Subject	Microeconomics I
Instructor	DAI ZUSAI
Day/Period	Fall Semester Thu 1 経済学部第1演習室
Eligible Participants	全／All
Course Numbering	EEM-ECO560E
Credit(s)	2

Object and summary of class	!!!<< This course will be wholly online at an external website. Follow the instruction in the URL section of this syllabus. >>!!! ----------- Modern economics stands on formal mathematical models that formulate rational decision making of individual actors and their interdependence in the economy. In this course, we start the study of such formal economic models by focusing on general, abstract theory on interdependent relationships between rational decision makers, i.e., game theory. Game theory is a necessary component of the study of modern economics. So, anyone who plans to study modern economics should take both this course and Micro II, as well as other core courses in macroeconomics and econometrics. Particularly, Micro II and any of my other graduate courses will assume mastery of the contents to be taught in Micro I.
Goal of study	In Micro I, emphasis is on logical rigor, formalism, and abstraction behind economic models. This course shall teach essential skills for formulation and analysis of economic modeling and basic knowledge of various economic models for your future academic research. Therefore, the ultimate goal of this course is not only to provide knowledge and techniques in game theory, but also to get you familiar with economic modeling in various aspects, such as formal representation of a mathematical model, assessment of the most suitable solution concept for each model, mathematical analysis of the model with rigorous logic, and evaluation of scopes and limitations of the modeling and analytical methodology. Throughout this course, it is emphasized to understand the underlying economic incentives through analysis of costs and benefits, combined with deciphering cognitive constraints for economic agents in information acquisition, forecasting of other economic agents' decisions and statistical inference under limited information. Basic calculation skills in calculus and serious attitude toward accurate formalism and logical rigor are necessary, while advanced knowledge in mathematics or mechanical horsepower for complicated calculation are not much. It is desirable that you have been exposed to elementary basics of game theory at least at the extent that is covered in a typical undergraduate "microeconomic principle/introductory microeconomics" textbook (e.g. Hubbard & O'Brien, Krugman & Wells), since this graduate course will pay more attention to giving fluency with mathematical formulation and analysis of economic models than just simply giving knowledge of economic theory.
Contents and progress schedule of the class	Part 1: Game theory as multi-agent optimization theory (Games under complete information) 1. Introduction: Quick overview of game theory, and individual decision problems as a basis. 2. Strategic form: Basic modeling of strategic situations. 3. Nash equilibrium: Basic solution concept. 4. Mixed strategy: Modeling strategic randomization. 5. Extensive form and backward induction: Modeling sequential strategic interactions. 6-7. Applications and extensions I. Part 2: Game theory on limited information and statistical inference (Games under incomplete information) 8. Information set and subgame perfection: Analyzing imperfect information in an extensive form. 9. Repeated games: Analyzing repeated interactions. 10. Bayesian games: Analyzing incomplete information in a strategic form. 11-12. Signaling games and sequential equilibrium: Analyzing information transmission in an extensive form. 13-14. Applications and extensions II. 15. Final examination (理解度確認セッション) Topics to be covered in A&E (but not limited to): Evolutionary dynamics in games; Bargaining theory; Global games; Pricing strategy; Contract theory/mechanism design/social choice.
Practical business	
Language Used in Course	English. In office hours (possibly online), Japanese may be used even though it is still encouraged to use English (and required when other participants are not familiar with Japanese language). For students with strong math but weak English, this course would be a good introduction to academic communication in English.
Evaluation method	The scores will be aggregated as follows: OVERALL= 0.30 × QUIZ +0.30 × HW +0.40 × EXAM, where QUIZ = the average score of review quizzes, HW = the average score of HW assignments, and EXAM = the final exam score. The "average" score is calculated by dividing your total earned score (including bonus points) by the total possible full score (excluding bonus points). There will be one final exam during the examination period (理解度確認セッション). In addition, there will be HW assignments for each of Parts 1 and 2. The instructor may give extra HW assignments (possibly by a group or an individual). The homework will be normally given, collected (or conducted as an online quiz) and returned through the course's LMS. You must carefully read the instructions for submission. Any violation of the instructions will be severely penalized or even not accepted without chance of resubmission. Every homework/quiz must be submitted by the deadline. No late submission will be accepted. There will be no make-up homework for any reasons. Any plagiarism will be reported to the school's disciplinary committee for further investigation and possible disciplinary actions. If you use any outside materials other than those provided or suggested in this course, you must cite the sources. If you work with other students to solve a graded HW problem, it must be explicitly noted at the time of submission of the HW; any help from people who are not noted will be considered as plagiarism.

Textbook and references	No	Title	Author	Publisher	Year	ISBN/ISSN	Classification
	1.	『To be posted on the course's LMS page.』					

URL	<<MUST READ>> We may use an external LMS (Canvas), which is not synced with Tohoku's course enrollment system. So, it needs invitation from the instructor and students' own registration. To get an invitation, you must fill the invitation request form at https://sites.google.com/view/zusaiTohoku/micro1 by three days before the day of the first lecture. (Anyone who is wondering whether to take this course can also send an inquiry from this form.) This Google site will not be used during the semester. Apart from this, to get a credit of this course, you must also complete the regular course enrollment process, following the administrator's instruction. So, BOTH THE TWO STEPS (the request form to the instructor and the course enrollment to the university/school) are needed and must be completed at your own responsibility.
Preparation and Review	Of course, students are supposed to carefully review the lecture notes. However, to learn economic theory, careful reading is only just the very starting point and far from getting full mastery. For this, you must practice the theory by solving exercise problems. Homework will be kept at the minimum in order to efficiently evaluate your understanding and steady learning while giving you flexibility on your workload and schedule; yet, you are expected to try more exercises spontaneously than assigned as HW in order to master the contents of the course. I will make a suggestion of non-graded exercise problems; you are supposed to try those suggested exercises after each lecture. You should keep all your works for this course until receiving the final overall grade of this course , in case that I ask you to show how you study for this course (possibly to give an individual advice or to solve some issue on grading). The lecture note is the primary source of definitions, theorems, etc. As the secondary references and the problem sets, you must obtain one or two textbooks on game theory at graduate level; the candidate book list will be posted online. On some topics, chapters from other books may be referred. Otherwise noted, you are supposed to read all the additional readings, the suggested parts of the textbook, the lecture notes and the supplementary notes. These textbooks and readings should be used as secondary references for further explanation and problem sets after reviewing the lecture note as the primary reference. When there is any discrepancy between the lecture notes and other reading materials including the textbook, we follow the lecture notes. If not sure, always ask the instructor.
Attached File	
In addition	
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