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Game theory is the study of strategic interactions among rational decision-makers, where the outcome for each participant depends not only on their own actions but also on the actions of others. It provides a framework for analyzing situations in which individuals or groups must make decisions that affect one another.

 A complete information game is a type of game in which all players have full knowledge of the rules, strategies, and payoffs of other participants, allowing them to make fully informed decisions.

 This course will cover standard undergraduate-level material on complete information games, including the fundamental concepts, the formalization of game models, and key solution concepts such as Nash equilibrium. Through this course, students will gain a foundational understanding of strategic behavior in economic, political, and social contexts.

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   Develop an understanding of the models and solution concepts of complete information games.
   Practice and acquire essential skills to analyze and solve application problems in complete information games.

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The lectures will be organized as follows.

1. What is game theory.
2. Introduction to normal-form games.
3. Dominance and strictly dominant strategy equilibrium.
4. Common knowledge of rationality and iterated elimination of strictly dominated strategies.
5. Nash equilibrium: Theory.
6. Nash equilibrium: Applications.
7. Mixed strategy.
8. Introduction to extensive form games.
9. Backward induction.
10. Subgame perfect equilibrium: Theory.
11. Subgame perfect equilibrium: Applications.
12. Bargaining game.
13. Repeated game.
14. Review lecture.
(Final examination.)
15. Feedback.

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Certain topics will assume a foundational understanding of derivatives and integrals.

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Homework (25%)
Class participation (5%)
Final examination (70%)

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Students will be assigned three problem sets as the homework.

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Office hour by e-mail appointment.

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