



**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	<b>Critical thinking</b> <ul style="list-style-type: none"><li>○ analyze information objectively and make a reasoned judgment</li><li>○ draw reasonable conclusions from a set of information, and discriminate between useful and less useful details to solve problems or make decisions</li><li>○ identify logical flaws in the arguments of others</li><li>○ evaluate data, facts, observable phenomena, and research findings to draw valid and relevant results that are domain-specific</li></ul>
PO-2	<b>Complex problem-solving</b> <ul style="list-style-type: none"><li>○ solve different kinds of problems in familiar and no-familiar contexts and apply the learning to real-life situations</li><li>○ analyze a problem, generate and implement a solution, and to assess the success of the plan</li><li>○ understand how the solution will affect both the people involved and the surrounding environment</li></ul>
PO-3	<b>Creativity</b> <ul style="list-style-type: none"><li>○ produce or develop original work, theories, and techniques</li><li>○ think in multiple ways to make connections between seemingly unrelated concepts or phenomena</li><li>○ add a unique perspective or improve existing ideas or solutions</li><li>○ generate, develop, and express original ideas that are useful or have values</li></ul>
PO-4	<b>Communication skills</b> <ul style="list-style-type: none"><li>○ convey or share ideas or feelings effectively</li><li>○ use words in delivering the intended message with utmost clarity</li><li>○ engage the audience effectively</li><li>○ be a good listener who are able to understand, respond and empathize with the speaker</li><li>○ confidently share views and express himself/herself</li></ul>
PO-5	<b>Leadership qualities</b> <ul style="list-style-type: none"><li>○ work effectively and lead respectfully with diverse teams</li><li>○ build a team working towards a common goal</li><li>○ motivate a group of people and make them achieve the best possible solution.</li><li>○ help and support others in their difficult times to tide over the adverse situations with courage</li></ul>

<b>PO-6</b>	<b>Learning ‘how to learn’ skills</b> <ul style="list-style-type: none"> <li>○ 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</li> <li>○ work independently, and identify appropriate resources required for further learning</li> <li>○ acquire organizational skills and time management to set self-defined goals and targets with timelines</li> <li>○ inculcate a healthy attitude to be a lifelong learner</li> </ul>
<b>PO-7</b>	<b>Digital and technological skills</b> <ul style="list-style-type: none"> <li>○ use ICT in a variety of learning and work situations, access, evaluate, and use a variety of relevant information sources</li> <li>○ use appropriate software for analysis of data</li> <li>○ understand the pitfalls in the digital world and keep safe from them</li> </ul>
<b>PO-8</b>	<b>Value inculcation</b> <ul style="list-style-type: none"> <li>○ 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</li> <li>○ formulate a position/argument about an ethical issue from multiple perspectives</li> <li>○ 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</li> <li>○ adopt objective, unbiased, and truthful actions in all aspects of work</li> </ul>

### **Programme Specific Outcomes (PSO)**

<b>No.</b>	<b>Upon completion of the Programme, the graduate will be able to</b>
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.

## Semester I

Course Code	Discipline Specific Core		Level
UK1DSCECO100	Principles of Economics	DSC	100-199
UK1DSCECO101	Fundamentals of Microeconomics	DSC	100-199
UK1DSCECO103	Issues of Indian Economy	DSC	100-199
<b>Multi-Disciplinary Course (can select one)</b>			
UK1MDCECO100	Economics for Everyone	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.
<b>I</b>	<b>Introduction to Economics</b>		<b>10</b>
	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	
<b>II</b>	<b>Principles of Micro Economics</b>		<b>15</b>
	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.	
<b>III</b>	<b>Principles of Macroeconomics</b>		<b>15</b>
	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.	
<b>IV</b>	<b>Economic Development and International Trade.</b>		<b>10</b>
	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.	
<b>V</b>	<b>Analysis of Economic Issues</b>		<b>10</b>
	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](http://www.mospi.nic.in)

[www.censusindia.gov.in](http://www.censusindia.gov.in)

### **Course Outcomes**

<b>No.</b>	<b>Upon completion of the course, the graduate will be able to</b>	<b>Cognitive Level</b>	<b>PSO addressed</b>
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
CO-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)**

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

	PS O1	PS O2	PSO 3	PSO 4	PS O5	PSO 6	PO 1	PO 2	PO3	PO 4	PO 5	PO-6	P O 7	P O -8
CO 1	3	-	-	-	-	-	3							
CO 2	3	3	-	-	-	-		3						
CO 3	-	2		-	-	-		2						
CO 4	-	-	3		-	2			3				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	✓	✓		✓



University of Kerala

Discipline	<b>ECONOMICS</b>				
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	<b>Demand, Supply, and Equilibrium</b>		<b>12</b>
	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	
<b>II</b>	<b>Consumer Behavior</b>		<b>15</b>
	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	
<b>III</b>	<b>Theory of Production and Costs</b>		<b>12</b>
	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.	
<b>IV</b>	<b>Market Structures and Welfare Economics</b>		<b>12</b>
	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.	
<b>V</b>	<b>Application Sessions</b>		<b>9</b>
	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. Rubinfeld & 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	PSO5	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	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
<b>I</b>	<b>Structural Issues in Indian Economy</b>		<b>10</b>
	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	
<b>II</b>	<b>Status of Indian Agriculture</b>		<b>10</b>
	5	Role of Agriculture in Indian Economy – Green Revolution	
	6	Growth Trends in Agriculture; Productivity -PDS	
	7	Hunger- Malnutrition and Food Security in India	
<b>III</b>	<b>Challenges in Industry and Service Sector in India</b>		<b>13</b>
	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	



<b>IV</b>	<b>Public Policy and Foreign Trade</b>		<b>15</b>
	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	
<b>V</b>	<b>Understanding the Indian Economy: Case Studies</b>		<b>12</b>
	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](http://planningcommission.nic.in/reports/genrep/pov_rep0707.pdf)

Tendulkar Committee Report available at

[http://planningcommission.gov.in/eg\\_poverty.htm](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	-	-	✓	✓

## 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	
<b>II</b>	<b>Macroeconomic Concepts, Issues and Policies</b>		<b>12</b>
	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.	
<b>III</b>	<b>Socio-Economic Issues in India</b>		<b>10</b>
	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		
<b>IV</b>	<b>Banking and Capital Market</b>			<b>8</b>
	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		
<b>V</b>	<b>Activity</b>			<b>5</b>
	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, 3<sup>rd</sup> 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	-

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

### SEMESTER II

Discipline Specific Core				
2	UK2DSCECO100	Tools for Economic Analysis	DSC	100-199
	UK2DSCECO101	Fundamentals of Macroeconomics	DSC	100-199
	UK2DSCECO103	Managerial Economics	DSC	100-199
Multi-Disciplinary Course (can select one)				
2	UK2MDCECO100	Global Economic Issues	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	<ol style="list-style-type: none"> <li>1. Proficiency in basic mathematics, including arithmetic, algebra, and geometry, is essential.</li> <li>2. Strong logical reasoning skills and an interest in economics are advantageous for effective learning and application of the course content.</li> </ol>
Course Summary	<p>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.</p>

### Detailed Syllabus:

Module	Unit	Content	Hrs
<b>I</b>	<b>Mathematics Fundamentals for Economics</b>		<b>10</b>
	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
<b>II</b>	<b>Sets, Relations, and Economic Functions</b>		<b>12</b>
	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
<b>III</b>	<b>Visual Techniques in Economic Graphs and Functions</b>		<b>13</b>
	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
<b>IV</b>	<b>Foundations of Data Analysis: Understanding and Applying Statistical Measures</b>		<b>13</b>
	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.	
<b>V</b>	<b>Activity: Data Presentation Workshop</b>		<b>12</b>
		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	<b>ECONOMICS</b>				
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
<b>I</b>	<b>Introduction to Macroeconomics and National Income Accounting</b>		<b>10</b>
	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	
<b>II</b>	<b>Classical and Keynesian Systems.</b>		<b>15</b>
	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.	
<b>III</b>	<b>Inflation and unemployment</b>		<b>12</b>
	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	
<b>IV</b>	<b>Economic growth, Trade, and business cycles</b>		<b>15</b>
	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.	
<b>V</b>	<b>Macro-economic data</b>		<b>8</b>
	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	PS O4	PS O5	PS O6	PO1	PO2	PO 3	PO 4	PO5	PO 6	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	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.
<b>I</b>	<b>Principles of Managerial Economics</b>		<b>15</b>
	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	
<b>II</b>	<b>Production Analysis and Cost of Production</b>		<b>12</b>
	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	
<b>III</b>	<b>Market Structure and Theory of the Firm</b>		<b>12</b>

	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	
<b>IV</b>	<b>Pricing Theory</b>		<b>15</b>
	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	
<b>V</b>	<b>Managerial Economics in Practice</b> (This Module includes a set of case studies any of which each student is required to do)		<b>6</b>
	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', 2<sup>nd</sup> Edition, Business Press Thomson Learning
7. Michael R Baye, Jeffrey 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,' 8<sup>th</sup> 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		✓	✓	

## 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
<b>I</b>	<b>Introduction to the Global Economy</b>		<b>10</b>
	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 5	International Cooperation; Relevance of G-7, G-20, BRICS and RCEP Deglobalization and the World Economy	
<b>II</b>	<b>Global Economy: Geo-Political Issues</b>		<b>12</b>
	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	
<b>III</b>	<b>Global Environmental Challenges</b>		
	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			
<b>IV</b>	<b>Global Issues in Trade</b>				<b>8</b>
	13	International Trade; Changing trends, Rise of Emerging Markets, Barriers to Trade in Goods and Services.			
	14	Trade and Environment			
	15	WTO and Trade			
<b>V</b>	<b>Global Economic Issues - Case Studies</b>				
	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](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	PSO5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
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	✓	✓	✓	✓

## SEMESTER III

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

### Discipline Specific Core



University of Kerala

Discipline	ECONOMICS
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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
<b>I</b>	<b>1</b>	<b>Consumer Theory</b>	<b>10</b>
		<p>Description of consumer preferences (representing preferences with indifference curves)-properties of indifference curves-budget constraint-consumer's equilibrium-income and price changes-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.</p>	
	2	<p>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.</p>	
<b>II</b>	<b>3</b>	<b>Producer Theory</b>	<b>15</b>
		<p>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.</p>	
		<p>Modern Theory of cost: short run and long run – engineering cost- Economies and diseconomies of scale.</p>	

<b>III</b>	<b>The market structure under Perfect Competition and Monopoly</b>		<b>10</b>
	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.		
<b>IV</b>	<b>Market Structure under Monopolistic Competition and Oligopoly and Welfare Economics</b>		<b>15</b>
	Monopolistic Competition-non-price competition and selling cost-short run 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.		
<b>V</b>	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 .		<b>10</b>

### References

1. Karl E. Case and Ray C. Fair, Sharon M. Oster, Principles of Micro Economics, Pearson Education Inc., 11<sup>th</sup> Edition, 2014
2. Robert Pindyck & Daniel Rubinfeld, Microeconomics (8<sup>th</sup> edition), Pearson Education, 2017
3. Dominick Salvatore, Principles of Microeconomics (8<sup>th</sup> edition), Oxford University

Press, 2009

4. D N Dwivedi, Microeconomics: Theory and Applications (4th Edition), Visionias, 2024.
5. GSMadala and Ellen Miller, Micro Economics-Theory and Applications, Tata McGraw Hill, 2004.
6. Hal R Varian, Intermediate Microeconomics: A Modern Approach 8th edition, 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 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	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	Evaluate the 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			

### Correlation Levels:

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
<b>I</b>	<b>Introduction</b>		<b>15</b>
	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		
<b>II</b>	<b>Human Resource Planning Strategy</b>		<b>10</b>
	5	Strategic planning-organizational strategy	
	6	Human resource as a core competency	
	7	Human resource strategy and organization life cycle	
	8		
<b>III</b>	<b>Human Resource Planning: Process, Methods and Techniques</b>		<b>12</b>
	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.	
<b>IV</b>	<b>Human Resource Planning, Development and Management</b>		<b>15</b>
	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.	
<b>V</b>	<b>Case Studies</b>		<b>8</b>
	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	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	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	Unit		
<b>I</b>		<b>Introduction to Economic Demography</b>	<b>10 Hrs</b>
		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	
<b>II</b>		<b>Population Dynamics</b>	<b>15 Hrs</b>
		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.	
<b>III</b>		<b>Theories of Population</b>	<b>10 Hrs</b>
		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	
<b>IV</b>		<b>Demographic Data Base of India</b>	<b>15 Hrs</b>
		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.	
<b>V</b>		<b>An analytical study</b>	<b>10 Hrs</b>
		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
<b>CO 1</b>	3	-	2	-	-	-	-	-	-	-	-	3
<b>CO 2</b>	-	-	3	-	-	-	3	3	-	-	-	2
<b>CO 3</b>	-	3	-	-	-	-	3	3	-	-	-	3
<b>CO 4</b>	-	-	3	-	-	-	3	3	-	2	-	2
<b>CO 5</b>	-	2	3	-	-	-	3	3	-	-	2	3

**Correlation Levels:**

<b>Level</b>	<b>Correlation</b>
-	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
<b>CO 1</b>	√			√
<b>CO 2</b>		√		√
<b>CO 3</b>	√	√		√
<b>CO 4</b>		√		√
<b>CO 5</b>	√	√		√



University of Kerala

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	<p>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.</p>				

Detailed Syllabus:

Module	Unit	Content	Hrs
I	<b>MONEY</b>		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	<b>INTRODUCTION TO BANKING</b>		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	<b>CENTRAL BANK</b>		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	<b>DIGITAL BANKING AND E-COMMERCE</b>		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	<b>Bank visit</b>		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	<b>Behavioural Economics</b>				
Type of Course	<b>DSE</b>				
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
<b>I</b>	<b>Introduction to Behavioural Economics</b>		<b>12</b>
	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	
<b>II</b>	<b>Decision-Making Under Risk and Uncertainty</b>		<b>15</b>
	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	
<b>III</b>	<b>Game Theory with Behavioural insights</b>		<b>15</b>

	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	
<b>IV</b>	<b>Nudges and Choice Architecture</b>		<b>10</b>
	11	Introduction to Nudges	
	12	Choice architecture and libertarian paternalism	
	13	Nudges in Practice- Real-world examples	
<b>V</b>	<b>Applications of Behavioural Economics</b>		<b>8</b>
	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 MacMillan 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, Wealth, 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	PSO5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
<b>CO 1</b>	1	1	-	-	-	-	3	2	-	-	-	-	-	-
<b>CO 2</b>	2	3	-	-	3	-	3	3	-	-	-	-	-	-
<b>CO 3</b>	2	-	1	-	3	-	3	2	3	-	-	2	-	-
<b>CO 4</b>	1	2	3	-	-	-	3		2	2	-	-	-	-
<b>CO 5</b>	-	-	3	-	2	-	3	3	3	2	-	2	-	-

**Correlation Levels:**

<b>Level</b>	<b>Correlation</b>
-	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		✓		✓

## 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	<p>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.</p>				

### 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	
<b>II</b>	<b>Global warming and Ozone Layer Depletion</b>		<b>12</b>
	6	Greenhouse gases: role of CO <sub>2</sub> , role of CH <sub>4</sub> , Global warming potential, CO <sub>2</sub> Emission	
	7	Human Emission of CO <sub>2</sub> , 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	
<b>III</b>	<b>Impact of Climate Change and Global Warming</b>		<b>10</b>
	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	
<b>IV</b>	<b>Sustainable Development and Environmental Policy and Governance</b>		<b>6</b>
	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	
<b>V</b>	<b>FIELD SURVEY</b>		<b>5</b>
	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 :**

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



## SEMESTER IV

<b>Discipline Specific Core</b>			
UK4DSCECO200	Macroeconomics -1	DSC	200-299
UK4DSCECO201	Mathematics for Economics-I	DSC	200-299
<b>Discipline-Specific Elective (can select one)</b>			
UK4DSEECO200	Environmental Economics	DSE	200-299
UK4DSEECO201	Foundations of Data Science	DSE	200-299
<b>Value Added Course</b>			
UK4VACECO200	Public Policy, Value, and Ethics	VAC	200-299
UK4VACECO201	Women and Development	VAC	200-299
<b>Skill Enhancement Course (can select one)</b>			
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	<u>MACROECONOMICS-I</u>

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
<b>I</b>	<b>Title of the Module - National Income Accounting</b>		<b>10</b>
	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.	
<b>II</b>	<b>Title of the Module- Classical and Keynesian Macroeconomics</b>		<b>10</b>
	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.	
<b>III</b>	<b>Title of the Module – Closed Economy in the short run</b>		<b>15</b>
	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.	
<b>IV</b>	<b>Title of the Module-Theories of Consumption and Investment</b>		<b>15</b>
	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	
<b>V</b>	<b>Title of the Module-: Analytical Exercises</b>		<b>10</b>

		<ol style="list-style-type: none"> <li>1. Estimate different measures of national income such as GDP, GNP, and GVA using the RBI database. <a href="http://DBIE(rbi.org.in)">DBIE (rbi.org.in)</a></li> <li>2. Estimate trends and components of India's inflation from the RBI database.</li> </ol>	
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### **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	PSO5	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 (10<sup>th</sup> 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
<b>I</b>	<b>Differential Calculus</b>		<b>15</b>
	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.	
<b>II</b>	<b>Differential Calculus: Multivariable Functions</b>		<b>8</b>
	5	Multivariable Function - Partial Differentiation – Second Order Partial Differentiation- Total Differentiation	
	6	Maxima and Minima of Multivariable Functions	
<b>III</b>	<b>Integral Calculus and its Applications</b>		<b>10</b>
	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.	

<b>IV</b>	<b>Elements of Linear Algebra</b>		<b>15</b>
	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	
<b>V</b>	<b>Mathematical Analysis in Economics</b>		<b>12</b>
		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

<b>No.</b>	<b>Upon completion of the course, the graduate will be able to</b>	<b>Cognitive Level</b>	<b>PSO addressed</b>
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/PS O	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	PS O5	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

### 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

**FYUGP-ECONOMICS**

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

### Detailed Syllabus:

Module	Unit	Content	Hrs
<b>I</b>	<b>Fundamentals of Environmental Economics</b>		<b>10</b>
	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	
<b>II</b>	<b>Environmental Externalities</b>		<b>12</b>
	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	
<b>III</b>	<b>Environmental Valuation</b>		<b>15</b>
	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	
<b>IV</b>	<b>Climate Change and Sustainable Development</b>		<b>15</b>
	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	
<b>V</b>	<b>FIELD SURVEY</b>		
	20	To conduct a recent survey and make a report regarding environmental issues of the locality in association with Block/Village Disaster Management Committees	<b>8</b>

### 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	-	-	-	-	-
<b>Level</b>				<b>Correlation</b>										
-				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				
<b>Module</b>	<b>Unit</b>	<b>Content</b>			<b>Hrs</b>

<b>I</b>	<b>Introduction to Data Science</b>		<b>10</b>
	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	
<b>II</b>	<b>Data Processing techniques- Software- Python</b>		<b>15</b>
	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	
<b>III</b>	<b>Machine Learning for Economic Prediction</b>		<b>15</b>
	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	
<b>IV</b>	<b>Clustering and data visualization</b>		<b>10</b>
	13	Basic concepts and Partitioning methods	
	14	Clustering Methods-hierarchical- agglomerative clustering	
	15	Data Visualization: Basic principles, ideas and tools for data visualization	
<b>V</b>	<b>Case Studies and Projects- Software Python</b>		<b>10</b>
	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:**

	PS O1	PS O2	PS O3	PSO 4	PS O5	PS O6	PO1	PO2	PO3	PO4	PO5	PO 6	PO 7	PO 8
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	
<b>Level</b>				<b>Correlation</b>										
-				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
<b>I</b>	<b>Introduction</b>		<b>10</b>
	1	Public policy and governance.	
	2	Principles of good governance- accountability, transparency, integrity, and public good.	
	3	Good Governance, Values and Ethics.	
<b>II</b>	<b>Distributive Justice</b>		<b>10</b>
	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).	
<b>III</b>	<b>Economics and Public Policy</b>		<b>12</b>
	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.	
<b>IV</b>	<b>Globalization and Governance</b>		<b>8</b>
	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.	
<b>V</b>	<b>Activity</b>		<b>5</b>
		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**

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 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	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	-	-		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
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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
<b>I</b>	<b>Introduction</b>		<b>10</b>
	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.	
<b>II</b>	<b>Gender in policies</b>		<b>8</b>
	4	Involving gender into development policies - Gender planning techniques, Gender-sensitive governance, and Gender Budgeting.	
<b>III</b>	<b>Women in Society</b>		<b>12</b>
	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.	
<b>IV</b>	<b>Women and Work</b>		<b>10</b>
	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.	
<b>V</b>	<b>Field survey</b>		<b>5</b>
	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. Babcock, 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 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
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 :**

	PS O1	PS O2	PS O3	PS O4	PS O5	PSO6	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	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
	<b>3</b>	<b>3 hours</b>	-	-	<b>3</b>
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
<b>I</b>	<b>FINANCIAL MARKET AND THE ECONOMY</b>		<b>6</b>
	1	Financial Market; Meaning, Types, Function	
	2	Financial Institutions and Economic Development	
	3	Role of Financial intermediaries; payments mechanism, maturity transformation, risk transformation	
<b>II</b>	<b>APPROACHES TO SECURITY MARKET ANALYSIS</b>		<b>8</b>
	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	
<b>III</b>	<b>SECONDARY MARKET AND STOCK EXCHANGES IN INDIA</b>		<b>14</b>
	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	
<b>IV</b>	<b>PORTFOLIO INVESTMENT AND MUTUAL FUNDS</b>		<b>8</b>
	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	
<b>V</b>	<b>INTERNSHIP/TRAINING/CERTIFICATION</b>		<b>9</b>
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	
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## 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](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, 7<sup>th</sup> 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, 6<sup>th</sup> ed., McGraw-Hill.
16. M.Y. Khan (2019), Indian Financial System, 11<sup>th</sup> Edn, Mc Graw Hill Education.
17. Kumar, SSS, (2007), Financial Derivatives 5<sup>th</sup> ed, PHI Learning Private Ltd
18. Robert W Kolb, James A Overdabl, Futures, Options and Swaps, 5<sup>th</sup> ed., Wiley – Blackwell
19. Michael Ferrari, Frank J Fabozzi, Franco Modigliani (2001), Foundations of Financial
20. Markets and Institutions, 4<sup>th</sup> 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:

	PS O1	PS O2	PS O3	PSO 4	PS O5	PS O6	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
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
	4	4 hours	-	-	4
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.
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### Detailed Syllabus:

Module	Unit	Content	Hrs
I	<b>Concepts of Logistics and Supply Chain</b>		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	<b>Logistics and Procurement</b>		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	<b>Transportation Economics</b>		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	<b>Pricing of Transport</b>		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	<b>Activity</b>		5
	23	Analyse the logistics industry in India: <a href="https://data.gov.in/search?title=logistics">https://data.gov.in/search?title=logistics</a>	
	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". <a href="http://www.oecdilibrary">http://www.oecdilibrary</a> .	

		org.prx.library.gatech.edu/	
	25	Using the database in the website: <a href="https://portwatch.imf.org/">https://portwatch.imf.org/</a> , 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 :

	<b>Internal Exam</b>	<b>Assignment</b>	<b>Project Evaluation</b>	<b>End Semester Examinations</b>
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4		✓		✓
CO 5		✓		✓

## SEMESTER V

<b>Discipline Specific Core</b>				
5	UK5DSCECO300	Indian Economy	DSC	300-399
	UK5DSCECO301	International Economics -1	DSC	300-399
	UK5DSCECO302	Statistical Methods for Economics	DSC	300-399
<b>Discipline-Specific Elective (can select two)</b>				
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
<b>Skill Enhancement Course (can select one)</b>				
5	UK5SECECO300	Start-Up Management	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
<b>I</b>	<b>Overview of Indian Economy</b>		<b>10</b>
	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	
<b>II</b>	<b>Population and Human Development</b>		<b>12</b>
	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	
<b>III</b>	<b>Sectoral Composition of the Indian Economy</b>		<b>14</b>

	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	
<b>IV</b>	<b>Economic Reforms</b>		<b>12</b>
	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	
<b>V</b>	<b>Group Activity designed by the Tutor</b>		
	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	<b>12</b>

### Basic Readings

1. Uma Kapila, (2022), 33<sup>rd</sup> 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](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.msc.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](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](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 PSO-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:

<b>Module I</b>	<b>Theories of International trade</b>	<b>15 Hrs</b>
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.	
<b>Module II</b>	<b>Advanced Theories</b>	<b>15 Hrs</b>
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.	
<b>Module III</b>	<b>Intra-Industry trade</b>	<b>10 Hrs</b>

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.	
<b>Module IV</b>	<b>Technical Progress and Trade</b>	<b>10 Hrs</b>
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.	
<b>Module V</b>	<b>Case Study</b>	<b>10 Hrs</b>
	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) <a href="https://commerce.gov.in/trade-statistics/">https://commerce.gov.in/trade-statistics/</a> (2) <a href="https://data.imf.org/?sk=9d6028d4f14a464ca2f259b2cd424b85">https://data.imf.org/?sk=9d6028d4f14a464ca2f259b2cd424b85</a>	

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
<b>I</b>	<b>Index Numbers and Time Series</b>		<b>15</b>
	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	
<b>II</b>	<b>Correlation and Regression</b>		<b>15</b>
	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	
<b>III</b>	<b>Elementary Probability Theory</b>		<b>12</b>
	8	Sample spaces and events	
	9	Probability axioms and properties	
	10	Conditional probability and Bayes' rule; independence	
<b>IV</b>	<b>Random Variables and Probability Distributions</b>		<b>12</b>
	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).	
<b>V</b>	<b>Application</b>		<b>6</b>
	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
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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 :**

	PS O1	PSO 2	PSO 3	PSO4	PS O5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6

<b>CO 1</b>	3	2	-	-	-	-	3	2	1			
<b>CO 2</b>	2	3	-	-	-	-	3	2	1			
<b>CO 3</b>	2	3		1	-	-	2	3	1			
<b>CO 4</b>	2	-	3		-	-	3	2	1			
<b>CO 5</b>	3		2	-	-	-	1	2	3			
<b>CO 6</b>	-	-	-		-	-						

**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	UK5DSEECO300				
Course Title	Research Methodology in Economic				
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
<b>I</b>	<b>Fundamentals of Research and Research Design</b>		<b>15</b>
	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	
<b>II</b>	<b>Methodology of Research</b>		<b>15</b>
	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	
<b>III</b>	<b>Data Analysis</b>		<b>15</b>
	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)	
<b>IV</b>	<b>Interpretation and Report Writing</b>		<b>10</b>
	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	
<b>V</b>	<b>Case works</b>		<b>5</b>
	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) Research 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	PSO5	PSO 6	PO1	PO 2	PO3	PO 4	PO 5	PO6	PO -7	PO - 8
<b>CO 1</b>	3	-	-	-	-	-	3							
<b>CO 2</b>		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	<u>PUBLIC ECONOMICS</u>				
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.				
<b>Module</b>	<b>Unit</b>	<b>Content</b>			<b>Hrs</b>
I	1	<b>Introduction to Public Economics</b>			10 Hrs
		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			
		<b>Public Revenue and Debt</b>			

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	<b>Public Expenditure</b>		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	<b>Fiscal Federalism and Budgeting</b>		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	<b>Activity</b>		10 Hrs
	<p>Make an evaluative report on the public revenue, public debt, and expenditure structure and its trends in India.</p> <p style="text-align: center;"><b>OR</b></p> <p>Prepare an evaluative report on the efficiency of the present indirect tax structure in India.</p>		

**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](http://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 -3,6,
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
<b>CO 1</b>	3	2	-	-	-	-	3	-	-	-	-	3
<b>CO 2</b>	-	3	3	-	-	-	-	3	2	-	2	3
<b>CO 3</b>	-	2	3	-	-	-	-	3	2	-	2	-
<b>CO 4</b>	-	2	3	-	-	3	3	2	2	-	2	3
<b>CO 5</b>	-	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
<b>I</b>	<b>Introduction to Artificial Intelligence and Machine Learning</b>		<b>8</b>
	1	Overview of AI and ML concepts	
	2	History and development of AI and ML	
	3	Applications of AI and ML in Economics	
<b>II</b>	<b>Familiarization of Packages for AI and ML</b>		<b>14</b>
	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	
<b>III</b>	<b>Foundations of Machine Learning – Software Python</b>		<b>15</b>
	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	
<b>IV</b>	<b>Data Pre-processing, Feature Engineering and Predictive Modelling in Economics</b>		<b>15</b>
	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	
<b>V</b>	<b>Case Studies and Applications</b>		<b>8</b>
	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.					
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**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
<b>CO 1</b>	2	1	3	-	-	-	1	3	2				
<b>CO 2</b>	2	1	3	-	-	-	1	3	2				
<b>CO 3</b>	1	2	3	-	-	-	2	3	1				
<b>CO 4</b>	1	2	3		-	-	1	3	2				
<b>CO 5</b>	1	2	3	-	-	2	1	2					3
<b>CO 6</b>	-	-	-	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
<b>I</b>	<b>Start-up Ecosystem</b>		<b>9</b>
	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	
<b>II</b>	<b>Start-up Requirements</b>		<b>10</b>
	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	
<b>III</b>	<b>Starting up Financial Issues</b>		<b>8</b>
	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	
<b>IV</b>	<b>Start-up Strategies</b>		<b>9</b>
	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	
<b>V</b>	<b>Tutor designed Module</b>		<b>9</b>
	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 & Economics](#) An essential guide to building supportive entrepreneurial communities.

[Gerardus BlokdykAA World Services](#) 2018 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 2011 by [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 strategy 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 strategy 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 :

	PS O1	PSO 2	PSO 3	PS O4	PSO 5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO 1	2	-	-	-	-	-	2	-	-	-	-	-	-	-
CO 2	-	-	3	-	-	-	2	1	-	-	-	-	-	-

<b>CO 3</b>	-	-	-	-	-	2	2	3	-	-	-	1	-	-
<b>CO 4</b>	-	-	-	-	-	1	3	-	1	-	-	-	-	-
<b>CO 5</b>	-	2	-	-	-	3	-	2	-	-	-	2	-	-

**Correlation Levels:**

<b>Level</b>	<b>Correlation</b>
-	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

<b>Discipline Specific Core</b>				
6	UK6DSCECO300	Econometrics -I	DSC	300-399
	UK6DSCECO301	Development Economics	DSC	
	UK6DSCECO302	International Economics -II	DSC	300-399
<b>Discipline-Specific Elective (can select two)</b>				
6	UK6DSEECO300	Kerala Economy	DSE	300-399
	UK6DSEECO302	Gender Economics	DSE	300-399
<b>Skill Enhancement Course (can select one)</b>				
6	UK6SECECO300	Introduction to Academic Writing in Social Science	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:**

<b>Module</b>	<b>Unit</b>	<b>Content</b>	<b>Hrs</b>
<b>I</b>	<b>Nature and Scope of Econometrics</b>		<b>10</b>
	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	
<b>II</b>	<b>Model Estimation</b>		<b>12</b>
	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	
<b>III</b>	<b>Multiple Linear Regression Model</b>		<b>15</b>
	8	Estimation of parameters; properties of OLS estimators	
	9	Goodness of fit - R <sup>2</sup> and adjusted R	
	10	Partial regression coefficients; testing hypotheses – individual and joint; functional forms of regression models	
	11	Qualitative (dummy) independent variables	
<b>IV</b>	<b>Violation of CLRM assumptions</b>		<b>15</b>
	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.	
<b>V</b>	<b>Case studies</b>		<b>8</b>
	16	<b>Application of simple and multiple regression models using GRETL and interpreting the result</b>	

**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 :**

	P S O 1	PSO 2	PSO 3	PSO4	PS O5	PSO 6	PO1	PO2	PO3	PO4	PO 5	PO6
<b>CO 1</b>	2	3	-	-	-	-	2	3				
<b>CO 2</b>		1	3	-	-	2	1	2	3			
<b>CO 3</b>	2	1	3	-	-		2	3	1			
<b>CO 4</b>	3	-	2		-		1	3	2			
<b>CO 5</b>	2	3	-	-	-	-	2	3	1			

CO 6	-	-	-		-	-						
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**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
<b>I</b>	<b>Concepts and Measures of Development</b>		<b>15</b>
	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	
<b>II</b>	<b>Issues in Economic Development</b>		<b>12</b>

	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	
<b>III</b>	<b>Growth Models</b>		<b>15</b>
	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	
<b>IV</b>	<b>Theories of Economic Development</b>		<b>13</b>
	10	Development theories- Lewis Theory of Unlimited Supply of Labour, Leibenstein's Critical Minimum Effort Thesis, Balanced and Unbalanced Growth Theories, Dualistic theories	
<b>V</b>	<b>Development Economics in Practice- Case Studies</b> (This Module includes a set of case studies any of which each student is required to do)		<b>5</b>
	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, 15<sup>th</sup> edition, Vishal Publishing Co.
7. Subrata Ghatak (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	PSO5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
<b>CO 1</b>	3	2	-	1	-	-	3	2	1	-	-	-	-
<b>CO 2</b>	1	3	2	-	-	-	3	2	1	-	-	-	-
<b>CO 3</b>	1	3	2	-	-	-	1	3	2	-	-	-	-
<b>CO 4</b>	-	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	
<b>Module III</b>		<b>International Finance</b>	<b>10 Hrs</b>
	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	
<b>ModuleIV</b>		<b>Trade Policy &amp; Economic Integration</b>	<b>12 Hrs</b>
	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.	
<b>Module V</b>		<b>Activity</b>	<b>08 Hrs</b>
		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. <a href="https://www.imf.org/en/Publications/WEO/weo-database/2024/April">https://www.imf.org/en/Publications/WEO/weo-database/2024/April</a>  2. <a href="https://data.imf.org/?sk=7a51304b-6426-40c0-83dd-ca473ca1fd52">https://data.imf.org/?sk=7a51304b-6426-40c0-83dd-ca473ca1fd52</a>	

### 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, 11<sup>th</sup> 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
<b>CO 1</b>	1	1	1	-	-	-	3	-	-	-	-	3
<b>CO 2</b>	3	2	2	-	-	-	3	2	-	1	-	3
<b>CO 3</b>	1	1	1	-	-	-	3	-	-	-	-	-
<b>CO 4</b>	3	3	2	-	-	-	3	2	-	-	-	3
<b>CO 5</b>	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	✓	✓	✓	✓

## 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
<b>I</b>	<b>Economic Growth and Structure of Kerala Economy</b>		<b>10</b>
	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	
<b>II</b>	<b>Demographic and Socio-Economic Changes</b>		<b>10</b>
	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	
<b>III</b>	<b>Sector Wise Analysis-Agriculture, Industry&amp; Service Sector in Kerala</b>		<b>18</b>
	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.	
<b>IV</b>	<b>State Finances &amp; Development Issues</b>		<b>10</b>
	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	
<b>V</b>	<b>Understanding Kerala Economy (Case Studies)</b>		<b>12</b>
	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
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18. Zachariah, K. C., & Irudaya Rajan, S. (2015). Dynamics of emigration and remittances in Kerala: Results from the Kerala migration survey 2014.
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## 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	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	-
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**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 :**

	<b>Internal Exam</b>	<b>Assignment</b>	<b>Project Evaluation</b>	<b>End Semester Examinations</b>
CO 1	✓	-	-	✓
CO 2	✓	✓	-	✓
CO 3	✓	✓	-	✓
CO 4	-	-	✓	✓



**University of Kerala**

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
<b>I</b>	<b>Introduction to Gender Economics</b>		<b>15</b>
	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.	
<b>II</b>	<b>Gender division of labor</b>		<b>15</b>
	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.	
<b>III</b>	<b>Gender Discrimination</b>		<b>10</b>

	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)	
<b>IV</b>	<b>Engendering in the Social, Political, and Economic Context</b>		<b>15</b>
	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.	
<b>V</b>	<b>Case works</b>		<b>5</b>
	15	Using different data sets like PLFS data issues like women's work participation rates can be analysed.	

### Reading List

1. Babcock, 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. Kabear, 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	PSO5	PSO 6	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO -7	PO -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	<p>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.</p> <p>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.</p>				
Course Summary	<p>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.</p>				

### Detailed Syllabus:

Module	Unit	Content	Hrs
I	<b>Elements of Academic Writing</b>		<b>9</b>
	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.	
		<i>Integration of Examples: Incorporate examples specific to the field of social science to make the content more relevant to students' interests and studies.</i> <i>Interactive Activities: Include interactive activities or exercises to allow students to practice different types of academic writing and receive feedback.</i>	
<b>II</b>	<b>Literature Review and Formulating the Research Question</b>		<b>7</b>
	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	
		<i>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.</i> <i>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.</i>	
<b>III</b>	<b>Writing a Formal Research Paper in the Social Sciences</b>		<b>9</b>
	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.	
		<i>Hands-on Practice: Engage students in hands-on activities where they draft and refine their research paper under the guidance of instructors</i>	
<b>IV</b>	<b>Fundamentals of Research Ethics and Peer Review Process in Academic Publishing</b>		<b>8</b>
	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.	
		<i>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.</i>	
<b>V</b>	<b>Academic Journal Finder and Research Publication</b>		<b>12</b>
		<ul style="list-style-type: none"> <li>• 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.</li> <li>• Offer tips and strategies for navigating the submission process for economics journals, including manuscript preparation, submission guidelines, and responding to reviewer comments.</li> </ul>	
		<i>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</i>	

### 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
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**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	PS O5	PS O6	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
<b>CO 1</b>	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>

## Semester VII

Discipline Specific Core			
UK7DSCECO400	Microeconomics-II	DSC	400-499
UK7DSCECO401	Macroeconomics-II	DSC	400-499
Discipline-Specific Elective (can select one)			
UK7DSEECO301	Mathematics for Economics 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
<b>I</b>	<b>The Marginalist Controversy and Alternative Theories of the Firm</b>	<b>15</b>
	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.	
<b>II</b>	<b>Game Theory</b>	<b>15</b>

	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-moveversusequential-movegames-prisoner'sdilemma- dominant strategies- Nash equilibrium- pure strategies - mixed strategies- Repeated games-sequential games-applications of the game theory.	
<b>III</b>	<b>General Equilibrium and Welfare Economics</b>	<b>15</b>
	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.	
<b>IV</b>	<b>Economics of Uncertainty and Information</b>	<b>10</b>
	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.	
<b>V</b>	Identify cases where game theory is used in real-world situations, conduct a case Study and submit report.	<b>5</b>

## References

1. Varian, Hal R., Intermediate Microeconomics, 8TH Edition, Affiliated East-West Press.
2. Stonier, Alfred W. & Hague, Douglas C., A Textbook of Economic Theory, 5TH Edition, Pearson.
3. Koutsoyiannis, A., Modern Microeconomics, 2ND Edition, Palgrave Macmillan.
4. Pindyck, Robert & Rubinfeld, Daniel. Microeconomics, 8th Edition, Pearson.
5. Maddala G.S. and Miller (2004), MicroEconomics-Theory and Applications, Tata McGraw Hill.
6. Salvatore Dominick, MicroEconomics: Theory and Applications, Oxford University Press.
7. Gibbons, R. (1992). Game Theory for Applied Economists. Princeton, New Jersey: Princeton University Press.
8. Nicholson & Snyder. Intermediate Microeconomics and its Application (11th ed). 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 arrive at 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 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 :**

	<b>PS O 1</b>	<b>PSO 2</b>	<b>PSO 3</b>	<b>PSO 4</b>	<b>PSO 5</b>	<b>PSO 6</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>
<b>CO 1</b>	3	-	3	-	-	-	2	1	-	-	-	-
<b>CO 2</b>	3	-	3	-	-	-	3	3	-	-	-	-
<b>CO 3</b>	3	-	1	-	-	-	3	2	-	-	-	-
<b>CO 4</b>	3	-	2	3	-	-	3	2	2	-	-	-
<b>CO 5</b>	3	1	2	-	-	-	2	3	1	-	-	1
<b>CO 6</b>	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
<b>I</b>	<b>Title of the Module - Open Economy Macro Model</b>		<b>15</b>
	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.	
<b>II</b>	<b>Title of the Module- Theory of Inflation and Unemployment</b>		<b>15</b>
	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.	
<b>III</b>	<b>Title of the Module -Business Cycle</b>		<b>15</b>

	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	
<b>IV</b>	<b>Title of the Module-Modern Development in Macro Economics –Classical School</b>		<b>20</b>
	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	
<b>V</b>	<b>Title of the Module-: Activities for students</b>		<b>10</b>
		<p>3. Give exercises for estimating the relationship between unemployment and inflation data from the RBI database.<a href="http://rbi.org.in">DBIE (rbi.org.in)</a></p> <p>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)<a href="http://rbi.org.in">DBIE (rbi.org.in)</a></p>	

### 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	
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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 (10<sup>th</sup> 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, Prabha The 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*, Witley.
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	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	<p>1. Knowledge of calculus and linear algebra is essential for understanding economic models and data analysis techniques used in the course</p> <p>2. Basic understanding of microeconomics and macroeconomics to grasp the economic theories and concepts applied during quantitative analyses.</p>				
Course Summary	<p>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.</p>				

### Detailed Syllabus:

Module	Unit	Content	Hrs
<b>I</b>	<b>Determinants and Matrices and their Use in Economics</b>		<b>15</b>
	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	
<b>II</b>	<b>Optimization Methods in Economic Decision-Making</b>		<b>15</b>
	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	
<b>III</b>	<b>First-Order Differential Equations</b>		<b>9</b>
	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.	
<b>IV</b>	<b>First-Order Difference Equations</b>		<b>9</b>
	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	
<b>V</b>	<b>Economic Analysis and Interpretation</b>		<b>12</b>
		<p><b>Objective:</b> This module aims to apply mathematical techniques learned in the above modules to analyze real-world economic scenarios using secondary data.</p> <ul style="list-style-type: none"> <li>• Give datasets with economic info.</li> <li>• Split students into small groups, each with a scenario.</li> <li>• They use concepts from the course to analyze and solve.</li> <li>• Guide them to create mathematical representations.</li> <li>• Groups discuss and compare.</li> <li>• Each group presents findings. This helps students apply math in real-world economics.</li> </ul> <p>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.</p>	

## 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	PSO5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6
<b>CO 1</b>	2	-	-	-	-	-	2	-	-	-	-	-
<b>CO 2</b>	1	2	-	-	-	-	2	-	-	-	-	-
<b>CO 3</b>	2	1		-	-	-	2	2	-	-	-	-
<b>CO 4</b>	2	1			-	-	2	2	-	-	-	-
<b>CO 5</b>	-	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
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### 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

## 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
7	UK7DSEECO401	Mathematics for Economics 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