JINDAL GLOBAL BUSINESS SCHOOL
INDIA'S FIRST MULTI-DISCIPLINARY GLOBAL BUSINESS SCHOOL

O.P. Jindal Global University
A Private University Promoting Public Service
NAAC Accreditation - 'A' Grade

Jindal Global Business School
Course Outline

Course Title	Game theory
Core or Elective	Elective
Program and Batch	BBA-3, BBA BA-3, BBA FM -3 and BBA FB-3
Semester & Academic Year	Spring 2026
Credits	3
Discipline/Area	Social Science and Humanities
Name of the Faculty Member/Course Instructor	TBD
Contact Details of the Faculty Member	TBD
Contact Details of Support Staff	jgbs-eo@jgu.edu.in
Faculty Member's Open Office Day/s & Time	Based on time table will be announced in class.

Introduction to the Course

Game theory is a subject which has wide applications in different fields be it Economics, biology, computer science, political science, etc. In this course we will understand the strategic decision-making which game theory studies and look at the applications of game theory is different field like business, law, liberal arts, etc. We will understand the different situations where game theory can be used along with the conclusions which the subject derives in these different situations. Every person plays games in his or her life. The very fact that you are sitting in this course can be taken as a game you are playing with your classmates and with your own future. This course will help you identify game like situations in your respective fields and help analyse them as strategic interactions. We will have some maths in the course.

Course Learning Objectives

At the end of the course, students should be able to

1. CLO1- Identify strategic situations in different fields and understand the players
2. CLO2- Understand and analyse the game people are in
3. CLO3- Find the best possible solutions to games
4. CLO4- Construct games which enhance our understanding of the world.

Programme Competency Goals

BBA Programme Competency Goals (PCGs)		BBA Programme Learning Objectives (PLOs)
		Students will be able to
1	**Responsible Global Citizenship:** Ability to understand the interplay between local and global issues and to act with sensitivity towards ethical and social issues	1. Understand local business issues
		2. Understand global business issues
		3. Demonstrate sensitivity towards ethical issues
		4. Demonstrate sensitivity towards social issues
2	**Effective communication:** Ability to effectively exchange ideas and information	5. Present their ideas with clarity
		6. Write in a coherent manner
		7. Use technology for communication
3	**Critical Thinking:** Ability to identify, analyze business problems and propose effective solutions	8. Identify main issues of business problems
		9. Examine information from different sources
		10. Draw inferences from analysis
4	**Teamwork:** Ability to work and contribute effectively in group - settings	11. Understand the factors to work effectively in groups
		12. Contribute effectively in groups

PLO-PCG Assessments Mapping Matrix

Program Learning Objectives (PLOs)	**Program Competency Goals (PCGs)**	**Course Assessment Item**
This course helps you to develop the following Program Learning Outcomes:	This course helps you to develop the following Program Competency Goals:	This learning outcome will be assessed in the following items
PLO8 PLO9 PLO2	PCG3 PCG3, PCG1	A2, A3,A4,A5

PLO11 PLO8	PCG3 PCG4	A1,A2,A5
PLO10	PCG3	A2,A3,A5
PLO2 PLO10	PCG1 PCG3	A1,A2

Evaluation Schema

The course grade will be determined based on:

Assessment Task	**Weightage (Percentage)**	**Nature (Individual/Group)**	**Week of Assessment**	**PLOs to be Assessed**
A1:Class Participation	10%	Individual	1-14	PCG4-PLO1, PCG1-PLO2
A2 Presentation	20%	Group	3-14	PCG3-PLO1, PCG3-PLO3
A3 Midterm	20%	Individual	In the Midterm Week	PCG1-PLO2, PCG3-PLO3
A4 Project report	20%	Individual	10/11th week	PCG3-PLO1
A5 Endterm Examination	30%	Individual	In the JGU Examination period/week	PCG3-PLO3, PCG4-PLO1

Description of Assessments:

A1- Class Participation – Marks for class participation will be provided for participating in the class discussions. Each student is expected to give the answers to questions asked in class and also to pose questions and comments enhancing the class discussion. It is of 10 marks.

A2 – Presentation - You are expected to pick up a strategic situation and analyse the game. This means you have to identify the players, their strategies, and also their respective payoffs and equilibrium. You can form a group of 1-4 and do the presentation. Presentations will be held at the end of every class and you will need to select a date of presentation and present it. It is of 20 marks.

A3 Midterm- The midterm examination will be of 20 marks with a maximum duration of 90 minutes duration. This will be a pen and paper invigilated exam held on the JGU campus.

A4 – Project report: The groups will submit a report based on the topic chosen for presentation. The report should be 4-5 pages in length. It is of 20 marks.

A5 End term examination- The end term examination will be of **30 marks for 1.5 hours**. This will be an invigilated exam held on the JGU campus according to the mode decided by CoE.

Rubrics for Assessments

Below is the marking schema for presentation and project report

The presentation will be marked out of the following components:

Component	Marks
Idea	**3**
Players and Action	**3**
Preferences and Payoff Matrix	**3**
Nash equilibrium	**3**
Questions and Answers	**3**

The project report will be marked out of the following components:

Component	Marks
Players and Action	**5**
Preferences and Payoff Matrix	**5**
Nash equilibrium	**5**
Report writing	**5**

Teaching Method

The course will have a judicious mix of lectures, storytelling, experiential exercises, and cases. Here the onus of learning will be with the student, and the instructor will be a facilitator. Instead of learning 'what to do', the cases will also be used as examples of real-world phenomena where issues arise, and good and bad practices are seen. The key to learning this way is to see many examples and situations and learn inductive as well as deductive ways from students' and managers' different experiences.

Textbook / Other Readings

Textbook:

TB 1 – Introduction to game theory by Michael J Osborne
TB 2- Art of strategy by Avinash Dixit and Barry J Nalebuff
TB3: Game theory for managers, by Alka Chadda

Session Plan

Session Details	Topics	PLOs Covered
Session 1	Introduction	PLO 1,2
Objective of the session	To introduce students to game theory and strategic situations	
Subtopics to be covered	- Important topics - What is game theory - The theory of rational choice	

	- Interacting decision makers	
Readings	Chapter 1 of TB1	
Case Title & Number	NA	
Pedagogy	Lecture/Discussions	
Session 2	Strategic game	PLO 8,9,10
Objective of the session	To introduce students to strategic games	
Subtopics to be covered	- Strategic games - Prisoners dilemma - Duopoly - Arms race	
Readings	Chapter 2 of TB1	
Case Title & Number	NA	
Pedagogy	Lecture/Discussion	
Session 3	Nash equilibrium	PLO 8
Objective of the session	To define Nash equilibrium	
Subtopics to be covered	- Bach or Stravinsky - Matching pennies - Stag Hunt - Nash equilibrium: General definition - Nash equilibrium: Mathematical definition.	
Readings	Chapter 2 of TB1	
Case Title & Number	NA	
Pedagogy	Lecture/Discussion	
Session 4	Nash equilibrium: Continued	PLO 9
Objective of the session	To look at examples of Nash equilibrium	
Subtopics to be covered	- Nash equilibrium solutions of Prisoners dilemma, BoS, Matching pennies. - Hawk Dove - Focal points - Strict and non-strict equilibria	
Readings	Chapter 2 of TB1	
Case Title & Number	NA	
Pedagogy	Lecture/Discussion	
Session 5	Best response function	PLO 9
Objective of the session	To learn about best response functions	
Subtopics to be covered	- Definition of best response function - Use of best response function to define Nash equilibrium	

	- Best response functions of games discussed earlier - Dividing money: An example.	
Readings	Chapter 2 of TB1	
Case Title & Number	NA	
Pedagogy	Lecture/Discussion	
Session 6	Dominated actions	PLO 8
Objective of the session	To understand dominated actions	
Subtopics to be covered	- Strict domination - Weak domination - Illustration: Voting - Illustration: Collective action	
Readings	Chapter 2 of TB1	
Case Title & Number	NA	
Pedagogy	Lecture/Discussion	
Session 7	Cournot model of Oligopoly	PLO 9,10
Objective of the session	To understand Cournot model of Oligopoly	
Subtopics to be covered	- General Cournot model - Solving duopoly - Cournot oligopoly with different unit costs - Collusive outcomes	
Readings	Chapter 3 of TB1	
Case Title & Number	NA	
Pedagogy	Lecture/Discussion	
Session 8	Guest lecture 1	PLO 1,2
Objective of the session	To talk about Nash equilibrium	
Subtopics to be covered	To be announced by the guest	
Readings	NA	
Case Title & Number	NA	
Pedagogy	Lecture	
Session 9	Bertrands model of oligopoly	PLO 9,10
Objective of the session	To understand Bertrands model of oligopoly	
Subtopics to be covered	- Bertrands game - Duopoly with constant cost and linear demand function. - Nash equilibrium of the Bertrand's game - Cournot, Bertrand, and Nash	
Readings	Chapter 9 of TB1	
Case Title & Number	NA	

Pedagogy	Lecture/Discussions	
Session 10	Electoral competition	PLO 9,10
Objective of the session	To understand electoral competition	
Subtopics to be covered	- Electoral competition game - Nash equilibrium for two candidates - Electoral competition with three candidates - Condorcet winner - Voting for the best professor at JGU	
Readings	Chapter 3 of TB1	
Case Title & Number	NA	
Pedagogy	Lecture/Discussion	
Session 11	War of attrition and Auctions	PLO 2,9
Objective of the session	To understand War of attrition and auctions	
Subtopics to be covered	- War of attrition strategic game - Nash equilibrium of war of attrition. - Example: War for satellite rights - Auctions - Second price sealed bid auctions. -	
Readings	Chapter 3 of TB1	
Case Title & Number	NA	
Pedagogy	Lecture/Discussion	
Session 12	Auctions	PLO 1, 8
Objective of the session	To dive into auction theory	
Subtopics to be covered	- Second price sealed bid auction (contd…) - First price sealed bid auctions - Third price auctions. - Auction facts	
Readings	Chapter 3 of TB1	
Case Title & Number	NA	
Pedagogy	Lecture/Discussion	
Session 13	Interpreting and manipulating information	PLO 10
Objective of the session	To understand the role of information in game theory	
Subtopics to be covered	- King Solomon's dilemma - Manipulating information - Example: Car Warranty - Markets for lemons - Markets for insurance.	

Readings	Chapter 8 of TB2	
Case Title & Number	NA	
Pedagogy	Lecture/Discussions	
Session 14	Mixed Strategies	PLO 8,9
Objective of the session	To understand mixed strategies	
Subtopics to be covered	- Mixed strategy - Example: Matching pennies - Example: Soccer penalty - Expected payoffs	
Readings	Chapter 4 of TB1, Chapter 5 of TB2.	
Case Title & Number	NA	
Pedagogy	Lecture/Discussions	
Session 15	Mixed Strategies (Contid…)	PLO 8,9
Objective of the session	To understand mixed strategies	
Subtopics to be covered	- Rock, Paper, Scissors game - Mixed strategy equilibria of RPS - Jensen step game - Example: Eating food at JGU	
Readings	Chapter 4 of TB1, Chapter 5 of TB2.	
Case Title & Number	NA	
Pedagogy	Lecture/Discussion	
Session 16	Research paper discussion	PLO 5,6
Objective of the session	To discuss John Nash's paper on Nash equilibrium	
Subtopics to be covered	NA	
Readings	NA	
Case Title & Number	NA	
Pedagogy	Group discussion	
Session 17	Research paper discussion	PLO 5,6
Objective of the session	To discuss Thomas Schelling book 'Strategy of conflict'	
Subtopics to be covered	NA	
Readings	NA	
Case Title & Number	NA	
Pedagogy	Group discussion	
Session 18	Threats, promises, and brinkmanship	PLO 10
Objective of the session	To understand threats, promises, and brinkmanship	
Subtopics to be covered	- Threats and promises	

	- Example: JGU Classroom - Example: Parents and Children - Brinkmanship	
Readings	Chapter 6 of TB2	
Case Title & Number	NA	
Pedagogy	Lecture/Discussions	
Session 19	Making strategies credible	PLO 1,2
Objective of the session	To build credible moves	
Subtopics to be covered	- Ways to build credibility - Contracts, reputation - Cutting of communication, burning bridges - Moving in steps	
Readings	Chapter 7 TB2.	
Case Title & Number	NA	
Pedagogy	Lecture/Discussion	
Session 20	Guest lecture 2	PLO 1,2
Objective of the session	To talk about games in the real world.	
Subtopics to be covered	NA	
Readings		
Case Title & Number	NA	
Pedagogy	Lecture/Discussions	
Session 21	Sequential games	PLO 8,9
Objective of the session	To discuss sequential games	
Subtopics to be covered	- Sequential or extensive game - Game tree of a sequential game - Representing an extensive game in payoff matrix - Example: PC or Tablet market	
Readings	Chapter 5 of TB3	
Case Title & Number	NA	
Pedagogy	Lecture/Discussion	

Session 22	Sequential games (Contd..)	PLO 9,10
Objective of the session	To understand sequential games	
Subtopics to be covered	- Subgame perfect equilibrium - Backward induction - Examples of backward induction	
Readings	Chapter 4 of TB1, Chapter 5 of TB2.	

Case Title & Number	NA	
Pedagogy	Lecture/Discussions	
Session 23	Ultimatum game	PLO 9,10
Objective of the session	To understand Ultimatum game	
Subtopics to be covered	- Playing Ultimatum game - Game theory prediction of Ultimatum game - Ultimatum game in real life -	
Readings	Chapter 2 of TB2	
Case Title & Number	NA	
Pedagogy	Lecture/Discussion	
Session 24	Cooperation and Coordination	PLO 8,10
Objective of the session	To understand cooperation and coordination	
Subtopics to be covered	- Cooperation and coordination - Travelling in Delhi: Example - Faster than a speeding ticket: An example.	
Readings	Chapter 9 of TB2	
Case Title & Number	NA	
Pedagogy	Lecture/Discussions	
Session 25	Tipping point	PLO 8,9
Objective of the session	To understand tipping point	
Subtopics to be covered	- Tipping point - House segregation in India - It can be lonely at the top: An example	
Readings	Chapter 9 of TB2	
Case Title & Number	NA	
Pedagogy	Lecture/Discussion	
Session 26	Bargaining	PLO 1,2
Objective of the session	To understand bargaining	
Subtopics to be covered	- Bargaining: through example - Best alternative to negotiated agreement - Virtual strike	
Readings	Chapter 11 of TB2	
Case Title & Number	NA	
Pedagogy	Lecture/Discussions	

Session 27	To play the Ultimatum game	PLO 5,7
Objective of the session	To understand the Ultimatum game	
Subtopics to be covered	NA	
Readings	NA	
Case Title & Number	NA	
Pedagogy	Roleplay	
Session 28	To play the dictator game	PLO 5,10
Objective of the session	To understand the dictator game	
Subtopics to be covered	NA	
Readings	NA	
Case Title & Number	NA	
Pedagogy	Roleplay	
Session 29	Reading & Revision Week/ Examination Week*	
Objective of the session	NA	
Subtopics to be covered	NA	
Readings	NA	
Case Title & Number	NA	
Pedagogy	NA	
Session 29	Reading & Revision Week/ Examination Week*	
Objective of the session	NA	
Subtopics to be covered	NA	
Readings	NA	
Case Title & Number	NA	
Pedagogy	NA	

*Elective Endterm Examinations may take place in the last week of classes.

Disability Support

JGU endeavours to make all its courses accessible to students. The Disability Support Committee (DSC) has identified conditions that could hinder a student's overall wellbeing. These include physical and mobility-related difficulties, visual impairment, hearing impairment, mental health conditions, and intellectual/learning difficulties, e.g., dyslexia and dyscalculia. Students with any known disability needing academic and other support are required to register with the Disability Support Committee (DSC) by following the procedure specified at **https://jgu.edu.in/disability-support-committee/**

Students who need support may register any time during the semester up until a month before the end semester exam begins. Those students who wish to continue receiving support from the previous semester, must re-

register within the first month of a semester. Last-minute registrations and support might not be possible as sufficient time is required to make the arrangements for support.

The DSC maintains strict confidentiality about the identity of the student and the nature of their disability and the same is requested from faculty members and staff as well. The DSC takes a strong stance against in-class and out-of-class references made about a student's disability without their consent and disrespectful comments referring to a student's disability.

All general queries are to be addressed to **disabilitysupportcommittee@jgu.edu.in**
Disclaimer: This course outline including assessments, sessions and/or readings may be revised during the semester if such need arises.