpeter's model, Harrod- Domar model, Solow Model, Joan Robinson model	
	9	Endogenous Growth models; Romar, Lucas	
IV		**Theories of Economic Development**	**13**
	10	Development theories- Lewis Theory of Unlimited Supply of Labour, Leibenstein's Critical Minimum Effort Thesis, Balanced and Unbalanced Growth Theories, Dualistic theories	
V		**Development Economics in Practice- Case Studies** (This Module includes a set of case studies any of which each student is required to do)	**5**
	11	Find the contributions of Nobel Laureates to tackle the issues about economic development	
	12	Identify a region of your choice, study the issues about development and suggest suitable measures to overcome it	
	13	Analyze the development experiences of India during the pre and post liberalization period	

Readings

1. A. P Thirwall (2006), Eighth edition, Growth and Development with Special Reference to Developing countries, McMillan, New Delhi

2. Amartya Sen, (1999) Development as Freedom, Oxford University Press

3. Debraj Ray, Development Economics, Oxford University Press, 2009

4. Gerald M. Meier, James E Rauch (2005); Leading Issues in Economic Development, OUP, USA

5. International Institute of Social Studies; 'Amartya Sen, Social Theorizing and Contemporary India' (2020) , Working Paper No. 658

6. M.L. Taneja, R.M Myer (2017); Economics of Development and Planning,15th edition, Vishal Publishing Co.

7. Subrata Ghatakh (2003), Introduction to Development Economics, Routledge

8. Todaro and Smith, Economic Development, Pearson Education, New Delhi
9. B.K Patnaik (2016); Introduction to Development Studies, Sage Publications
10. https://iiep.gwu.edu/research/publications/working-papers/development-economics/
11. https://ocw.mit.edu/courses/14-771-development-economics-fall-2021/pages/readings/

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the basic concepts related to economic growth and development	U	1,2,4
CO-2	Applying different tools for measuring economic growth and development	An, Ap, E	1,2,3
CO-3	Analyse the significant growth models and theories of development	U, An, E	1,2
CO-4	Apply the tools and theories of development in order to examine the development experience of our country and state	E, Ap, C	1,2,3,6

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture:Tutorial:Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understand the basic concepts related to economic growth and development	PO-1 PSO-1,2,4	R, U	C	L	-
CO-2	Applying different tools for measuring	PO-1,2,3,7 PSO-	Ap, An, E	F, P, M	L	-

	economic growth and development	1,2,3					
CO-3	Analyse the significant growth models and theories of development	PO-1,2,7 PSO- 1,2	U, An, E	C, P, M	L	-
CO-4	Apply the tools and theories of development in order to examine the development experience of our country and state	PO-1,2,7 PSO- 1,2,3,6	E, Ap, C	F, P, M	L	-

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs:

	PSO 1	PSO 2	PSO 3	PSO4	PS O5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	3	2	-	1	-	-	3	2	1	-	-	-	-
CO 2	1	3	2	-	-	-	3	2	1	-	-	-	-
CO 3	1	3	2	-	-	-	1	3	2	-	-	-	-
CO 4	-	1	3	-	-	2	-	-	2	-	-	3	1

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics:

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓	✓		✓
CO 2	✓	✓		✓
CO 3	✓	✓		✓
CO 4		✓	✓	

University of Kerala

Discipline	ECONOMICS				
Course Code	UK6DSCECO302				
Course Title	INTERNATIONAL ECONOMICS-II				
Type of Course	DSC				
Semester	VI				
Academic Level	300 - 399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	An understanding of basic concepts in International Economics				
Course Summary	The course provides an in-depth knowledge of International Economics. It makes the students aware of the database of world trade and India's BOP				

Detailed syllabus:

Module I	Unit	**Balance of Payments**	**15 Hrs**
	1	BOP- Components of BOP-trade balance- Invisibles- BOP disequilibrium (Surplus & Deficit)- Causes-measures to correct disequilibrium- automatic and deliberate measures- devaluation-effects of devaluation-Elasticity approach-Marshall Lerner-condition- J curve effect- absorption approach-	
	2	Policy tools for BOP management-Fiscal and Monetary policy-Mundell- Fleming Model.	
Module II		**Exchange rate**	**15 Hrs**
	3	Foreign exchange market- exchange rate- fixed and floating exchange rate- managed float- nominal and real exchange rate-determination of exchange rate- mint parity theory-purchasing power parity theory-BOP theory-Exchange rate changes-(Devaluation, Revaluation, Depreciation, Appreciation)	

	4	foreign exchange management- foreign exchange risk-hedging and speculation-spot rate- forward rate-SDR	
Module III		**International Finance**	**10 Hrs**
	5	Financial globalization: opportunities and risks-International bond market- international capital budgeting- Funding and risk management-international capital flows: its classification	
	6	International financial institutions: IMF, IBRD, IDA, UNCTAD, ADB, WTO- India and International financial institutions and FII in India	
ModuleIV		**Trade Policy & Economic Integration**	**12 Hrs**
	7	Free trade - Arguments for and against free trade – Protection - Arguments for and against protection - Methods of Trade Restriction: Tariff and non-tariff trade barriers - Types of tariffs – New protectionism - export subsidy and countervailing duties- Dumping and anti-dumping duties-Free trade area	
	8	Economic Integration-Customs Union- European Union-Brexit– Trade agreements- NAFTA, ASEAN, SAARC.	
Module V		**Activity**	**08 Hrs**
		Students should make an analysis of BOP and Foreign Investment flow Statistics of India. They can compare the trade performance of India with other developed countries 1. https://www.imf.org/en/Publications/WEO/weo-database/2024/April 2. https://data.imf.org/?sk=7a51304b-6426-40c0-83dd-ca473ca1fd52	

Reading List

1) Carbaugh, R J (2008) - International Economics, (11th Edition) Thomson South Western, New Delhi

2) Soderstein BO and Geffry Reed, (2006) International Economics, Palgrave, Mc Milan

3) Salvatore, D (2008) - International Economics, (8th Edition). Wiley India, New Delhi

4) Krugman P R and Obsfeild M (2009) - International Economics- Theory and Policy, (8th Edition) Pearson, Dorling Kindersley (India) Pvt. Ltd, New Delhi

5) Krugman P R., Obsfeild M and Melitz, Marc J., (2018), International Finance: Theory and Policy, 11th Edition, Pearson, UK.

6) Kindleberger, C P -International Economics (1973) Routledge, London.

7) Appleyard D. R and Field A J (2014) -International Economics (8th Edition), McGraw Hill, New Delhi.

8) Richard E Caver and Harry G Johnson, (1968), Readings in International economics, George Allen and Unwin, London,

9) Grimwade Nigel (2001), International Trade, (Second Edition), Routledge, London.

10) Haberler G (1961), A Survey of International Trade Theory, International Finance Section, .Department of Economics, Princeton University.

11) Reinert K A (2012), An Introduction to International Economics, Cambridge University Press, New York.

12) Gandolfo, Giancarlo,(2016), International Finance and Open Economy Macro economics, Springer.

13) Gandolfo, Giancarlo,(2014), International Trade Theory and Policy, Springer

14) Levi, Maurice D, (2009), International Finance, Fifth Edition, Routledge, London and New York

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the concept of exchange rates in international trade	U	PSO-1
CO-2	Apply changing dynamics in exchange rate mechanism	Ap	PSO-2
CO-3	Acquire knowledge on International Institutional environment	U	PSO-1
CO-4	Evaluate the trade flows of the country	E	PSO-2
CO-5	Analyse the investment flow statistics of India	An	PSO-3

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: International Economics Credits: 4:0:0 (Lecture:Tutorial:Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
1	CO-1	PSO-1	U	F	L	-
2	CO-2	PSO-2	Ap	C	L	-
3	CO-3	PSO-1	U	P	L	-
4	CO-4	PSO-2	E	M	L	-
5	CO-5	PSO-3	An	M	L	-

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	1	1	1	-	-	-	3	-	-	-	-	3
CO 2	3	2	2	-	-	-	3	2	-	1	-	3
CO 3	1	1	1	-	-	-	3	-	-	-	-	-
CO 4	3	3	2	-	-	-	3	2	-	-	-	3
CO 5	3	2	2	-	-	-	3	2	-	-	-	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics:

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓	✓		✓
CO 3	✓		✓	✓
CO 4	✓	✓		✓
CO 5	✓	✓	✓	✓

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University of Kerala

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Discipline	ECONOMICS				
Course Code	UK6DSCECO303				
Course Title	ECONOMICS OF DISASTER MANAGEMENT				
Type of Course	DSE				
Semester	VI				
Academic Level	300-399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	Basic Understanding of Economics				
Course Summary	The course provides a thorough grasp of the economic aspects of disasters and how to manage them effectively. It examines the economic consequences of various natural and human-induced disasters, impacting sectors such as agriculture, industry, infrastructure, and employment. The curriculum includes topics such as evaluating risks, implementing measures to reduce them, planning emergency responses, and facilitating recovery post-disaster, all from an economic standpoint. Using case studies and simulations, students learn to evaluate the economic ramifications of different disaster scenarios and devise strategies for bolstering resilience and promoting sustainable recovery.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Definition and Types of Disaster**	10
	1	Hazards and Disasters	
	2	Risk and Vulnerability in Disasters	
	3	Natural and Man-made disasters	
	4	Earthquakes, floods drought, landslide, land subsidence, cyclones, volcanoes, tsunami, avalanches	
	5	Global climate	
	6	Forecast and early warning dissemination	
	7	Preparedness and mitigation measures- Prevention measures	
II		**Risk - Vulnerability and Measurement Analysis**	12
	7	Risk: concept and analysis	
	8	Risk Reduction	
	9	Vulnerability : Its concept and analysis	
	10	Strategic Development for Vulnerability Reduction	
	11	Vulnerability Profile of India	
	12	Basic principles of disasters management, Disaster Management cycle	

	13	Disaster management policy, National and State Bodies for Disaster Management	
	14	Early Warming Systems, Building design and construction in highly seismic zones, retrofitting of buildings.	
III		**Economic and Public Policy Institutional Mechanisms**	**14**
	13	Financial planning for disaster management implementation Programmes	
	14	Economic consequences of disaster management	
	15	Financial recovery from disaster-disaster insurance	
	16	Disaster relief arrangements	
	17	Disaster Management Act 2005 -Funding for Disaster Management	
	18	Capacity building	
	19	Setting up EOCs at state, district and block levels; Raising National/State Disaster Response Force	
	20	Training and Capacity building of all stakeholders	
	21	National Institute of Disaster Management (NIDM)	
IV		**Rehabilitation, Reconstruction and Recovery**	**12**
	22	Reconstruction and Rehabilitation as a Means of Development	
	23	Damage Assessment	
	24	Post Disaster effects and Remedial Measures	
	25	Creation of Long-term Job Opportunities and Livelihood Options	
	26	Disaster Resistant House Construction	
	27	Sanitation and Hygiene -Education and Awareness	
	28	Dealing with Victims' Psychology	
	29	Long-term Counter Disaster Planning	
	30	Role of Educational Institutes	
V		**Social Welfare Activities /Report Writing**	**12**
	31	To prepare an assignment or report based on a natural disaster that occurred in the nearby local area. Or To assist relief organizations by locating survivors, providing first aid, collecting donations, and offering comfort to victims.	

Basic Readings

1. S.C. Sharma, Disaster Management, Khanna Book Publishing CO. (P) Ltd, New Delhi

2. Disaster Management in India, Ministry of Home Affairs, Government of India

3. Charlotte Benson, and Edward J. Clay. 2004. Understanding the Economic and Financial Impacts of Natural Disasters. The World Bank. Disaster Risk Management Series No. 4

4. Dave, R.K. (2018) , Disaster Management in India : Challenges and Strategies

5. Natural Hazards, Bryant Edwards (2005), Cambridge University Press, U.K.

6. Natural Disaster, Sharma, R.K. & Sharma, G. (2005), (ed) APH Publishing Corporation, New Delhi

Additional Readings

4. Quarentelli E.L. (1998): What is a disaster? Routledge.
5. Disaster Management Guidelines, GOI-UND Disaster Risk Program (2009-2012)
6. Damon, P. Copola, (2006) Introduction to International Disaster Management, Butterworth Heineman.
7. Murthy D.B.N. (2012) Disaster Management, Deep and Deep Publication PVT. Ltd. New Delhi.
8. Modh S. (2010) Managing Natural Disasters, Mac Millan publishers India LTD.

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the fundamental concepts and types of disasters	R, U	PSO-1 PSO-4
CO-2	Understand the basic risks related concepts and its analysis	U,An	PSO-3 PSO-4
CO-3	Evaluate the public and economic policies	E	PSO-2
CO-4	Examine the remedial measures and planning	E,U	PSO-5
CO-5	Evaluation and report writing	C,E	PSO-3 PS0-6

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create
Note: 1 or 2 COs/module

Name of the Course: Economics of Disaster Management

Credits: 4:0:0 (Lecture:Tutorial:Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understand the fundamental concepts and types of disasters	PO-1, PSO-1 PSO-4	R, U	C,F	L	-

CO-2	Understand the basic risks related concepts and their analysis	PO-2, PSO-3 PSO-4	U,An	P, M	L	-
CO-3	Evaluate the public and economic policies	PO-1 PSO-2	E	P	L	-
CO-4	Examine the remedial measures and planning	PO-5 PO-2, PSO-3	E,U	P, M	L	-
CO-5	Evaluation and report writing	PO-8 PSO-3 PSO-6	C,E	P,M	L	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PO 1	PO2	PO3	PO4	PO5	PO6	PO 7	PO 8
CO 1	3	-	-	3	-	-	3	-	-	-	-	-	-	-
CO 2	-	-	3	2	-	-	-	3	-	-	-	-	-	-
CO 3	-	3	-	-	-	-	-	1	-	-	-	-	-	
CO 4	-	-	3	-	-	-	1	2	-	-	3	-	-	-
CO 5	-	-	1	-	-	3		-	-	-	-	-	-	8

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics:

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓	-	-	✓
CO 2	✓	✓	-	✓
CO 3	✓	✓	-	✓
CO 4	-	✓	-	✓
CO5	-	✓	✓	✓

University of Kerala

Discipline	ECONOMICS
Course Code	UK6DSCECO304
Course Title	OPERATIONS RESEARCH
Type of Course	DSC
Semester	VI
Academic Level	300 - 399

Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4

Pre-requisites	Basic Knowledge of Economics and Mathematics
Course Summary	The course introduces Operations Research, which combines insights from business economics and mathematics to understand various decision-making situations in business and apply operations research techniques in an industrial context. The course covers linear programming problems, transportation problems, assignment problems, game theory, and network analysis.

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Introduction to Operations Research**	**10**
		Operations Research-Definition-Scope and Importance in Decision Making. Models of Operations Research-Methodology of Operations Research-Limitations.	
II		**Linear Programming**	**15**
		Introduction-Formulation of LPP-Graphical Solutions-Maximisation and Minimisation using Simplex Method-Dual (Concept Only)	
III		**Transportation and Assignment Problems**	**15**
		Introduction-Initial Basic Feasible Solution-NWC Method-Least Cost Method-Vogel's Method for finding initial solution. Assignment Problem-Formulation-optimal Solution-Hungarian Algorithm.	
IV		**Theory of Games and Network Analysis.**	**15**
		Introduction-Minimax and Maximin Criterion-Optimal Strategy-Saddle Point-Solutions of games with pure strategy. Network Analysis-Critical Path Minimum -deterministic model--Project Evaluation Review Technique-probabilistic model	
V		**Application and Analysis**	**5**
		This module aims to apply the concepts learned in the previous modules to analyze real-world economic scenarios. Students will engage in various activities (Case Studies Analysis/ Problem-solving Sessions) designed to	

		deepen their understanding of the tools and their applications in economics**.	

Reading List

1. Hamdy A. Taha: Operations Research-An Introduction, Prentice Hall, 9th Edition, 2010. 4.
2. Ravindran, D. T. Phillips, and James J. Solberg: Operations Research- Principles and Practice, John Wiley & Sons, 2005.
3. Kanti Swarup, Gupta.P.K. & Man Mohan, operations Research, S.Chand & Sons

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understanding the scope, importance, methodology, and limitations of Operations Research.	U, R	PSO-1
CO-2	Develop problem-solving skills in business	An, E	PSO-3
CO-3	Analyse and obtain optimum solutions.	An, E	PSO-4
CO-4	Evaluate and make decisions in a business and industry context.	E	PSO-5

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
1	Understanding the scope, importance, methodology, and limitations of Operations Research.	PSO-1 PO-1	U, R	F, C	L	

2	Develop problem-solving skills in business	PSO-3 PO-1,2	An, E	C, P	L	
3	Analyse and obtain optimum solutions.	PSO-4 PO-2	An, E	P, M	L	
4	Evaluate and make decisions in a business and industry context.	PSO-4,5 PO-2,7	E, C	P, M	L	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs:

	PSO 1	PSO 2	PSO 3	PSO4	PSO5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	3	-		-	-	-	3						
CO 2	-	-	3	-	-	-	3	3					
CO 3	-	-		2	-	-		2					
CO 4	-	-		3	3	-		3					3
CO 5	-		-	-	-	-							
CO 6	-	-	-		-	-							

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics:

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4		✓		✓
CO 5		✓		✓
CO 6			✓	

Discipline	ECONOMICS
Course Code	UK6DSCECO305
Course Title	MATHEMATICAL ECONOMICS
Type of Course	DSC
Semester	VI
Academic Level	300 - 399

Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-		4

Pre-requisites	1. A foundation in calculus is essential for understanding the mathematical concepts and techniques used in economic analysis. 2. Prior knowledge of microeconomic and macroeconomic principles is important for grasping the economic theories and models covered in the course.
Course Summary	This course aims to provide students with a comprehensive understanding of economic theories through mathematical exposition and derivation of equations. By exploring concepts such as optimization, equilibrium analysis, consumer and firm behaviour, and market dynamics, students will develop the ability to articulate economic theories using mathematical language and logical reasoning. Through detailed derivations and mathematical analysis, students will gain insight into the underlying principles of economic models and their applications. By the end of the course, students will be equipped with the analytical skills to interpret and critically evaluate economic theories based on mathematical foundations.

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Introduction to Mathematical Economics**	**12**
	1	Nature of Mathematical Economics - Mathematical Vs Nonmathematical Economics - Mathematical Economics Vs Econometrics	
	2	Economic Model - Ingredients of a Mathematical Model - Variables, Constants and Parameters - Equations and Identities	
	3	Static (Equilibrium Analysis) -The Meaning of Equilibrium - Partial Market Equilibrium – A Linear Model - A Nonlinear Model - General Market Equilibrium	
	4	Keynesian National Income Model	
	5	Domar Economic Growth Model	
	6	The Cobweb Model	
II		**The Mathematics of Optimisation**	**12**
	7	Maximisation of a function of one variable- Optimum Values and Extreme Values - Relative Maximum and Minimum- First Derivate Test - Second and Higher Derivatives - Second Derivative Test – Necessary Vs Sufficient Conditions - Conditions for Profit Maximisation	

	8	The Case of More than One Choice Variable - The Differential Version of Optimisation Conditions - Extreme Values of a Function of Two Variables – First Order Condition and Second Order Condition	
	9	Convex and Concave Functions and Inflection Points	
III		**Theory of Consumer Behaviour**	**12**
	10	Cardinal and Ordinal Utility - Indifference Curve- Slope of Indifference Curve - Mathematical Derivation of Consumer's equilibrium, Consumer's Surplus, Slutsky Equation: Income and substitution effect	
	11	Measurement of Elasticities - Price Elasticity of Demand, Arc and Point Elasticity, Income Elasticity of Demand, Cross Elasticity of Demand, Price Elasticity of Supply. (numerical exercises)	
IV		**Theory of Firm's Behaviour**	**12**
	12	Isoquants- Slope of Isoquant - Mathematical Derivation of Producer's Equilibrium	
	13	Mathematical Expression of Production Function - Mathematical Relation between Average Productivity and Marginal Productivity	
	14	Homogenous Function – Linear Homogeneous Functions – Properties ; Cobb-Douglas Production Function- Testing Homogeneity	
	15	Marginal Productivity Theory of Distribution – Euler's Theorem	
	16	Cost Functions and Curves- Mathematical Relation between Average and Marginal Costs	
	17	Revenue Functions and Curves- Mathematical Relationship between Revenue Curves - Revenue Curves of the Firm under Perfect Competition and Imperfect Competition	
V		**Applied Economic Analysis**	**12**
		Theoretical and numerical problems so that a proper understanding of the key concepts and applications is achieved.	

Reference

- Chiang, A. C., & Wainwright, K. (2005). Fundamental Methods of Mathematical Economics (4th ed.). McGraw-Hill.
- Salvatore, D. (1974). Schaum's Outline of Microeconomics (4th ed.). New York, McGraw-Hill.
- *Henderson*, J.M. and *Quandt*, R.E. (1958) *Microeconomic Theory*: A Mathematical Approach. McGraw-Hill Book Company, Inc., New York.
- Simon, C. P., & Blume, L. (1994). Mathematics for Economists. W.W. Norton & Company.
- Mas-Colell, A., Whinston, M. D., & Green, J. R. (1995). Microeconomic theory. Oxford University Press.
- Dowling, E. T. (2009). Introduction to Mathematical Economics (3rd ed.). Schaum's Outlines, McGraw-Hill.
- Dixit, A. K. (1990). Optimization in Economic Theory (2nd ed.). Oxford University Press
- Varian, H. R. (2014). Intermediate Microeconomics: A modern approach (9th ed.). W.W. Norton & Company.
- Keating, B. P. (1985). Production and Cost Functions in the Theory of the Firm. Random House.

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the basic principles of mathematical economics, distinguishing it from non-mathematical approaches.	U	1,3
CO-2	Identify optimal values and extreme points using mathematical techniques.	Ap	1,3
CO-3	Understand and explain consumer behaviour through the mathematical analysis of consumer equilibrium and elasticity concepts.	U, An	1,3
CO-4	Apply mathematical models to analyze firm behaviour, including production, costs, and revenue under different market conditions.	Ap, An	1,3
CO-5	Develop and communicate mathematical models to analyze real-world economic problems in specific industries.	Ap, An, E, C	3,4,5,6

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture:Tutorial:Practical)

CO No.	CO	PO/ PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
1	Understand the basic principles of mathematical economics, distinguishing it from non-mathematical approaches.	1,3	U	C	L	
2	Identify optimal values and extreme points using mathematical techniques.	1,3	Ap	P	L	

3	Understand and explain consumer behaviour through the mathematical analysis of consumer equilibrium and elasticity concepts.	1,3	U, An	C	L	
4	Apply mathematical models to analyze firm behaviour, including production, costs, and revenue under different market conditions.	1,3	Ap, An	P		
5	Develop and communicate mathematical models to analyze real-world economic problems in specific industries.	1,3	Ap, An, E, C	C, P, M		

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs:

	PSO1	PSO2	PSO 3	PSO 4	PSO 5	PSO 6	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO 1	3	-	2	-	-	-	3	2	1	-	-	--	--	-
CO 2	2		3	-	-	-	2	3	1	-	-	-	-	-
CO 3	3	-	2	-	-	-	1	3	2	-	-	-	-	-
CO 4	3	-	2		-	-	2	2	2	1	-	-	--	-
CO 5	-	-	2	2	1	2	1	2	3	1	1	-	-	-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4	✓			✓
CO 5		✓		

Discipline Specific Elective

University of Kerala

Discipline	ECONOMICS				
Course Code	UK6DSEECO300				
Course Title	KERALA ECONOMY				
Type of Course	DSE				
Semester	VI				
Academic Level	300-399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	An understanding of Kerala's economic scenario at the formation of the state				
Course Summary	This course provides an in-depth understanding of the growth performance and development process of the state.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Economic Growth and Structure of Kerala Economy**	**10**
	1	Kerala Economy at a Glance – Features - Sectoral Composition of Kerala Economy- Growth Trends; GSDP, NSDP, and Per Capita Income Since Post Liberalization	
	2	Kerala's Development Experience (Kerala model of development); Sustainability, Challenges and Virtuous Cycle -HDI status-Nava Kerala Mission.	
	3	Decentralized planning in Kerala; performance and problems	
II		**Demographic and Socio-Economic Changes**	**10**
	4	Demographic Profile of Kerala; Transition, Birth rate, Death rate, IMR, MMR, TFR, Sex Ratio, Literacy Rate, Life Expectancy, Density of Population, Age Composition -Trends - Ageing Problem in Kerala	
	5	Migration- Recent Trends in Migration in Kerala; Emigration and In-Migration, Socio-Economic Issues and Impacts of Migration, Youth Migration	

	6	Indicators of poverty in Kerala; Trends-Employment and Unemployment in Kerala; Trends - Educated Unemployment in Kerala	
III		**Sector Wise Analysis-Agriculture, Industry& Service Sector in Kerala**	**18**
	7	Agricultural Scenario; Challenges and Prospects- Land-use Pattern and Cropping Pattern	
	8	Organic Farming in Kerala - Agriculture Credit and Indebtedness - Agriculture Marketing in Kerala	
	9	Industrialization in Kerala; Challenges and Issues - Role of institutions for promoting industrialization; KINFRA, KFC, K-BIP	
	10	MSMEs- Performance of State Public Sector Enterprises	
	11	Service Sector; Trends in Growth, Challenges, and Prospects- Education; GER, Drop-Out Ratio, Trends in Higher Education, Knowledge-Economy	
	12	Health sector in Kerala; Issues of Low mortality and High morbidity in Kerala, Health care finance- Epidemiological Transition	
	13	IT sector; Role and Performance-IT Mission - Tourism in Kerala; Role, Emerging Trends-Responsible tourism- Health & Medical tourism (concepts only). Infrastructure development -KIIFB.	
IV		**State Finances & Development Issues**	**10**
	14	State Finances of Kerala; Trends in Revenue & Expenditure - Mounting Public Debt - Fiscal Crisis in Kerala	
	15	Environment issues; Pollution, Climate Change - PolicyFrameworkforControllingIssues	
	16	Waste Management in the Emerging Economy of Kerala; GovernmentActivitiesandPolicy	
	17	Gender & Development; Gender Budgeting, Locating Gender in Kerala's Development Experience, Women Empowerment in Kerala: Role of Kudumbashree	
V		**Understanding Kerala Economy (Case Studies)**	**12**
	18	Prepare a SWOT analysis of any sector relating to Kerala's Economy	
	19	Do a field visit and prepare a report on organic farming practices in your locality	
	20	Prepare a case study on selected socio-economic issues concerning Kerala	
	21	Identify a tourist spot in a region of your choice and analyze the socio-economic issues about it.	

Reading List

1. Albin, A. (1990). Manufacturing sector in Kerala: Comparative study of its growth and structure. *Economic and Political Weekly*, 2059-2070.
2. Bhalla, R., & Meher, S. (2019). Education, employment and economic growth with special reference to females in Kerala. *The Indian Journal of Labour Economics*, *62*(4), 639-658.
3. Isaac, T., & PK, M. T. (1995). Kerala: towards a new agenda. *Economic and Political Weekly*, 1993-2004.
4. Kannan, K. P. (2023). Revisiting the Kerala 'Model'of Development: A Sixty-year Assessment of Successes and Failures. *The Indian Economic Journal*, *71*(1), 120-151.

5. Kerala State Planning Board (2024) Economic Review (2023)

6. Kannan, K. P. (1990). Kerala economy at the crossroads?. *Economic and Political Weekly*, 1951-1956.

7. Kannan ,K.P.(2022).*Kerala 'Model' of Development Revisited A Sixty-Year Assessment of Successes and Failures*. Working paper510, Centre for Development Studies

8. Nair, M. S. (2018). Human Development and Economic Growth in Kerala: Sustainability Issues. *Productivity*, *59*(1).

9. Oommen, M. A. (2010). Freedom, economic reform and the Kerala 'Model'. In *Development, Democracy and the State* (pp. 81-96). Routledge.
10. Prakash, B. A., & Alwin, J. (2023). *Kerala's economic development: Covid -19 Pandemic Economic crisis and Public Policy*,Pearson
11. Prakash, B. A., & Alwin, J. (2018). *Kerala's economic development: Emerging issues and challenges*. Sage Publications.
12. Rajan .K.(2009)*Kerala Economy: Trends During the Post Reform Period* .Serial Publications
13. Pillai N, V. (2008). Infrastructure, Growth and Human Development in Kerala.

14. Ramachandran, V. K. (2018). Economic planning in Kerala. *Critical Asian Studies*, *50*(1), 155-163
15. Saikia, D. (2015). Migrant workers in Kerala: a study on their socio-economic conditions. *Journal of Economic and Social Development*, *11*(2), 29-43.

16. Thomas, J. J. (2003). Labour and industrialisation in Kerala. *Indian Journal of Labour Economics*, *46*(4), 575-592.
17. Thomas, J. J. (2005). Kerala's industrial backwardness: a case of path dependence in industrialization?. *World Development*, *33*(5), 763-783.
18. Zachariah, K. C., & Irudaya Rajan, S. (2015). Dynamics of emigration and remittances in Kerala: Results from the Kerala migration survey 2014.
19. Zachariah, K. C., Mathew, E. T., & Rajan, S. I. (2001). Social, economic and demographic consequences of migration on Kerala. *International migration*, *39*(2), 43-71.

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Identify the structure of Kerala's economy	U, An	PSO-1,2
CO-2	Evaluate the demographic and socio-economic changes in Kerala	U, An	PSO-2,4
CO-3	Understand the performance and growth of the agriculture and industrial sector	U, Ap	PSO-2,4
CO-4	Acquire knowledge about the role and functioning of the service sector	U, An	PSO-2,4

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create
Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Identify the structure of Kerala's economy	PO-, 1,2 PSO-1,2	U	C, F	L	-
CO-2	Evaluate the demographic and socio-economic changes in Kerala's economy	PO-,1,2 PSO-1,2,4	U, An	C, F	L	-
CO-3	Understand the performance and growth of the agriculture and industrial sector	PO-1,2 PSO-1,2,4	R, U	F, M	L	-

| CO-4 | Acquire knowledge about the role and functioning of the service sector | PO- 1,2 PSO- 1,2,4 | R, An | F, M | L | - |

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs: Correlation Levels:

	PSO 1	PSO 2	PSO 3	PS O4	PSO 5	PSO 6	PO 1	PO2	PO 3	PO4	PO 5	PO 6	PO 7	PO 8
CO 1	3	3	-	-	-	-	3	3	-	-	-	-	-	-
CO 2	3	3	-	2	-	-	3	3	-	-	-	-	-	-
CO 3	3	3		2	-	-	3	3						-
CO 4	3	3		2	-	-	3	3						-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓	-	-	✓
CO 2	✓	✓	-	✓
CO 3	✓	✓	-	✓
CO 4	-	-	✓	✓

Discipline	ECONOMICS				
Course Code	UK6DSEECO301				
Course Title	Financial Econometrics				
Type of Course	DSE				
Semester	VI				
Academic Level	300-399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	Basic knowledge of Econometrics				
Course Summary	This course provides an in-depth understanding of econometric principles, equipping students with the tools to analyze complex time series and panel data				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		Introduction to Financial Econometrics	10
	1	Financial Econometrics - The Data Generating Process −	
	2	Time Horizon of Models – The Behavior of Financial Variables	
	3	Distributions of Returns − Multivariate Returns – Empirical Properties of Returns -	
	4	Challenges of Financial Econometrics-Predictive Models in Finance	
II		**Time Series Modelling**	15
	5	Modeling Univariate Time Series - Stationarity − ACF – AR - MA, ARMA, ARIMA − Unit Root Processes -Dickey Fuller Test	
	6	Time-varying Volatility Models - The ARCH Model - The GARCH Model - Lagrange Multiplier Test,	
	7	Multivariate Time Series Analysis- Cross-Correlation Matrices, Vector Autoregressive Models- Reduced and Structural Forms, Estimation and Forecasting with VAR Models, Impulse responses and variance decompositions, Vector Moving-Average Models	
III		**Co integration and Error Correction Models**	10
	9	Linear Combinations of Integrated Variables	
	10	Co-integration and Common Trends, Co integration and Error Correction	
	11	Testing for Co integration- Engle-Granger methodology, Johansen Test	
IV		**Application in the Financial Sector**	15
	12	Construction of the Portfolio - Different approaches to the evaluation of the portfolio, Composite forecast approach.	
	13	Modelling High Frequency Data − Data Sources and Filtering − Modelling the Time between Trades	

	14	Intraday Volatility and Forecasting Volatility − Bid–Ask Spread − Empirical Characteristics of Transactions Data − Models for Price Changes − Duration Models	
V		**Hands-on Exercises**	**10**
	15	Design and implement a predictive model in financial econometrics using historical data on returns, considering the data generating process, time horizon, distributions of returns, and empirical properties of financial variables.	
	16	Design and implement a time series analyses using historical financial data	
	17	Conduct a co-integration analysis between two relevant variables and assess the common trends between the variables over time.	
	18	Utilize historical high-frequency trading data from financial markets to construct a diversified investment portfolio using different evaluation methods such as mean-variance optimization or risk-return analysis.	

Readings

1. Damodar N Gujarati and Dawn C Porter (2009): Basic Econometrics, Fifth Edition, McGraw Hill International Edition.
2. Jeffrey M Wooldridge (2018): Introductory Econometrics: A Modern Approach, 7 th Edition, Thomson South Western.
3. Walter Enders (2013) Applied Econometric Time Series, 3rd Edition, Wiley, ISBN- 10: 8126543914,
4. James D Hamilton Time Series Analysis (1994) Princeton University Press
5. Stock and Watson 'Introduction to Econometrics', Pearson
6. Brooks, Christopher (2002), Introductory Econometrics for Finance, Cambridge University Press.
7. Campbell, Lo and Mackinlay (1997), The Econometrics of Financial Markets, Princeton University Press.
8. Gourieroux, Christian and Jasiak, Joann (2001), Financial Econometrics, Princeton UniversityPress.
9. Studenmund, A. H. (2010), Using Econometrics: A Practical Guide, 6th Ed., Addison-Wesley.
10. Tsay, Ruey S. (2002): Analysis of Financial Time Series, Wiley Series in Probability and Statistics.

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Master the intricacies of financial econometrics	An, Ap	1,2,3
CO-2	Gain proficiency in time seriesmodeling	E, C	1,2,6

CO-3	Analyze time series data for co-integration and error correction	Ap, An, C	1,2,3
CO-4	Develop advanced skills in constructing investment portfolios using different evaluation approaches and composite forecast techniques	E	1,2,3

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture:Tutorial:Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Master the intricacies of financial econometrics	PO- 1,2,3 PSO- 1,2,3	An, Ap	C,P		
CO-2	Gain proficiency in time series modeling	PO- 2,3 PSO- 1,2,6	E, C	P		
CO-3	Analyze time series data for co-integration and error correction	PO- 2,3,7 PSO- 1,2,3	Ap, An, C	P,M		
CO-4	Develop advanced skills in constructing investment portfolios using different evaluation approaches and composite forecast techniques	PO- 1, 2,3 PSO- 1,2, 3	E	C,P		

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO4	PSO5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	2	1	3	-	-	-	1	3	2				
CO 2	2		3	-	-	1		3	2				
CO 3	1	2	3	-	-	-		3	1				2
CO 4	1	2	3		-	-	1	3	2				

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4		✓		✓

Discipline	ECONOMICS				
Course Code	UK6DSEECO302				
Course Title	Gender Economics				
Type of Course	DSE				
Semester	VI				
Academic Level	300 - 399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	Basic understanding of economics				
Course Summary	The course focuses on development economics in a gender perspective. It surveys various gender dimensions of economic development with the aim that students will gain a fundamental theoretical understanding of development economics as well as gender economics.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Introduction to Gender Economics**	15
	1	Nature and methods of gender economics-Economic growth and gender equality- System of gender equality status.	
	2	Gender factor in household economics- Distribution of resources and decision-making mechanisms in households	
	3	Demographic changes and Gender status- Gender factor of demographic development. Gender shift and demographic development. Gender statistics -Women's contribution to GDP.	
	4	Gender policy: National, global and regional- gender inequality indicators.	
II		**Gender division of labor**	15
	5	Gender inequality in the labor market- entry into and exit from the labour market, careers, wages, skills training. Factors in wage disparities.	
	6	Economic growth and gender equality. Globalization of the world economy and gender status.	
	7	Women in organised and unorganized sector-Work participation Rate-Feminization of poverty.Gender measurement of migration.	
III		**Gender Discrimination**	10

	8	Gender discrimination -Types &causes: Age, sexual, Religious	
	9	National issues related to the third gender- Issues of the rights of sexual minorities and transgender- Article 377.	
	10	Policies and Acts related to Gender discrimination (The Criminal Law (Amendment) Act, 2013	
	11	Beti Bachao Beti Padhao(BBBP), Mahila Shakti Kendra, Working Wome Hostel(WWH), Scheme for Adolescent Girls, Rastriya Mahila Kosh(RMK)	
IV		**Engendering in the Social, Political, and Economic Context**	**15**
	12	Concept of Engendering- Strategic gender needs- Practical gender needs-	
	13	Gender budgeting- Gender Auditing- Main principles of gender review of socio-economic and demographic development of countries and regions	
	14	Gender-sensitive approaches to development: Welfare, equity, anti-poverty, efficiency, and empowerment.	
V		**Case works**	**5**
	15	Using different data sets like PLFS data issues like women's work participation rates can be analysed.	

Reading List

1. Babcok, Linda and Sara Laschever (2003), Women Don't Ask: Negotiations and Gender Divide. Princeton University Press: Princeton

2. Benaria, Lourdes (2003) Gender Development and Globalisation: Economics as if All People Mattered, Routledge: New York

3. Blau, Francine D, Anne E Winkler and Marianne A Ferber (2009) The Economics of Women, Men and Work, Prentice Hall

4. Boserup, Ester (2007), Women's Role in Economic Development, George Allen and Unwin, London.

5. Ghosh Jayati (2009) Never Done and Poorly Paid: Women's Work in Globalizing India, New Delhi, Women Unlimited, 2009.

6. Hoffman, Saul D and Susan Averett (2010) Women and the Economy: Family, Work and Pay, Prentice Hall

7. Kabeer, Naila (1995) Reversed Realities: Gender Hierarchies in Development Thought, Verso: London 1995

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the subject and methods of Gender Economics.	R, U	PSO-1
CO-2	Critically evaluate different perspectives on gender-related discrimination.	An, E	PSO-2,3
CO-3	Analyse Strategic gender needs and the approaches to development	An, E	PSO-2,3,4
CO-4	Critically evaluate policies at the regional, national, and global levels.	An ,E	PSO-4,6

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture:Tutorial:Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understand the subject and methods of Gender Economics.	PO-1 PSO-2,3	R,U	F, C	L	

CO-2	Critically evaluate different perspectives on gender-related discrimination	PO-2,3 PSO-2,3	An,E	P, M	L	
CO-3	Analyse Strategic gender needs and the approaches to development	PO-1,2,8 PSO-2,3,4	An,E	P, M	L	
CO-4	Critically evaluate policies at the regional, national, and global levels	PO-1,2,8 PSO-4,6	An. E	P, M	L	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO4	PS O5	PSO 6	PO1	PO2	PO 3	PO 4	PO 5	P O 6	PO -7	P O - 8
CO 1		3	3	-	-	-	3							
CO 2		3	3	-	-	-		3	3					
CO 3	-	3	3	3	-	-	3	3	3					
CO 4	-			3	-	3	3	3						3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4	✓	✓		✓

Skill Enhancement Course

University of Kerala

Discipline	ECONOMICS				
Course Code	UK6SECECO300				
Course Title	INTRODUCTION TO ACADEMIC WRITING IN SOCIAL SCIENCE				
Type of Course	SEC				
Semester	VI				
Academic Level	300 - 399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	3	3 hours	-	-	3
Pre-requisites	1. While no prior experience in academic writing is assumed, students should have a basic command of written English. This includes understanding sentence structure, grammar, and spelling. Familiarity with word processing software such as Microsoft Word or Google Docs is also helpful. 2. Students should demonstrate an interest in social sciences and an eagerness to explore academic writing within this field. A curiosity about social phenomena and a desire to engage critically with research literature will enhance the learning experience.				
Course Summary	This course teaches social science students essential academic writing skills, including the formal writing process, literature review techniques, and research proposal development. Practical activities and interactive sessions provide hands-on experience in drafting research papers and conducting ethical peer reviews. Students also learn about academic publishing ethics and the peer review process. By the course's end, students will have a strong foundation in academic writing and research methodology, enabling them to effectively communicate ideas and contribute meaningfully to the social sciences.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Elements of Academic Writing**	**9**
	1	Academic Writing – Distinctive Features of Academic and Non-Academic Writing	

	2	Formal Academic Writing Process - Essays, research papers, book review, textual analysis, case study, literature review, project report, proposals and dissertation/ thesis	
	3	Approaches to Academic Writing - expository- descriptive-persuasive-analytical-critical/evaluative- narrative/reflective.	
	4	Understanding the Audience: Definition- Types of Audiences.	
		Integration of Examples: Incorporate examples specific to the field of social science to make the content more relevant to students' interests and studies. *Interactive Activities: Include interactive activities or exercises to allow students to practice different types of academic writing and receive feedback.*	
II		**Literature Review and Formulating the Research Question**	**7**
	5	Writing Reviews of Academic Literature – An Overview	
	6	Selection of Topic for Study and Identifying Literature for Review – General Guidelines for Analyzing Literature	
		The Writing Process – Writing for a Specific Purpose – Planning to Write- Organising Your Thoughts and Notes – Drafting, Editing and Redrafting	
	7	Research Question- Narrowing a topic into a Research Question	
		Practical Application: Provide examples of literature reviews and research questions related to social science to help students understand how to apply these concepts in their field of study. *Hands-on Exercises: Incorporate hands-on exercises where students practice conducting literature reviews and formulating research questions based on provided prompts or topics relevant to social science.*	
III		**Writing a Formal Research Paper in the Social Sciences**	**9**
	8	Writing a research paper – General Guidelines .	
	9	American Psychological Association (APA) Format- General Format - Referencing the Works of Others Within a Paper- In-text Citation: Parenthetical and Narrative Citations- Reference List	
	10	Format- Title Page – Abstract – Introduction- Method- Results-Discussion – References – Tables and Figures	
	11	Academic Style and Citation Styles- APA, MLA, Chicago, and Harvard referencing styles.	
		Hands-on Practice: Engage students in hands-on activities where they draft and refine their research paper under the guidance of instructors	
IV		**Fundamentals of Research Ethics and Peer Review Process in Academic Publishing**	**8**
	12	Ethics concerning research- Academic integrity - Publication Ethics-Definition- Significance.	
	13	Academic Misconducts: Falsification- Fabrication – Plagiarism. Violation of Publication Ethics – Honor Code - Predatory Publishers and Journals	

	14	Peer Review Process- Definition- Role – Significance- Peer Review Process Employed by Social Science Journals- Double-Blind, Single-Blind and Open Peer Review Models.	
		Hands-on practice: Provide students with a set of sample research papers or proposals related to social sciences. Ensure that these papers cover diverse topics and are at a level appropriate for undergraduate students Briefly explain the concept of peer review and its importance in academic publishing. Highlight the role of peer reviewers in providing constructive feedback to improve research quality. *Divide students into pairs or small groups and assign each group a sample paper or proposal to review.*	
V		**Academic Journal Finder and Research Publication**	**12**
		• Introduce students to key resources and databases relevant to Social Science research, emphasizing the variety and scope of these tools. Highlight EconLit as a primary example for economics but encourage exploration of resources tailored to other Social Science disciplines. • Offer tips and strategies for navigating the submission process for economics journals, including manuscript preparation, submission guidelines, and responding to reviewer comments.	
		Assignment Descriptions: Synthesis Paper (500 words). Students will synthesise 4 papers into a brief review paper to learn how to read and analyse the social sciences literature. *The instructor will evaluate and provide feedback on the student's written assignments concerning content, organisation and coherence, argument and support, style, clarity, grammar, punctuation, and mechanics*	

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Apply academic writing skills	U, Ap, An	PSO-3
CO-2	Analyse comprehensive works of literature	U, An, E	PSO-1
CO-3	Create effective research papers	U, Ap, E, C	PSO-2
CO-4	Evaluate the impact of ethical practices and peer review models on academic integrity and publication quality.	U, Ap, E	PSO-6

CO-5	Create scholarly works by mastering the academic publication process	C	PSO-5

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture:Tutorial: Practical)

CO No.	CO	PO/ PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
1.	Apply academic writing skills	PSO-3	U, Ap, An	C, P, M	L	
2.	Analyse comprehensive works of literature.	PSO-1	U, An, E	C, P, M	L	
3.	Create effective research papers	PSO-2	U, Ap, E, C	C, P, M	L	
4.	Evaluate the impact of ethical practices and peer review models on academic integrity and publication quality.	PSO-6	U, Ap , E	F, C, M	L	
5.	Create scholarly works by mastering the academic publication process	PSO-5	C	F, P, M	L	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO4	PSO5	PSO6	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO 1	2	-	3	-	-	-	2	-	-	3	-	-	-	-

CO 2	2	-	3	1	-	-	2	1	-	3	-	1	-	-
CO 3	2	3	-	-	-	-	-	2	-	-	-	3	-	-
CO 4	1	-	-	-	-	3	2	-	-	1	-	-	-	-
CO 5	2	1	-	-	3	1	1	1	-	2	-	-	-	1

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓	✓		✓
CO 2	✓	✓		✓
CO 3	✓	✓		✓
CO 4	✓	✓		✓
CO 5		✓		
CO 6				

Reference

- Graff, G., & Birkenstein, C. (2021). They say / I say: The moves that matter in academic writing (5th ed.). W.W. Norton & Company.
- Galvan, J. L., & Galvan, M. C. (2021). Writing literature reviews: A guide for students of the social and behavioural sciences (8th ed.). Routledge.
- Booth, W. C., Colomb, G. G., & Williams, J. M. (2016). The craft of research (4th ed.). University of Chicago Press.
- Swales, J. M., & Feak, C. B. (2021). Academic writing for graduate students: Essential tasks and skills (4th ed.). University of Michigan Press.
- Turabian, K. L. (2018). A manual for writers of research papers, theses, and dissertations (9th ed.). University of Chicago Press.
- Stephen Bailey. (2003). Academic Writing A practical guide for students. RoutledgeFalmer, Taylor & Francis Group. New York
- Writing a Formal Research Paper in the Social Sciences.pdf
- https://live-germanna.pantheonsite.io/sites/default/files/2022-05/American%20Psychological%20Association%20%28APA%29%20Format%20M

University of Kerala

Discipline	ECONOMICS				
Course Code	UK6SECECO301				
Course Title	DATA ANALYSIS USING SPREADSHEET AND R				
Type of Course	SEC				
Semester	VI				
Academic Level	300-399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	3	3 hours	-	-	3
Pre-requisites	Knowledge of basic statistics				
Course Summary	This course aims at equipping the students to apply spreadsheet and R software for analysis of basic statistical data				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Introduction to Statistical Software for Economics**	**10**
	1	Introduction to Data- Types of data- Why data matters	
	2	Types of software- Excel, SPSS, STATA, R, PYTHON, EViews, GRETL	
	3	Uses- Advantages - Disadvantages	
II		**Introduction to Excel**	**10**
	5	Introduction to MS Excel	
	6	Spreadsheet basics and inputting of data-Inputting data-Selecting data-Multiplication, Division and Addition-Formatting Cells-Hide/unhide columns-Sorting Data-Filtering Data- Freezing and Unfreezing Headers- AUTO SUM and SUMIF commands-Using MAX, MIN, COUNT, COUNTIF and POWER command	
	7	Word processing and presentation of data using graphs and tables- Pivot Tables- Line Graph- Column Chart-Histogram- Pie Chart and Scatter Plot.	
III		**Statistical operations using EXCEL**	**10**
	9	Measures of Central Tendency - Mean, Median and Mode Arithmetic Mean, Geometric Mean and Harmonic Mean	

	10	Measures of Dispersion – Standard Deviation and Variance- Skewness-Kurtosis	
	11	Correlation and Simple Linear Regression	
	12	Introduction to economic and business data sets available in the public domain, such as from the NSE, BSE, RBI, MOSPI, World Bank, UN, etc. Any of these datasets may be used for demonstrating the statistical concepts studied in the course	
IV		**Introduction to R**	**10**
	12	History of R programming Language- Basics of R- objects and environment- console-script-operators- data structures-packages/libraries	
	13	Data types and type casting- related to numbers- characters- Boolean-time	
	14	Executing Commands in R - Importing Packages in R - Getting Data into R- Saving Output in R - Accessing Records and Variables in R	
	15	Graphics in R- Line plot- histogram-box plot- pie chart- QQ plot- gg plot	
V		**Data Analysis using R**	**5**
	17	Descriptive Statistics- mean, median, variance	
	18	Inferential statistics- Hypothesis testing using R	
	19	Regression analysis – linear and multiple regression using R	

Recommended Texts:

1. Data science using Python and R, by Chandal D Larose and Daniel T Larose, Wiley, 2019.
2. Data Mining and Business Analytics with R, Johannes Ledolte, Wiley, 2013
3. Vikram Dayal, *An Introduction to R for Quantitative Economics: Graphing, Simulating and Computing*, Springer Briefs in Economics, Springer (India), 2015.
4. Christian Kleiber and Achim Zeileis, *Applied Econometrics with R*, Springer-Verlag, New York, 2008.
5. Gareth James, Daniela Witten, Trevor Hastie, and Robert Tibshirani, *Introduction to Statistical Learning with Applications in R*, Springer 2013.
6. Roger D. Peng, *R Programming for Data Sciences*, Learnpub.com, 2015.
7. Hal R. Varian, Big Data: New Tricks for Econometrics, Journal of Economic Perspectives 28:2 (3-28), Spring 2014.
8. https://cag.gov.in/uploads/course_material/CourseMaterial-05ef48a7d58b9f5-87203440.pdf
9. D. Narayana, Sharad Ranjan, Nupur Tyagi (2021), Basic Computational Techniques for Data Analysis: An Exploration in MS-Excel, Sage Publications India Pvt limited, New Delhi
10. Andy Field and Jeremy Miles (2012), Discovering Statistics Using R, Sage Publications India Pvt limited, New Delhi.

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understanding basic statistical software for economic analysis	U	PSO-3,6
CO-2	Applying Excel tools for data handling and visualisation	U, Ap	PSO- 1,3
CO-3	Comparing and analyzing real world data sets with Excel tools	Ap, An	PSO-3, 6
CO-4	Understanding and visualizing data using R	U, Ap	PSO-1,3
CO-5	Applying and evaluating data in R	Ap, E	PSO-3,6

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understanding basic statistical software for economic analysis	PO-1,2,7 PSO-3,6	U	F	L	
CO-2	Applying Excel tools for data handling and visualisation	PO-1,2,3 PSO-1,3	U, Ap	C,P	L	
CO-3	Comparing and analyzing real	PO-1,2,3	Ap, An	C,P	L	

	world data sets with Excel tools	PSO-3,6					
CO-4	Understanding and visualizing data using R	PO-1,2,7 PSO-1,3	U, Ap	F, C, P	L	
CO-5	Applying and evaluating data in R	PO-1,2 PSO-3,6	Ap, E	C, P	L	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO4	PS O5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1		-	3	-	-	2	3	1					2
CO 2			3	-	-	2	3	2	1				
CO 3	-	-	3	-	-	2	2	3	1				
CO 4	2	-	3		-	-	2	3					1
CO 5	-		3	-	-	2	3	2					

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium

3	Substantial / High	

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2		✓		✓
CO 3		✓		✓
CO 4		✓		✓
CO 5		✓		✓

Semester VII

Discipline Specific Core			
UK7DSCECO400	Microeconomics-II	DSC	400-499
UK7DSCECO401	Macroeconomics-II	DSC	400-499
UK7DSCECO300	Kerala's Development Experience	DSC	300-399
UK7DSCECO301	Indian Economic Development	DSC	300-399
UK7DSCECO302	Public Finance Management	DSC	300-399
Discipline-Specific Elective (can select one)			
UK7DSEECO300	Open-Economy Macroeconomics	DSE	400-499
UK7DSEECO301	Mathematics for Economics II	DSE	400-499
UK7DSEECO302	Econometrics II	DSE	400-499

Discipline Specific Core

University of Kerala

Discipline	ECONOMICS				
Course Code	UK7DSCECO400				
Course Title	Microeconomics II				
Type of Course	DSC				
Semester	VII				
Academic Level	400 -499				
Course Details	Credit	Lecture Per week	Tutorial Per week	Practical Per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	The course requires familiarity with the main elements of microeconomic Theory at the introductory level.				
Course Summary	The course provides an understanding of the principles of Microeconomics that are applied to firms and individual decision makers.				

Detailed Syllabus:

Module	Unit	Hrs
I	**The Marginalist Controversy and Alternative Theories of the Firm**	15
	Hall and Hitch report and average cost pricing- Baumol's sales maximization model- Williamson's model of managerial discretion- Marris' model of managerial enterprise-The model of Sylos-Labini-Behavioural theory of Cyert And March.	
II	**Game Theory**	15
	The game theory- types of games- non-cooperative versus cooperative games- games of complete and incomplete information- zero-sum versus non-zero-sum games-simultaneous-moveversussequential-movegames-prisoner'sdilemma- dominant strategies- Nash equilibrium- pure strategies - mixed strategies- Repeated games-sequential games-applications of the game theory.	
III	**General Equilibrium and Welfare Economics**	15
	Partial and general equilibrium-problem of existence, stability and uniqueness of equilibrium-tatonnement-the Walrasian model-2*2*2 model of general equilibrium. Social welfare function of Bergson-Samuelson –Arrow's impossibility theorem- A K Sen and welfare-Rawl'stheory of social justice-Easterlin Paradox-Market Failure: Externalities and Public Goods.	
IV	**Economics of Uncertainty and Information**	10
	Consumer behavior under risk and uncertainty-describing risk-preference towards risk- ways of reducing risk. The economics of search-Asymmetric information: Quality uncertainty and the Market for lemons-market signaling-moral hazard-the principal-agent problem- the efficiency wage theory.	
V	Identify cases where game theory is used in real-world situations, conduct a case Study and submit report.	5

References

1. Varian,Hal R., Intermediate Microeconomics, 8THEdition,Affiliated East-WestPress.

2. Stonier,AlfredW.&Hague,DouglasC.,A Textbook of EconomicTheory,5THEdition, Pearson.

3. Koutsoyiannis,A.,Modern Microeconomics,2NDEdition,PalgraveMacmillan.

4. Pindyck,Robert &Rubinfeld, Daniel. Microeconomics,8th Edition, Pearson.

5. Maddala G.S.andMiller(2004),MicroEconomics-Theory and Applications,TataMcGraw Hill.

6. Salvatore Dominick, MicroEconomics:Theory and Applications,OxfordUniversityPress.

7. Gibbons, R.(1992).Game Theory for Applied Economists.Princeton,NewJersey: Princeton University Press.

8. Nicholson&Snyder.IntermediateMicroeconomicsanditsApplication(11thed).South-Western Cengage Learning.

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Analyse the behavior of individual economic agents.	An	PSO-1,3
CO-2	Compare different objectives followed by firms	An ,E	1, 3
CO-3	Compare different types of production functions and arrive at the optimal level of production.	An,E	1, 3
CO-4	Understand different real life situations like games and predict optimal strategies.	E,C	1,3
CO-5	Understand the implication of distribution of resources on social welfare	E,C	1,3
CO-6	Learn way to reducing risk and minimize the impact of asymmetric information	Ap,E	1,2,3

R-Remember,U-Understand,Ap-Apply,An-Analyse,E-Evaluate,C-Create

Note:1 or2 COs/module

Name of the Course: Microeconomics II

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
1	Analyse the behavior of individual economic agents	PO-1,2 PSO-1,3	An	F,C	L	
2	Compare different objectives followed by firms	PO-1,2 PSO-1,3	An,E	F,C	L	
3	Compare different types of production functions and arriveat the optimal level of production	PO-1,2 PSO-1,3	An,E	F,C,P	L	
4	Understand different real life situations like games and predict t the optimal strategies.	PO-1,2,3 PSO- 1,3,4	E,C	F,C,M	L	
5	Understand the implication of distribution of resources on social welfare	PO- 1,2,3,6 PSO- 1,2,3	E,C	F,C	L	
6	Learn ways of reducing risk and minimize the impact of asymmetric information	PO-1,2,3 PSO- 1,2,3	Ap,E	F,C,P	L	

Credits:4:0:0(Lecture:Tutorial:Practical)

F-Factual,C-Conceptual,P-Procedural,M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	-	3	-	-	-	2	1	-	-	-	-
CO 2	3	-	3	-	-	-	3	3	-	-	-	-
CO 3	3	-	1	-	-	-	3	2	-	-	-	-
CO 4	3	-	2	3	-	-	3	2	2	-	-	-
CO 5	3	1	2	-	-	-	2	3	1	-	-	1
CO 6	3	2	3	-	-	-	3	2	3	-	-	-

University of Kerala

Discipline	ECONOMICS				
Course Code	UK7DSCECO401				
Course Title	MACROECONOMICS-II				
Type of Course	DSC				
Semester	VII				
Academic Level	400 – 499				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4hours	-	-	4
Pre-requisites	Understanding of the mainstream macroeconomic approaches.				
Course Summary	The course provides an in-depth knowledge of simultaneous equilibrium through IS-LM and the effectiveness of fiscal and monetary policies. It analyses the business cycle theories and their applications in real-world situations and evaluates the ideas of the New classical school of Macroeconomics and its modern developments.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Title of the Module - Open Economy Macro Model**	15
	1`	IS-LM analysis for an open economy – Stabilization process with fixed and flexible exchange rates – Mundell – Fleming model – Relative efficacy of monetary and fiscal policies under different exchange rate regimes.	
II		**Title of the Module- Theory of Inflation and Unemployment**	15
	2	Relation between Inflation and Unemployment - Philips curve analysis - Long Run Philips curve- NAIRU Adaptive Expectations- Expectation Augmented Philips curve- Cost of reducing inflation and unemployment- Increasing Natural Rate of Unemployment and Hysteresis Hypothesis – Philips curve and Rational expectation.	
III		**Title of the Module -Business Cycle**	15

	3	Stylized facts of Business Cycle - Real Business Cycle Theory- Great Depression - Financial and economic crisis 2007-2009- Causes and consequences (Financial Innovation, Asset Risk and Diversification, Impact on Real Sector)– Viewpoints by Conservative and Keynesian economists (Eugene Fama, Paul Krugman etc) COVID crisis	
IV	**Title of the Module-Modern Development in Macro Economics –Classical School**		**20**
	4	Monetarism- Rational Expectations- New Classical Macro Economics- Views of Muth, Wallace, R.E.T Sargent - Supply Side Economics- Supply Shocks and Stagflation- Wedge Model- Laffer Curve- Policy Implication. Core Propositions and Features of New Keynesian Economics, Post Keynesian Economics Policy Prescriptions Efficiency Wage Theories of Involuntary Unemployment: - Shapiro–Stiglitz Model and Neo Keynesian Economics	
V	**Title of the Module-: Activities for students**		**10**
		3. Give exercises for estimating the relationship between unemployment and inflation data from the RBI database.DBIE (rbi.org.in) 4. Plot India's GDP, employment and investment data from 1990 till date and conduct a thorough analysis of the effects of demonetization and the COVID pandemic. (RBI database)DBIE (rbi.org.in)	

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Grasping the effectiveness of fiscal and monetary policies under different exchange rate regimes through the Mundell-Fleming model.	U, An,Ap	PSO 1,2, 3
CO -2	Understand the trade-off between inflation and unemployment through the long-run Phillips curve.	An, Ap, Ev	PSO 1,2,3
CO-3	. Analyse the business cycle theories and their applications in real-world situations	An, Ap, Ev	PSO 2,3

CO-4	Examine the New classical school of Macroeconomics and its modern developments	Un, An, Ap	PSO 1,3
CO-5	Evaluate the assumptions and policy prescriptions of Post-Keynesians from the New Keynesians.	An,Ap, Ev	PSO 1, 2, 3

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture:Tutorial:Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Grasping the effectiveness of fiscal and monetary policies under different exchange rate regimes through the Mundell-Fleming model.	PO 1,2 PSO 1,2,3	U, An, Ap	P, M	L	
CO -2	Understand the trade-off between inflation and unemployment through the long-run Phillips curve.	PO 1,2 PSO 1,2,3	An, Ap, Ev	P	L	
CO-3	Analyse the business cycle theories and their applications in real-world situations.	PO 1,2 PSO 2,3	An, Ap, Ev	C,P, M	L	
CO-4	Examine the New classical school of Macroeconomics and its modern developments	PO 1 PSO 1,3	Un, An, Ap	C, P	L	

CO-5	Evaluate the assumptions and policy prescriptions of Post-Keynesians from the New Keynesians.	PO 1,2 PSO 1, 2, 3	An,Ap, Ev	C, P	L	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO4	PS O5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	-	3	-	-	-	3	2				
CO 2	3	2	3	-	-	-	3	2				
CO 3	3	2	3	-	-	-	3	3				
CO 4	-	3	3		-	-	3	3				
CO 5	3	-	3	-	-	-	3	-				
CO 6	3	1	3		-	-	3	2				

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓	✓		✓
CO 3	✓			✓
CO 4	✓	✓		✓
CO 5	✓			✓
CO 6	✓			✓

Essential Reading List

1. Froyen R (2014) Macroeconomics: Theories and Policies (10th ed,), Pearson Education

2. Dornbusch, Fischer and Startz(2018)Chapter on "Money, Interest and Prices".

3. Froyen, Richard T (2006) Chapter on the Keynesian System (II): Money, Interest and Prices and The Keynesian System (III): Policy Effects in IS-LM model

4. A.J.Westaway and T.G.Weyman Johnes (1978), Macro Economics, Theory, Evidence and Policy, Longman

5. Gordon, Robert J (2018) Friedman and Phelps on the Phillips curve viewed from a half century's perspective. Review of Keynesian Economics, Vol. 6 No. 4, Winter 2018, pp. 425–436.

6. Snowdon and Vane (2005)(chapters on New Keynesian economicspp357-432 and Post Keynesian school, pp 451-4720

7. Koo, Richard T (2011)The world in balance sheet recession: causes, cure, and politics http://www.paecon.net/PAEReview/issue58/Koo58.pdf

8. Minsky, Hyman P (1992) The financial instability hypothesis. Working Paper Number 74.Levy Institute(http://www.levyinstitute.org/pubs/wp74.pdf).

9. Patnaik, PrabhaThe Economic Crisis and Contemporary Capitalism (https://www.robinson.cam.ac.uk/postkeynesian/members/ahe/Patnaik.pdf.)

10. Shin, Hyun Song(2009) Reflections on Northern Rock: The Bank Run that Heralded the Global Financial Crisis. Journal of Economic Perspectives—Volume 23, Number 1— Winter 2009— Pages 101–119.

Additional Reading List

1. Stanley Bober (2010), Economics of Cycles and Growth, Witely.

2. Mankiw, N. G, Macroeconomics, Worth Publishers, 7th edition, 2010

3. Dornbusch, R. and Stanley, F (1997), Macroeconomics, McGraw Hill, Inc., New York

4. Blackhouse, R. and Salansi, A (Eds.) (2000), Macroeconomics and the Real World (2 Vols.), Oxford University Press, London

5. Branson, W.A. (1989), Macroeconomic Theory and Policy, (3rd Edition), Harper and Row, New York

6. Frederic S. Mishkin (2011), Macroeconomic: Policy and Practice, Pearson Education Limited.

7. Prabhat Patnaik (1995), Macroeconomics (ed.), OUP, New Delhi

8. Kocherlakota, Narayana R (May 2010), "Modern macroeconomic models as tools for economic policy", Federal Reserve Bank of Minneapolis.

9. Gordon, Robert J (2018) Friedman and Phelps on the Phillips curve viewed from a half century's perspective. Review of Keynesian Economics, Vol. 6 No. 4, Winter 2018, pp. 425–436

University of Kerala

Discipline	ECONOMICS				
Course Code	UK7DSCECO300				
Course Title	Kerala's Development Experience				
Type of Course	DSC				
Semester	VII				
Academic Level	300 - 399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	Basic understanding of Kerala Economy.				
Course Summary	The course provides an in-depth examination of the social, economic, and political dimensions of Kerala's development experience. It analyses the factors contributing to Kerala's unique development trajectory and assesses its implications.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Introduction**	**10**
	1	Overview of development indicators.	
	2	The influence of Socio-cultural factors in Kerala's development.	
	3	The Evolution of Kerala Model of Development-People's Planning.	
	4	Nava Kerala Mission.	
II		**Sectoral Growth**	**15**
	5	Land reforms and its impact	
	6	Agricultural sector- growth, trends and issues	
	7	Industrial sector -growth, trends, and challenges	
	8	Service sector- Factors affecting growth prospects.	
III		**Social Sector and State Finance**	**18**
	9	Demographics - Birth rate, Death rate, IMR, MMR, TFR, Sex Ratio, Literacy Rate, Life Expectancy, Density of Population, Age Composition -Trends - Problem of Ageing, reduction in Poverty	
	10	Migration-Gulf Migration-New Trends in Migration-Youth Migration	
	11	Evolution of education sector -achievements-issues of educated unemployment.	
	12	Health sector development- -morbidity- lifestyle diseases.	
	13	State finance- trends in revenue and expenditure pattern -Need for development and debt issues -center-state finance relation and fiscal crisis.	
	14	Environment issues- Human-Wildlife conflicts.	

IV		**New Horizons in Development**	**10**
	15	IT sector-Role and prospects-IT mission	
	16	Tourism-Growth and contribution- health and medical tourism.	
	17	Infrastructure Development	
V		**Practice works-surveys and analysis**	**7**
	18	Analyzing trends in GSDP and other indicators using data sets.	
	19	Conducting surveys to understand educated unemployment and youth migration.	

Reading List

1. Albin, A. (1990). Manufacturing sector in Kerala: Comparative study of its growth and structure. *Economic and Political Weekly*, 2059-2070.

2. Bhalla, R., & Meher, S. (2019). Education, employment and economic growth with special reference to females in Kerala. *The Indian Journal of Labour Economics*, *62*(4), 639-658.

3. Isaac, T., & PK, M. T. (1995). Kerala: towards a new agenda. *Economic and Political Weekly*, 1993-2004.

4. Kannan, K. P. (2023). Revisiting the Kerala 'Model'of Development: A Sixty-year Assessment of Successes and Failures. *The Indian Economic Journal*, *71*(1), 120-151.

5. Kerala State Planning Board (2024) Economic Review (2023)

6. Kannan, K. P. (1990). Kerala economy at the crossroads?. *Economic and Political Weekly*, 1951-1956.

7. Kannan ,K.P.(2022).*Kerala 'Model' of Development Revisited A Sixty-Year Assessment of Successes and Failures*. Working paper510, Centre for Development Studies

8. Nair, M. S. (2018). Human Development and Economic Growth in Kerala: Sustainability Issues. *Productivity*, *59*(1).

9. Oommen, M. A. (2010). Freedom, economic reform and the Kerala 'Model'. In *Development, Democracy and the State* (pp. 81-96). Routledge.

10. Prakash, B. A., & Alwin, J. (2023). *Kerala's economic development: Covid -19 Pandemic Economic crisis and Public Policy*,Pearson

11. Prakash, B. A., & Alwin, J. (2018). *Kerala's economic development: Emerging issues and challenges*. Sage Publications.

12. Rajan .K.(2009)*Kerala Economy: Trends During the Post Reform Period* .Serial Publications

13. Pillai N, V. (2008). Infrastructure, Growth and Human Development in Kerala.

14. Ramachandran, V. K. (2018). Economic planning in Kerala. *Critical Asian Studies*, *50*(1), 155-163

15. Saikia, D. (2015). Migrant workers in Kerala: a study on their socio-economic conditions. *Journal of Economic and Social Development*, *11*(2), 29-43.

16. Thomas, J. J. (2003). Labour and industrialisation in Kerala. *Indian Journal of Labour Economics*, *46*(4), 575-592.

17. Thomas, J. J. (2005). Kerala's industrial backwardness: a case of path dependence in industrialization?. *World Development*, *33*(5), 763-783.

18. Zachariah, K. C., & Irudaya Rajan, S. (2015). Dynamics of emigration and remittances in Kerala: Results from the Kerala migration survey 2014.

19. Zachariah, K. C., Mathew, E. T., & Rajan, S. I. (2001). Social, economic and demographic consequences of migration on Kerala. *International migration*, *39*(2), 43-71.

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the historical, social, and cultural context of Kerala's development.	R, U	PSO-1,2
CO-2	Analyze the key factors contributing to Kerala's achievements	An, E	PSO-3, 4
CO-3	Critically evaluate the challenges and constraints facing Kerala's development mode	An, E	PSO-3,4
CO-4	Evaluate the future trends of Kerala's economic development.	E	PSO-3,4,6

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understand the historical, social, and cultural context of Kerala's development.	PO-1,2 PSO-1,2	R, U	F, C	L	
CO-2	Analyze the key factors contributing to Kerala's achievements	PO-1,2 PSO-3, 4	An, E	P, M	L	
C0-3	Critically evaluate the challenges and constraints facing Kerala's development mode	PO-1,2 PSO-3,4	An, E	P, M	L	
CO-4	Evaluate the future trends of Kerala's economic development.	PO-1,2,4,7 PSO-3, 4,6	E	P, M	L	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs:

	PSO 1	PSO 2	PSO 3	PSO4	PSO5	PSO 6	PO1	PO2	PO3	PO 4	PO5	PO6	PO-7
CO 1	3	3	-	-	-	-	3	3					
CO 2			2	2	-	-	3	3					
CO 3	-	-	3	4	-	-	3	3					

CO 4	-	-			-	-							

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics:

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4		✓		✓

University of Kerala

Discipline	ECONOMICS				
Course Code	UK7DSCECO301				
Course Title	Indian Economic Development				
Type of Course	DSC				
Semester	VII				
Academic Level	300 - 399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	Basic understanding of the Indian Economy.				
Course Summary	This course provides an overview of the economic development of India, covering its historical context, economic policies, major sectors, challenges, and prospects.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Introduction**	**15**
	1	Economic development policy post-independence till 1991- planned economy five-year plans	
	2	Mixed economy- Role of the public sector- Industry	
	3	Green revolution and agricultural sector development	
	4	Success and Challenges of the Five-year Plans	
II		**Economic Reforms of 1991 and after**	**10**
	5	The background and context of economic reforms-	
	6	Features of economic reforms and implications-Liberalisation- privatisation and globalization.	
	7	Continuous reforms in the banking sector, and financial sector.	
	8	Diminishing role of planning-NITI Ayog.	
III		**Sectoral Analysis**	**15**
	9	Agricultural sector- Continuous green revolution- land reforms-land use patterns -issues in e agricultural finance -agricultural indebtedness- WTO and Indian Agriculture.	
	10	Industrial Sector- Structural changes- reduced role of the public sector- disinvestment- ICT-technology adoption	
	11	The service sector- the rise of service sector-FDI in the service sector- WTO and service sector	
IV		**Development issues and Prospects**	**15**
	12	Poverty- poverty eradication strategies-challenges-extreme poverty.	

	13	Inequality- the challenge of reducing inequality	
	14	Unemployment-work participation rates of women-educated unemployment.	
	15	Women and Development -Role of Women in the economy-education-literacy	
	16	Environmental issues	
V		**Practice Sessions**	**5**
	17	Evaluation through field investigation/group discussion/seminar and report writing on contemporary economic issues in the region	

Basic Readings

1. Uma Kapila, (2022), 33rd Edition, Indian Economy Since Independence, Academic Foundation, New Delhi.
2. Rodrik, Dani, and Arvind Subramanian. (2004) From" Hindu growth" to productivity surge: the mystery of the Indian growth transition. No. w10376. National Bureau of Economic Research.
3. Economic Survey available at https://www.indiabudget.gov.in/economicsurvey/index.php
4. Jose, Tojo (2021), First Edition, Indian Economy, Media Books

Additional Readings

1. Jalan, B. (1992), The Indian Economy – Problems and Prospects, Viking, New Delhi.
2. Rakesh Mohan (2008), 'Growth Record of the Indian Economy, 1950-2008: A Story of Sustained Savings and Investment", Economic and Political Weekly, Vol. 43, No. 19 , pp. 61-71
3. Tendulkar Committee Report available at http://planningcommission.gov.in/eg_poverty.html
4. Nagaraj R.(2020) "Understanding India's Economic Slowdown: Need for Concerted Action" The India Forum, February 7, available at https://www.theindiaforum.in/article/understanding-indiaseconomicslowdown
5. Nagaraj R(2017). "Economic Reforms and Manufacturing Sector Growth: Need for Reconfiguring the Industrialisation Model", *Economic and Political Weekly*: Vol. 52, Issue No. 2, 14 Jan.
6. Evolving Issues and Future Directions in GST Reform in India by M Govind Rao **https://www.mse.ac.in/wp-content/uploads/2022/08/Working-Paper-221.pdf**
7. Mukherjee Arpita (2013). The service sector in India. ADB Working Paper No. 352, Asian Development Bank, Manila
8. Report of the 15th Finance Commission for 2021-26 https://prsindia.org/policy/report-summaries/report-15th-finance-commission-2021-26
9. Shaktikanta Das (2021), Financial Inclusion – Past, Present and Future,
10. https://www.rbi.org.in/Scripts/BS_SpeechesView.aspx?Id=1110

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the historical evolution of the Indian Economy post-independence	R, U	PSO-1,2
CO-2	Analyze the impact of economic policies on India's development	An, E	PSO-2,3
CO-3	Evaluate the performance of major sectors	An, E	PSO-3,4
CO-4	Analyze the key challenges faced by the Indian Economy.	An, E	PSO-3,4

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture:Tutorial:Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understand the historical evolution of the Indian Economy post-independence	PO-1 PSO-1	R, U	F, C	L	
CO-2	Analyze the impact of economic policies on India's development	PO-2,3 PSO-3,4	An, E	P,M	L	
CO-3	Evaluate the performance of major sectors	PO-2,4 PSO-3,4	An, E	P, M	L	

CO-4	Analyze the key challenges faced by the Indian Economy.	PO-3,4 PSO-3,4	An, E	P, M	L	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO4	PSO5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	-	-	-	-	-	3					
CO 2		3	3	-	-	-			3	3		
CO 3	-	-	3	3	-	-		3		3		
CO 4	-	-	3	3	-	-			3	3		

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4	✓	✓		✓

University of Kerala

Discipline	ECONOMICS
Course Code	UK7DSCECO302
Course Title	Public Finance Management
Type of Course	DSC
Semester	VII
Academic Level	300 - 399

Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4

Pre-requisites	Basic understanding of Economics.
Course Summary	The course provides an overview of public finance management principles and practices. It covers topics such as public revenue, public expenditure, budgeting, fiscal policy, debt management, and fiscal federalism.

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Introduction**	**15**
	1	Public Finance-Objectives of Public Finance	
	2	Public Sector and Private Sector	
	3	Public Finance Management -Need for Public Finance Management-	
	4	Issues in Public Finance Management- Fiscal deficit, Public Debt, Efficiency, Accountability, Transparency, Fiscal Space Issue of Fiscal federalism in India	
II		**Public Revenue and Public Expenditure**	**15**
	5	Sources of Public Revenue and Revenue Management- Tax reforms in India-GST.	
	6	Types of Public Expenditure and Public Expenditure Management	
	7	Trends in the growth of public revenue and Public expenditure	
	8	Public Debt and Public Debt Management	
III		**Planning and Budgeting**	**15**
	9	State and the Economy- Public Utilities Funding	
	10	Features of traditional Public Finance Management- One-year time horizon, Focus on spending and spending controls, Weak link between stated policies, priorities, and budget allocations, Little incentive for efficiency, Lack of coordination between various spending ministries and finance ministry.	

	11	Components of good budgeting- Strategic budgeting, budget sustainability, Proper conceptualization of capital expenditures, Programme-based budgeting (PBB), and Prudent budget execution.	
IV		**Determinants of Fiscal Management**	**15**
	12	Proper macroeconomic forecasting—Revenue Capacity and medium-term fiscal targets.	
	13	Fiscal realism of revenue and expenditure-Fiscal Transparency	
	14	Managing Fiscal Risk-integration between capital and recurrent budgets.	
	15	External audit and legislative control and review. Finance commission in India.	
V		**Case studies and applications**	**15**
	16	Analyzing the public finance management systems of India and Kerala.	
	17	Comparing the public finance management systems of different countries.	

Reading List

1. Howard A Frank (Ed), Public Financial Management (2006), Routledge.

2. Richard Allen, Richard Hemming and B. Potter (Eds) (2013), The International Handbook of Public Financial Management.

3. Musgrave and Musgrave (2004). (Fifth edition). Public Finance in Theory and Practice. Tata McGraw-Hill. New Delhi.

4. Stiglitz, Joseph E and Jay K. Rosengard (2015) Economics of the Public Sector, WW Norton &Co.

5. Jha, R. (2009). Modern Public Economics Second Edition. Routledge.

6. Holley H. Ulbrich (2011) Public Finance in Theory and Practice, Routledge.

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the fundamental concepts and theories of public finance and Public Finance Management.	R, U	PSO-1
CO-2	Analyze the challenges and issues faced in public finance management and policy formulation.	An, E	PSO-2,3
CO-3	Develop critical thinking and analytical skills in evaluating policies and reforms.	E	PSO-3,4
CO-4	Analyze the tools and techniques used in public revenue	An, E	PSO-3,4

	generation, expenditure allocation and budgeting.			

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understand the fundamental concepts and theories of public finance and Public Finance Management.	PO-1 PSO-1	R, U	F, C	L	
LCO-2	Analyze the challenges and issues faced in public finance management and policy formulation	PO-2,3 PSO-2,3	An, E	P	L	
CO-3	Develop critical thinking and analytical skills in evaluating policies and reforms.	PO-3,4 PSO-3,4	E	P, M	L	

CO-4	Analyze the tools and techniques used in public revenue generation, expenditure allocation and budgeting	PO-4,6 PSO-3,4	An, E	P, M	L	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs:

	PSO 1	PSO 2	PSO 3	PSO4	PS O5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	-	-	-	-	-	3					
CO 2		3	3	-	-	-		3	3			
CO 3	-	-	3	3	-	-			3	3		
CO 4	-	-	3	3	-	-				3		3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium

3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics:

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓	✓		✓
CO 2	✓	✓		✓
CO 3	✓	✓		✓
CO 4	✓	✓		✓

Discipline Specific Elective

University of Kerala

Discipline	ECONOMICS				
Course Code	UK7DSEECO400				
Course Title	OPEN ECONOMY MACROECONOMICS				
Type of Course	DSE				
Semester	VII				
Academic Level	400-499				
Course Details	Credit	Lecture perweek	Tutorial perweek	Practical perweek	Total Hours/Week
	4	4	-		4
Pre-requisites	Thorough understanding of Macroeconomics, Microeconomics, International Economics and Mathematical Economics.				
Course Summary	This course intends to emphasize how a country's relations with the rest of theworldinfluenceaggregateeconomicactivity,employment,exchangerate, and foreign exchange markets. The course prepares the student for professional discussions on the design of open economy macroeconomic policies,whichareessentialtounderstandingmacroeconomicfluctuationsin contact with global transactions.				

Detailed Syllabus:

Module	Unit	Content			Hrs
I		**Open-Economy Macroeconomics: Review of Preliminaries**			**10**
	1	National Income Accounting and Balance of Payments;			
	2	Exchange Rates and the Foreign Exchange Market;			
	3	Money,Interest Rates and Exchange Rates Reference: • Chapters:13,14,15;Krugman,P.,Obstfeld,M.,Melitz,M. (2015) International Economics: Theory and policy, 10th Edition Pearson Education.(Global edition/Indian Subcontinent Reprint)			
II		**Open Economy Macroeconomics : Adjustment Mechanisms**			**12**
	4	The partial equilibrium elasticities approach and the Marshall-Lerner condition- The J-Curve Effect and Revised Elasticity Estimates			
	5	Income Determination in an Open Economy-The Keynesian approach to output			

			adjustment and absorption			

	6	Absorption Approach			
	7	Monetarist Approach to Balance of Payments References: • Chapters7,8,9,12;Gandolfo, G., International Finance and Open Economy Macroeconomics (Springer, 2001). • Chapters3,4.;Dornbusch,R.,1980.OpenEconomy Macroeconomics. • Chapters16,17;Salvatore,D(2008)–International Economics, (8th Edition). Wiley India, New Delhi.3 • Frenkel,Jacob and HarryJohnson,1976,``TheMonetary Approach to the Balanceof Payments:Essential Concepts and Historical Origins,''in JacobFrenkel and HarryJohnson(eds), The Monetary Approach to the Balance of Payments (Toronto: University of Toronto Press, 1976, p.25)			
III		**External Adjustment: Stock-Flow Consistent Approaches**			**13**
	8	Dynamic and Stochastic Mundell-Fleming Models; Sticky domestic prices and exchange rates, Dynamic version of Dornbusch's Mundell-Fleming model, Exchange rate dynamics and over shooting, Stochastic Mundell-Fleming model			
	9	Intertemporal Approach to Current Account Balance; A small two-period endowment economy, Role of investment:defining the current account, A two-region world economy			
	10	The Portfolio Balance approach			
		References: • Chapter8;Nelson,C.Mark(2001), International Macroeconomics and Finance: Theory and Econometric Methods, Blackwell Publishers. • Chapter1,4,9;Obstfeld,MauriceandRogoff,Kenneth(1996), Foundations of International Macroeconomics, MIT Press • Chapter13;Gandolfo,G.,International Finance and Open Economy Macroeconomics (Springer, 2001).			
IV		**Exchange Rate Regimes and Currency Crises Models**			**13**
	11	Recent History of Exchange Rate Arrangements Reference: • Reinhart,Carmen and Rogoff,Kenneth(2004),"The Modern History of Exchange RateArrangements:AReinterpretation", Quarterly Journal of Economics,119(1),1-48.			

	12	The Second-Generation Currency Crisis Model			
		Reference: • Chapter16;Vegh,A.Carlos(2013),Open Economy Macroeconomics in Developing Countries, MIT Press.			
	13				
		Currency Derivatives-Currency Crises and Monetary Policy in an Economy with Credit Constraints Reference: • Aghion,P,BacchettaP,and Banerjee A.(2000),"A Simple Model of Monetary Policy and Currency Crises",European Economic Review,44, 728-738			
V		**Open-Economy Macroeconomics-Case Studies**		**12**	
	14	Identify the Risks to Global Macroeconomic growth, according to IMF Publications,and provide suggestive measures for efficient multilateral coordination.			
	15	Conduct a discussion on the challenges faced by the Reserve Bank of India (RBI) in conducting monetary policy, in an open economy framework.			
	16	DevelopapolicydocumentforIndiasuggestingmeasurestomaintainenergy security amidst global oil price fluctuations.			

ReadingList

- Krugman, P., Obstfeld, M., Melitz, M. (2015) International Economics: Theory andpolicy, 10th Edition Pearson Education. (Global edition/Indian Subcontinent Reprint)
- Obstfeld, Maurice and Rogoff, Kenneth (1996), Foundations of International Macroeconomics, MIT Press
- Gandolfo,Giancarlo(withcontributionsbyDanielaFederici)(2016)International Finance and Open Economy Macroeconomics. 2nd edition. Springer.
- Dornbusch,R.,1980.OpenEconomyMacroeconomics.
- Nelson,C.Mark(2001),InternationalMacroeconomicsandFinance:Theoryand Econometric Methods, Blackwell Publishers.
- Salvatore,D(2008)–InternationalEconomics,(8thEdition).WileyIndia,NewDelhi.3
- Frenkel, Jacob and Harry Johnson, 1976, ``The Monetary Approach to the Balance of Payments: Essential Concepts and Historical Origins,'' in Jacob Frenkel and Harry Johnson (eds), The Monetary Approach to the Balance of Payments (Toronto: University of Toronto Press, 1976,
- Aghion,P,BacchettaP,andBanerjeeA.(2000),"ASimpleModelofMonetaryPolicy and Currency Crises", European Economic Review, 44,
- IMFPublications;https://www.imf.org/en/Publications

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand the macroeconomic theories and models in the context of open economies.	R,U	PS01, PSO2 , PSO4
CO-2	Examine the theoretical underpinnings of economic policy and adjustment mechanisms in open economies	R,U	PSO2, PS04
CO-3	Analyse different open economy macroeconomic approaches towards the treatment of fluctuations in external stability	Ap,An	PSO1, PS02, PS0,3
CO-4	Evaluate the management of Exchange Rate Regime and the situation of global currency Crises.	E	PSO2, PS0 4

R-Remember,U-Understand,Ap-Apply,An-Analyse,E-Evaluate,C-Create

Note:1or2COs/module

Name of the Course:Credits:4:0:0(Lecture:Tutorial:Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understand the macroeconomic theories and models in the context of open economies..	PO–1. PS01, PS02, PS0,4	R,U	C	L	-

CO-2	Examine the theoretical underpinnings of economic policy and adjustment mechanisms in open economies	PO-1. PSO2, PS0 4	R,U	P,M	L	-
CO-3	Analyse different open economy macroeconomic approaches towards the treatment of	PO-1, PO2, PO3.	Ap,An	P,M	L	-
	fluctuations in external stability	PSO1, PS02, PS0 3				
CO-4	Evaluate the management of Exchange Rate Regime and the situation of global currency Crises.	PO-1, PO2 PSO2, PS04	E	P	L	-

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of Cos with PSOs and POs:

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	P07
CO1	1	3	-	2	-	-	3	-	-	-	-	-	-
CO2	-	3	-	2	-	-	2	-	-	-	-	-	-
CO3	1	2	3	-	-	-	1	2	2	-	-	-	-

CO4	-	2	-	3	-	-	1	2		-	-	-	-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly/Low
2	Moderate/ Medium
3	Substantial/High

Assessment Rubrics:

- Quiz/Assignment/Discussion/Seminar
- Internal Exam
- Projec Evaluation
- Final Exam

Mapping of Cos to Assessment Rubrics:

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO1	✓		✓	✓
CO2	✓			✓
CO3	✓	✓	✓	✓
CO4	✓	✓	✓	✓

University of Kerala

Discipline	ECONOMICS				
Course Code	UK7DSEECO401				
Course Title	Mathematics for Economics -II				
Type of Course	DSC				
Semester	VII				
Academic Level	400 - 499				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-	-	4
Pre-requisites	1. Knowledge of calculus and linear algebra is essential for understanding economic models and data analysis techniques used in the course 2. Basic understanding of microeconomics and macroeconomics to grasp the economic theories and concepts applied during quantitative analyses.				
Course Summary	The course aims to provide students with a solid grasp of mathematical techniques and their practical use in economic analysis. Topics include determinants, matrices, optimization, differential equations, and market dynamics. By blending theory with real-world examples, students will develop critical thinking and problem-solving skills, enabling them to analyze economic phenomena, create models, and make informed decisions. Hands-on activities and data analysis will offer practical experience in observing market dynamics and using mathematical models to predict economic trends.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Determinants and Matrices and their Use in Economics**	15
	1	Determinants and their Properties- Evaluation of Higher-order Determinants- Laplace Expansion and Higher Order Determinants- Special Determinants and Matrices – The Jacobian - The Hessian	
	2	Crammers Rule and Hessian in Optimization Problems	
	3	Quadratic Forms - The Discriminant and Sign Definiteness of Quadratic Functions.	
	4	Higher Order Hessians - The Bordered Hessian in Constrained Optimization	
	5	Input-Output Analysis – Hawkins-Simon Conditions	

	6	Eigen Values – Eigen Vectors	
II		**Optimization Methods in Economic Decision-Making**	**15**
	7	Optimization of Multivariable Functions in Economics-Constrained Optimization with Lagrange Multipliers- Significance of the Lagrange Multiplier	
	8	Constrained Optimization of Multivariable Functions in Economics- Homogeneity and Returns to Scale- Optimization of Cobb-Douglas Production Functions - Optimization of Constant Elasticity of Substitution Production Functions	
	9	Optimisation with Inequality Constraint – Linear Programming – Characteristics – Formulation- Solution of LPP- Graphic Method and Simplex Method - Duality – Uses of Dual LPP - Shadow Prices	
III		**First-Order Differential Equations**	**9**
	10	Differential Equations – Definition and Concepts- General Formula for First-Order Linear Differential Equations- Exact Differential Equations and Partial Integration - Integrating Factors- Rules for the Integrating Factor - Separation of Variables	
	11	Second-order Differential Equations	
	12	Economic Applications - Estimation of Economic Functions; Dynamic Stability in Microeconomic models; Growth path.	
IV		**First-Order Difference Equations**	**9**
	13	Difference Equations – Definition and Concepts - General Formula for First-Order Linear Difference Equations - Stability Conditions	
	14	Economic Applications- Lagged Income Determination Model - The Cobweb Model - The Harrod Model	
V		**Economic Analysis and Interpretation**	**12**
		Objective: This module aims to apply mathematical techniques learned in the above modules to analyze real-world economic scenarios using secondary data.	
		- Give datasets with economic info. - Split students into small groups, each with a scenario. - They use concepts from the course to analyze and solve. - Guide them to create mathematical representations. - Groups discuss and compare. - Each group presents findings. This helps students apply math in real-world economics. Through this activity, students will integrate knowledge and skills acquired from the modules to tackle complex economic problems, enhancing their ability to apply quantitative methods in real-world contexts.	

Course Outcomes

No.	Upon completion of the course, the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Apply determinants and matrices in economic analysis	Ap	PSO -1
CO-2	Apply optimisation techniques to optimise economic decisions and interpret empirical data accurately.	Ap	PSO -1,2
CO-3	Analyse economic trends by applying first-order differential equations.	Ap, An	PSO -1,2
CO-4	Analyze economic phenomena by applying first-order difference equations.	Ap, An	PSO -1,2
CO-5	Apply mathematical techniques to analyze and interpret real-world economic phenomena using secondary data.	Ap, An, E, C	PSO -3,4,5

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
1	Apply determinants and matrices in economic analysis	PSO-1	Ap	P	L	
2	Apply optimization techniques to optimize economic decisions and	PSO-1,2	Ap	P	L	

	interpret empirical data accurately.				
3	Analyse economic trends by applying first-order differential equations.	PSO-1	Ap, An	P, C	L
4	Analyze economic phenomena by applying first-order difference equations	PSO-1	Ap, An	P, C	L
5	Apply mathematical techniques to analyze and interpret real-world economic phenomena using secondary data.	PSO-3,4,5,6	Ap, An, E, C	P, C,M	L

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO4	PS O5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	2	-	-	-	-	-	2	-	-	-	-	-
CO 2	1	2	-	-	-	-	2	-	-	-	-	-
CO 3	2	1		-	-	-	2	2	-	-	-	-
CO 4	2	1			-	-	2	2	-	-	-	-
CO 5	-	2	3	3	2	2	3	3	3	3	3	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4	✓			✓
CO 5		✓		

Reference

- Chiang, A.C. & Wainwright, K. (2013). Fundamental Methods of Mathematical Economics. (4th ed.). McGraw Hill Education (India) Private Limited.

- Sydsaeter, K. & Hammond, P. (2016). Mathematics for Economic Analysis. New Delhi: Pearson Education Inc

- Dowling, E. T. (2012). Schaum's Outlines-Introduction to Mathematical Economics. (3rd ed.)

- **Recommended Readings**

- Roser, M. (2003). Basic Mathematics for Economists. (2nd ed.). New York: Routledge

- Renshaw, G. (2011). Maths for Economics. (4th ed.). Oxford. Oxford University Press

- Hoy, Michael, John Livernois, Chris McKenna, Ray Rees and Thanasis Stengos Mathematics for Economics, Third Edition. PHI Learning

- Black. J. and J.F Bradley: Essential Mathematics for Economic, John Wiley and Sons, .New Delhi

- Allen, R.G.D Mathematical Analysis for Economists, AITBS Publishers, Delhi

Discipline	ECONOMICS				
Course Code	UK7DSEECO402				
Course Title	ECONOMETRICS-II				
Type of Course	DSE				
Semester	VII				
Academic Level	400-499				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	4 hours	-		4
Pre-requisites	Thorough knowledge of basic econometrics theory and applications				
Course Summary	This course provides an in-depth understanding of econometric principles, equipping students with the tools to analyze complex time series and panel data				

Detailed Syllabus:

Module	Unit	Content	Hrs
I		**Dummy Variables Regression Models**	10
	1	Dummy Variable Technique and its Applications	
	2	ANOVA models-ANCOVA models	
	3	Comparing two regressions, interaction effects, seasonal analysis, piece-wise linear regression	
	4	The nature of Qualitative response regression models-Linear probability model, Logit and Probit	
II		**Estimation of Simultaneous Equation Models**	15
	5	Simultaneous Equation Models - Structural and Reduced form Equations-Simultaneous Equation Bias, Instrumental Variable Estimation	
	6	Identification Problem, The Rank and Order Condition, Methods of estimating simultaneous equation system, Recursive methods and OLS	
	7	Indirect Least Squares, 2SLS, 3SLS, FIML estimation techniques - Durbin – Wu – Hausman Test	
III		**Time Series Econometrics**	15
	9	Time Series Analysis- Stationarity & Non-Stationarity- The Box- Jenkins (BJ Methodology)	
	10	Unit roots and Units roots tests; AR, MA, Integrated Process, ARMA ARIMA modelling	

	11	Vector Auto Regressive (VAR) and Causality - Measuring Volatility – The ARCH and GARCH Model	
IV		**Introduction to Panel Data Models**	**12**
	12	Panel Data Set – Example to investigate dynamics	
	13	Fixed Effects Regressions – Within groups fixed effects, First differences fixed effects	
	14	Random Effects Regressions - Assessing the appropriateness of fixed effects and random effects estimation	
V		**(APPLICATION IN GRETL and R)**	**8**
	15	Case studies of all the above modules with data from Indian Economy	

Readings

1. Damodar N Gujarati and Dawn C Porter (2009): Basic Econometrics, Fifth Edition, McGraw Hill International Edition.

2. Jeffrey M Wooldridge (2018): Introductory Econometrics: A Modern Approach, 7 th Edition, Thomson South Western.

3. Walter Enders (2013) Applied Econometric Time Series, 3rd Edition, Wiley, ISBN- 10: 8126543914,

4. James D Hamilton Time Series Analysis (1994) Princeton University Press

5. Stock and Watson 'Introduction to Econometrics', Pearson

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Understand, analyse and explore how to incorporate categorical variables into regression models	An, Ap	1,2,3
CO-2	Modelling simultaneity relationship between variables	E, C	1,2,6
CO-3	Modelling and forecasting time series data effectively with real world data	Ap, An, C	1,2,3
CO-4	Acquire the ability to estimate causal effects using panel data	E	1,2,3

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: Credits: 4:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
CO-1	Understand, analyse, and explore how to incorporate categorical variables into regression models	PO- 1,2,3 PSO-1,2,3	An, Ap	C, P	L	
CO-2	Modeling and forecasting time series data effectively with real-world data	PO- 2,3 PSO-1,2,6	E, C	P	L	
CO-3	Modelling the simultaneity relationship between variables	PO- 2,3,7 PSO-1,2,3	Ap, An, C	P, M	L	
CO-4	Acquire the ability to estimate causal effects using panel data	PO- 1, 2,3 PSO- 1,2, 3	E	C, P	L	

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO4	PSO5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	2	1	3	-	-	-	1	3	2				
CO 2	2		3	-	-	1		3	2				
CO 3	1	2	3	-	-	-		3	1				2
CO 4	1	2	3		-	-	1	3	2				

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics:

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4		✓		✓

Instructions

Compulsory Discipline Specific Core (DSC) courses to be taken as Major Courses in various semesters.

Semester	Course Code	Course Name	Type	Level
1	UK1DSCECO100	Principles of Economics	DSC	100-199
2	UK2DSCECO100	Tools for Economic Analysis	DSC	100-199
3	UK3DSCECO200	Microeconomics-I	DSC	200-299
4	UK4DSCECO200	Macroeconomics-I	DSC	200-299
4	UK4DSCECO201	Mathematics for Economics-I	DSC	200-299
5	UK5DSCECO300	Indian Economy	DSC	300-399
5	UK5DSCECO301	International Economics-I	DSC	300-399
5	UK5DSCECO302	Statistical Methods for Economics	DSC	300-399
6	UK6DSCECO300	Econometrics-I	DSC	300-399
6	UK6DSCECO301	Development Economics	DSC	300-399
6	UK6DSCECO302	International Economics -II	DSC	300-399

Different Pathways with Specializations

    1) Pathway -1 (General)

BA Economics Degree /BA Economics Honours / BA Economics Honours with research

    2) Pathway- 2 (With Specialization)

Besides fulfilling other norms, on successful completion of **any four** of the **Discipline Specific Electives** given below, a BA Economics Degree with Specialization in Data Science /BA Economics Honours with Specialization in Data Science/ BA Economics Honours with Research and Specialization in Data Science can be awarded to the student**.**

Semester	Course Code	Course name	Type	Level
4	UK4DSEECO201	Foundations of Data Science	DSE	200-299
5	UK5DSEECO300	Research Methodology in Economics	DSE	300-399
5	UK5DSEECO302	Artificial Intelligence and Machine Learning In Economics	DSE	300-399
6	UK6DSEECO301	Financial Econometrics	DSE	300-399
7	UK7DSEECO401	Mathematics for Economics II	DSE	400-499
7	UK7DSEECO402	Econometrics II	DSE	400-499

    3) Pathway- 3 (With Specialization)

Besides fulfilling other norms, on successful completion of **any four** of **Discipline Specific Electives** given below, a BA Economics Degree with specialization in Development Studies /BA Economics Honours with specialization in Development Studies / BA Economics Honours with research and specialization in Development Studies can be awarded to the student.

Semester	Course Code	Course name	Type	Level
4	UK4DSEECO200	Environmental Economics	DSE	200-299
5	UK5DSEECO301	Public Economics	DSE	300-399
6	UK6DSEECO300	Kerala Economy	DSE	300-399
6	UK6DSEECO302	Gender Economics	DSE	300-399
7	UK7DSEECO400	Open-Economy Macroeconomics	DSE	400-499