

课程大纲

COURSE SYLLABUS

1.	课程代码/名称 Course Code/Title	博弈与行为
2.	课程性质 Compulsory/Elective	专业选修课
3.	开课单位 Offering Dept.	商学院
4.	课程学分/学时 Course Credit/Hours	3 学分
5.	授课语言 Teaching Language	英文
6.	授课教师 Instructor(s)	董璐
7.	开课学期 Semester	秋学期
8.	是否面向本科生开放 Open to undergraduates or not	否
9.	先修要求 Pre-requisites	(如面向本科生开放, 请注明区分内容。 If the course is open to undergraduates, please indicate the difference.) No.

10. 教学目标 Course Objectives

(如面向本科生开放, 请注明区分内容。 If the course is open to undergraduates, please indicate the difference.)

1. 培养学生的行为洞察力和直觉, 使他们能够更好地理解、预测和解释现实世界中的战略互动。
2. 通过分析实验证据及其与博弈之间的关系, 帮助学生了解人类行为如何受到潜在的商业和社会利益驱动, 并将这些洞察应用于现实生活案例分析。
3. 结合课堂游戏和体验式学习, 让学生亲身体验战略互动, 并运用所学的直觉和商业分析能力更好地处理现实生活中出现的问题。
4. 通过讨论经济、商业和政治背景下的实际案例, 使学生能够应用行为洞察和直觉来深入理解各种现实世界的战略问题。
5. 鼓励学生之间以及与教师之间的讨论和合作, 共同学习和理解游戏理论, 以提高解决现实生活中战略问题所需的行为洞察和直观知识。

1. Cultivate students' behavioral insight and intuition, enabling them to better understand, predict, and interpret strategic interactions in the real world.
2. Help students understand how human behavior is driven by potential business and social interests by analyzing empirical evidence and its relationship with games, and apply these insights to real-life case analysis.
3. Combine classroom games and experiential learning to allow students to experience strategic interaction firsthand and use their learned intuition and business analysis skills to better handle problems encountered in real life.
4. Enable students to apply behavioral insights and intuition to in-depth understanding of various real-world strategic issues through discussion of actual cases in economic, business, and political contexts.
5. Encourage discussions and collaborations between students and teachers to learn and understand game theory together, improving behavioral insights and intuitive knowledge needed to solve strategic problems in real life.

11. 教学方法

Teaching Methods

(如面向本科生开放, 请注明区分内容。 If the course is open to undergraduates, please indicate the difference.)

1. 课堂游戏和实验: 通过组织课堂博弈和实验, 让学生亲身参与战略互动, 从而提高直观理解和行为洞察力。
2. 传统的游戏理论分析: 在介绍各种游戏类型的同时, 运用传统的博弈论分析方法, 教授学生如何寻找和分析纳什均衡、混合策略均衡等关键概念。
3. 实验数据及案例分析: 结合实验室实验数据和现实生活案例, 分析阐述行为与理论预测之间的差异, 以及应用行为洞察和改进的理论模型来更准确地预测人类行为。
4. 勾画行为模型: 介绍行为经济学的核心概念和模型, 如社会偏好模型、量化响应均衡 (QRE)、不完全觉悟均衡等, 并教授如何在实际博弈环境中应用这些行为模型。

1. Classroom games and experiments: By organizing classroom games and experiments, students can participate in strategic interactions to improve their intuitive understanding and behavioural insights.
2. Traditional game theory analysis: Introduce various game types and use traditional game theory analysis methods to teach students how to find and analyse key concepts such as Nash equilibrium and mixed strategy equilibrium.
3. Experimental data and case analysis: Combine laboratory experimental data and real-life cases to analyse and explain the differences between behaviour and theoretical predictions, and apply behavioural insights and improved theoretical models to more accurately predict human behaviour.
4. Sketching behavioural models: Introduce the core concepts and models of behavioural economics, such as social preference models, quantal response equilibrium (QRE), and imperfect awareness equilibrium, and teach how to apply these behavioural models in actual game environments.

12. 教学内容

Course Contents

(如面向本科生开放, 请注明区分内容。 If the course is open to undergraduates, please indicate the difference.)

Section 1 博弈理论基础 Game Theory Fundamentals	<p>本部分探讨博弈的基本概念, 包括策略游戏、博弈表示及均衡。课程涵盖主导策略、混合策略、非矩阵游戏均衡, 关注均衡选择与深入理解游戏理论。</p> <p>This section explores the basic concepts of games, including strategic games, game representations, and equilibria. The course covers dominant strategies, mixed strategies, non-matrix game equilibria, focusing on equilibrium selection and deepening understanding of game theory.</p>
Section 2 市场设计 Market Design	<p>此部分关注不完全信息下的市场机制, 先介绍信号理论、随后探讨拍卖和议价理论。诸如容忍重叠与竞拍明示规则等核心概念都将在本部分展开讨论。此外, 我们还将研究配对市场设计及其在实践中的应用。</p> <p>This section focuses on market mechanisms under incomplete information, introducing signalling theory and then exploring auction and bargaining theory. Core concepts such as tolerance overlap and auction explicit rules will be discussed in this section. In addition, we will study the design of matching markets and their applications in practice.</p>
Section 3 社会困境 Social Dilemmas	<p>本部分着眼于各种社会困境, 如公共品与共有资源的悖论。通过对社会选择理论的学习, 我们将探索个体决策如何汇聚成群体决策。此外, 讨论投票规则和私人信息投票对选举结果产生的影响。</p> <p>This section focuses on various social dilemmas, such as the paradox of public goods and common resources. Through the study of social choice theory, we will explore how individual decisions converge into collective decisions. In</p>

	addition, we will discuss the impact of voting rules and private information voting on election outcomes.
Section 4 其他模型：学习、QRE、心理游戏理论 Other Models: Learning, QRE, Psychological Game Theory	这一部分将介绍基于信念的学习、进化博弈理论，解释人们在面对不确定性时的决策过程。我们将探讨定量响应均衡（QRE）及 Level-k 模型的理论与应用，最后，进入心理游戏理论，促使学生了解心理过程对博弈结局的影响。 This section introduces belief-based learning, evolutionary game theory, explaining people's decision-making process in the face of uncertainty. We will explore the theory and application of Quantal Response Equilibrium (QRE) and Level-k models, and finally, delve into psychological game theory, prompting students to understand the impact of psychological processes on game outcomes.
Section 5 实践与讨论环节 Practice and Discussion Sessions	每隔两周会设置一次讨论环节。本部分将提供实际案例和讨论环节，以便学生运用所学知识。课程将重点讨论如何分析现实世界中的策略互动，学生将通过小组讨论和实际操作加深对理论及应用的理 A discussion session will be held every two weeks. This section will provide real-world case studies and discussion sessions for students to apply what they have learned. The course will focus on analyzing strategic interactions in the real world, and students will deepen their understanding of theory and application through group discussions and practical exercises.
Section 6 复习与考试准备	最后几节课将用于总结和复习前面所涉及的理论与概念。本部分旨在帮助学生查漏补缺，加固对各个部分的掌握程度，为期末考试做好准备。 The last few lessons will be used to summarize and review the theories and concepts covered earlier. This section aims to help students identify gaps, consolidate their mastery of each section, and prepare for the final exam.

13. 课程考核 Course Assessment

（考核形式 Form of examination; . 分数构成 grading policy; 如面向本科生开放，请注明区分内容。 If the course is open to undergraduates, please indicate the difference.）

1. 期中考试（50%）：课堂闭卷考试，主要包括简答题，计算题和小论文，旨在用于考察学生在博弈论和行为经济学方面的基础知识，以及对于相关文献和研究方法的熟悉程度。
2. 期末考试（50%）：闭卷考试，主要包括简答题，计算题，和针对某些概念的小论文。简答题旨在测试学生对课程知识的理解，小论文则要求学生就相关概念进行深入探讨和分析，展现个人的思考和见解。

1. Midterm Exam (50%): Closed-book class-room exam, mainly including short-answer questions, calculation problems, and mini-essays. The exam aims to assess students' foundational knowledge in game theory and behavioral economics, as well as their familiarity with relevant literature and research methods.
2. Final exam (50%): Closed-book exam, mainly including short-answer questions, calculation and mini-essays on specific concepts. Short-answer questions aim to test students' understanding of the course content, while mini-essays require students to conduct in-depth exploration and analysis of relevant concepts, demonstrating their personal thoughts and insights.

14. 教材及其它参考资料

Textbook and Supplementary Readings

主要教材: Carpenter, J., & Robbett, A. (2022). Game Theory and Behavior. The MIT Press

参考书目:

1. Pinker, S. (2021). Rationality: What It Is, Why It Seems Scarce, Why It Matters. Penguin Press.
2. Jackson, M. O. (2018). The Human Network. Pantheon Books.
3. 卡尼曼, D. (2012). 思考, 快与慢. 机械工程出版社.
4. 阿克洛夫, G., & 席勒, R. J. (2009). 动物精神: 如何运用人性理解经济. 中信出版社.
5. 泰勒, R., 桑斯坦, C., (2018)助推: 关于健康、财富与幸福的决策. 复旦大学出版社.
6. 其他国内外关于行为经济学的经典论文和著作, 以及实证研究与案例分析。

Main Textbook: Carpenter, J., & Robbett, A. (2022). Game Theory and Behavior. The MIT Press

Reference Books:

- Pinker, S. (2021). Rationality: What It Is, Why It Seems Scarce, Why It Matters. Penguin Press.
- Jackson, M. O. (2018). The Human Network. Pantheon Books.
- Kahneman, D. (2012). Thinking, Fast and Slow. China Machine Press.
- Akerlof, G., & Shiller, R. J. (2009). Animal Spirits: How Human Psychology Drives the Economy, and Why It Matters for Global Capitalism. CITIC Press.
- Thaler, R., Sunstein, C. (2018) Nudge: Improving Decisions About Health, Wealth, and Happiness. Fudan University Press.
- Other classic papers and works on behavioral economics from both domestic and international sources, as well as empirical research and case analysis.