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	Applied Game Theory-E2						
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Game theory is the study of strategic decision-making, where the outcome for each participant depends on their own actions as well as the actions of others. It provides a powerful framework for analyzing a wide range of competitive and cooperative scenarios.

In a complete information game, all players have full knowledge of the rules, strategies, and payoffs of others, allowing for fully informed decisions. In contrast, an incomplete information game involves uncertainty about some aspects of the game, such as the payoffs or strategies of other players, adding an additional layer of complexity to strategic reasoning.

This course will provide standard undergraduate-level knowledge of complete information games and an introduction to incomplete information games. We will cover the basic concepts, model formalization, and key solution concepts such as Nash equilibrium and Bayesian Nash equilibrium.

Throughout the course, we will explore various applications of these concepts in economics, politics, and other real-world scenarios.

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   Develop an understanding of the models and solution concepts for both complete and incomplete information games.
   Practice and acquire essential skills to analyze and solve application problems related to complete information games.
   Gain a foundational understanding of the applications of incomplete information games.

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The lectures will be organized as follows.

1. Static games of complete information: Normal-form games.
2. Dominance and iterated elimination of strictly dominated strategies.
3. Nash equilibrium: Theory.
4. Nash equilibrium: Applications.
5. Dynamic games of complete and perfect information.
6. Dynamic games of complete and perfect information: Applications.
7. Dynamic games of complete but imperfect information.
8. Dynamic games of complete but imperfect information: Applications.
9. Static games of incomplete information: Bayesian games.
10. Bayesian Nash equilibrium: Theory.
11. Bayesian Nash equilibrium: Applications.
12. Introduction to dynamic games of incomplete information.
13. Introduction to perfect Bayesian equilibrium.

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14. Perfect Bayesian equilibrium in signaling games.
(Final examination.)
15. Feedback.

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

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

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Gibbons, R.   Game Theory for Applied Economists.   Princeton University Press, 1992.   ISBN: 1400835887, 9781400835881

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Students will be assigned three problem sets as the homework.

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Office hour by e-mail appointment.