University of Kerala
Four-Year Undergraduate Programme
(UoK FYUGP)

Syllabus

ECONOMICS

May 2024

About the Discipline

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

Graduate Attributes

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

Program Outcomes (PO)

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

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

Programme Specific Outcomes (PSO)

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

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

FYUGP- ECONOMICS

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

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

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

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

Semester I

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

Discipline Specific Core

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<table>
<tr><td>Discipline</td><td colspan="5">ECONOMICS</td></tr>
<tr><td>Course Code</td><td colspan="5">UK1DSCECO100</td></tr>
<tr><td>Course Title</td><td colspan="5">PRINCIPLES OF ECONOMICS</td></tr>
<tr><td>Type of Course</td><td colspan="5">DSC</td></tr>
<tr><td>Semester</td><td colspan="5">I</td></tr>
<tr><td>Academic Level</td><td colspan="5">100 - 199</td></tr>
<tr><td rowspan="2">Course Details</td><td>Credit</td><td>Lecture per week</td><td>Tutorial per week</td><td>Practical per week</td><td>Total Hours/Week</td></tr>
<tr><td>4</td><td>4 hours</td><td>-</td><td>-</td><td>4</td></tr>
<tr><td>Pre-requisites</td><td colspan="5">Basic understanding of Economics</td></tr>
<tr><td>Course Summary</td><td colspan="5">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.</td></tr>
</table>

Detailed Syllabus:

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

Reading List

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

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

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

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

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

https://data.worldbank.org/

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

Economic Survey, GOI

www.mospi.nic.in

www.censusindia.gov.in

Course Outcomes

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

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

Note: 1 or 2 COs/module

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

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

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

Mapping of COs with PSOs and POs:

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO-6	PO7	PO-8
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

University of Kerala

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

Detailed Syllabus:

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

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

Reading List

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

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

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

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

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

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

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

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

Rangarajan Committee Report available at

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

Tendulkar Committee Report available at

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

Course Outcomes

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

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

Note: 1 or 2 COs/module

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

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

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

Mapping of COs with PSOs and POs :

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

Correlation Levels:

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

Assessment Rubrics:

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

Mapping of COs to Assessment Rubrics:

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

Multi-disciplinary Course (MDC)

University of Kerala

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

Detailed Syllabus:

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

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

Reading List

- Stephen Dobson and Susan Palfreman (1999): "Introduction to Economics", Oxford University Press.
- Nilanjan Banik, "The Indian Economy: A Macroeconomic Perspective", Sage Publications
- New monetary Aggregates: RBI https://www.rbi.org.in/scripts/publicationReportDetails.aspx?ID
- Chetan Ghate, The Oxford Handbook of Indian Economy", Oxford University Press
- Mihir Rakshit (2011): Inflation and Relative Prices in India 2006-10: Some Analytical and Policy Issues, Economic & Political Weekly EPW ,April 16, 2011, vol xlvi no 16
- Faboozi, J Frank, Modigliani Franco (2008): Capital Markets-Institution and Instruments. 4th ed, Pearson Education, New Delhi
- F.S Mishkin and S.G. Eakins (2011): Financial Markets and Institutions, Pearson Education,3rd Ed

Course Outcomes

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

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

Note: 1 or 2 COs/module

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

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

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

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

Mapping of COs with PSOs and POs: Correlation Levels:

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

Correlation Levels:

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

Assessment Rubrics:

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

Mapping of COs to Assessment Rubrics :

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

SEMESTER II

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

Discipline Specific Core

University of Kerala

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

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

Detailed Syllabus:

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

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

Course Outcomes

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

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

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

Note: 1 or 2 COs/module

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

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

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

Mapping of COs with PSOs and POs :

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

Correlation Levels:

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

Assessment Rubrics:

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

Mapping of COs to Assessment Rubrics :

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

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

Reference

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

Recommended Readings

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

University of Kerala

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

Detailed Syllabus:

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

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

Readings

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

Course Outcomes

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

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

Note: 1 or 2 COs/module

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

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

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

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

Mapping of COs with PSOs and POs:

	PSO 1	PSO 2	PSO 3	PSO4	PS O5	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
I		**Introduction to the Global Economy**			10
	1	World Economy at a glance; Global Growth Trends, New World Bank Country Classification by Income Level, Challenges to Growth			
	2	Economic Downturns; Great Depression, Global Financial Crisis.			
	3	Multilateral Institutions; Role of IMF, World Bank, UNDP			
	4 5	International Cooperation; Relevance of G-7, G-20, BRICS and RCEP Deglobalization and the World Economy			
II		**Global Economy: Geo-Political Issues**			12
	6	US-China Economic Relations; Consequences.			
	7	Ukraine-Russia War; Macroeconomic effects			
	8	Global Energy Crisis and Security; Oil Price Fluctuations			
	9	Covid-19 Pandemic; Impact on World Economy			
III		**Global Environmental Challenges**			
	10	Global Environmental Issues; Climate Change, Global Warming, Ozone Layer Depletion,			10
	11	Climate Change - Agreements, Conventions and Institutions			

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

Reading List

Module 1

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

Module 2

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

Module 3

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

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

Module 4

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

Course Outcomes

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

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

Note: 1 or 2 COs/module

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

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

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

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

Mapping of COs with PSOs and POs:

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

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low

2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

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

Mapping of COs to Assessment Rubrics:

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

SEMESTER III

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

Discipline Specific Core

University of Kerala

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

Detailed Syllabus:

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

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

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

References

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

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

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

Press, 2009

4. D N Dwivedi, Microeconomics: Theory and Applications (4thEdition), , Visionias,2024.
5. GSMadala and EllenMiller,MicroEconomics-Theory and Applications,Tata McGraw Hill, 2004.
6. Hal R Varian,Intermediate Microeconomics: A Modern Approach 8thedition,W.W.Norton and Company Affiliated east-West Press, 2011.
7. A.Koutsoyiannis.(1979).Modern micro economics.Palgrave McMillan.

Course Outcomes

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

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

Note:1 or2 COs/module

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

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

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

Mapping of COs with PSOs and POs

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

CorrelationLevels:

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

University of Kerala

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

Detailed Syllabus:

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

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

Reading List

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

Course Outcomes

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

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

Note: 1 or 2 COs/module

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

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

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

Mapping of COs with PSOs and POs:

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

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

Correlation Levels:

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

Assessment Rubrics:

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

Mapping of COs to Assessment Rubrics:

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

CO 3	✓	✓	-	✓
CO 4	-	✓	✓	-

Discipline Specific Elective

University of Kerala

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

Detailed Syllabus:

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

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

Essential Readings

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

Additional Reading List

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

Course Outcomes

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

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

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

Note: 1 or 2 COs/module

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

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

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

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

Mapping of COs with PSOs and POs :

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

Correlation Levels:

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

Assessment Rubrics:

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

Mapping of COs to Assessment Rubrics :

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

SEMESTER IV

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

Discipline Specific Core

University of Kerala

Discipline	ECONOMICS
Course Code	UK4DSCECO200
Course Title	MACROECONOMICS-I

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

Detailed Syllabus:

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

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

Course Outcomes

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

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

Note: 1 or 2 COs/module

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

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

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

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

Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO4	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^{th} ed,), Pearson Education
2. Andrew B. Abel and Ben S. Bernanke, Macroeconomics, Pearson Education, Inc.,7th edition, 2011

Additional Reading List

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

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

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

University of Kerala

Detailed Syllabus:

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

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

Course Outcomes

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

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

Note: 1 or 2 COs/module

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

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

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

Mapping of COs with PSOs and POs:

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

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

Correlation Levels:

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

Assessment Rubrics:

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

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

Mapping of COs to Assessment Rubrics:

Reference

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

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

Recommended Readings

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

University of Kerala

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

2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

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

Mapping of COs to Assessment Rubrics :

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

Discipline Specific Elective

University of Kerala

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

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

Detailed Syllabus:

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

Basic Readings

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

2. Hussain, M, Ahmed. 2000. Principles of Environmental Economics, Routledge, London and New York
3. Anil Shishodia and Katar Singh, 2007, Environmental Economics: Theory and Applications, Sage Publications
4. Charles Kolstad, Intermediate Environmental Economics, Oxford University Press, 2nd edition
5. Rabindra N Bhattacharya (ed) 2002, Environmental Economics: An Indian Perspective, Oxford University Press.

Additional Readings

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

Course Outcomes

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

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

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

Note: 1 or 2 COs/module

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

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

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

Mapping of COs with PSOs and POs :

Correlation Levels:

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

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

Assessment Rubrics:

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

Mapping of COs to Assessment Rubrics :

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