



MAHATMA GANDHI UNIVERSITY

Kottayam, Kerala

Undergraduate Programmes (HONOURS)
2024 Admission Onwards

SYLLABUS

SIGNATURE COURSE

Name of the College	UC College, Aluva					
Faculty/ Discipline	Economics					
Programme	BA (Hons) Economics					
Course Coordinator	Liji Lawrence					
Contributors						
Course Name	A BEGINNERS JOURNEY TO UNDERSTAND GAME THEORY					
Type of Course	DSE					
Specialization title	This Signature Course does not have a specialization.					
Course Code	MG5DSEECO02					
Course Level	300					
Course Summary	This course provides a brief introduction to game theory. The main goal is to understand the basic ideas behind the key concepts in game theory, such as equilibrium, rationality, and cooperation. The course uses very little mathematics, and it is ideal for those who are looking for a conceptual introduction to game theory. Game theory helps to understand the ways in which people behave and make decisions. Game theory is helpful to many relevant situations, such as business competition, the functioning of markets, political campaigning, jury voting, auctions and procurement contracts, and union negotiations, to name just a few.					
Semester	5	Credits			4	Total Hours
Course Details	Learning Approach	Lecture	Tutorial	Practical	Others	
		4	0	0	0	60
Pre-requisites, if any	Basic Knowledge of Economics					

Course Outcomes (CO)

Number of COs		4	
CO No.	Expected Course Outcome	Learning Domains *	PO No
1	Check the reason why we need game theory to analyze social problems	U	PO1, PO2
2	Examine Nash equilibrium as a unified solution concept and the reason why players come to play Nash equilibrium	K, U	PO3, PO4
3	Exploring the relationship between intellectual capacity of players and Nash equilibrium	A	PO1, PO9, PO10
4	Analyse the relationship between the rationality of individuals and socially desirable Outcomes	A, An	PO4, PO10

*Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S), Interest (I) and Appreciation (Ap)

CO-PO Articulation Matrix

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	3	2	-	-	-	-	-	-	-	-
CO 2	-	-	2	2	-	-	-	-	-	-
CO 3	1	-	-	-	-	-	-	-	3	2
CO 4	-	-	-	2	-	-	-	-	-	2

'0' is No Correlation, '1' is Slight Correlation (Low level), '2' is Moderate Correlation (Medium level) and '3' is Substantial Correlation (High level).

Course Content

Content for Classroom transaction (Units)

Module	Units	Course Description	Hrs	CO No.
1	WHY DO WE NEED GAME THEORY AND WHAT DOES IT TELL US?			
	1.1	What is Game Theory?	3	["1"]
	1.2	An outline of the history of game theory	2	["1"]
	1.3	The theory of rational choice	3	["1"]
	1.4	Interacting decision makers	4	["1"]
	1.5	Modelling Social Problems as a "Game"- Let's Play a Game-Card Game	3	["1"]
2	GAMES : TYPES, REPRESENTATION AND COMPONENTS			
	2.1	"Payoffs" in a Game: What Exactly Are Those Numbers?	3	["2"]
	2.2	What Does it Mean That a Player is Rational?	2	["2"]
	2.3	Strategic games- Prisoners Dilemma, Matching Pennies, The stag hunt	4	["2"]
	2.4	Best Response functions	2	["2"]
	2.5	Dominated Actions	4	["2"]
3	EQUILIBRIUM CONCEPTS			
	3.1	Idea of Dominant Strategy Equilibrium	3	["3"]
	3.2	Nash Equilibrium	5	["3"]
	3.3	Examples of Nash Equilibrium	3	["3"]
	3.4	Nash Equilibrium Illustrations : Electoral Competition, Cournot's Model	2	["3"]
	3.5	Experimental evidences on Prisoners Dilemma as an example of Nash equilibrium	2	["3"]

Module	Units	Course Description	Hrs	CO No.
4	MORE ON GAMES			
	4.1	Minmax and Maxmin Strategy-Saddle point	5	["4"]
	4.2	Mixed strategy equilibrium	3	["4"]
	4.3	Role of Information in games	2	["4"]
	4.4	Group rationality and Rationality of Individuals	2	["4"]
	4.5	Coordination Game and Self-Fulfilling Prophecy- Market Competition-Why Do People Come to Play Nash Equilibrium?	3	["4"]

Teaching and Learning Approach	Classroom Procedure (Mode of transaction) The course content will be delivered using a combination of lectures, demonstration of games and problem based discussions and illustrations. Suggested Course Delivery Methods o CD1 - Lecture by use of boards/LCD projectors/ Projectors etc. o CD2 - Tutorials/Assignments o CD3 - Class Seminars /Illustrations o CD4 - Group Discussions
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Assessment Types	MODE OF ASSESSMENT Mode of Assessment: Theory
	A. Continuous Comprehensive Assessment (CCA) • Theory - 30 Marks Components of CCA Class Tests, Self and Peer Assessments, Open Book Tests, Assignments Seminar/Viva /Practicum/Quiz etc.
	B. End Semester Evaluation (ESE) • Theory - 70 Marks Assessment Methods - End Semester Examination Duration of Examination - 2.00 Hrs Pattern of examination for Theory - Non-MCQ Different parts of written examination - Part - A , B Answer Type: o PART - A o Short answer - (10 out of 15) - 10 × 2 = 20 o PART - B o Short Essays - (10 out of 15) - 10 × 5 = 50

References

- 1. An Introduction to Game Theory, Martin J. Osborne 2. Strategies and Games: Theory and Practice by Prajit K. Dutta

Suggested Readings

- 1. Theory of games and economic behaviour, Oskar Morgenstern

Affidavit

- We, UC College, Aluva and Liji Lawrence, retain the copyright of this syllabus and expressly prohibit its distribution in complete form to any institution outside our own.
- We, UC College, Aluva, agree to appoint a new course coordinator for the proposed A BEGINNERS JOURNEY TO UNDERSTAND GAME THEORY in the event of the unavailability of the currently nominated coordinator. This appointment

will ensure the continued coordination of course delivery, assessments, and all related academic responsibilities necessary for the successful implementation of the signature course, for as long as the college offers this programme.

- We, UC College, Aluva and Liji Lawrence, declare that no part of this signature course submitted here for approval has been taken from the course content developed by, or from any of the course titles prepared by, the BoS/expert committee in the same discipline under our University.

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