# Information Aggregation and Communication in Game Theory

(2017-2018)

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## Course Description:
This course will focus on game theory and its applications. It will consist of two parts. The first part will cover the basic concepts in game theory as well as well-known games. The second part will cover topics related to information aggregation and communications. We will also read relevant academic papers. By the end of this course students are expected to understand the basic game theory and acquire analytical tools in the field. They are also expected to read and comprehend research papers on applied game theory and critically argue them.

## Grading Policy:

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<tr>
<th>Grading Policy</th>
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<tr>
<td>Participation</td>
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<td>Presentation</td>
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<tr>
<td>Report</td>
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<tr>
<td>Take Home Exam</td>
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- **Participation**: You are expected to actively participate in class discussion.
- **Presentation & Report**: (1) First, you will discuss with the instructor and select one paper related to the course in early November. (2) Second, you will present the summary and your comments on the selected paper in class in December or January. (3) Last, you will submit a short referee report on the selected paper (approximately 2-5 pages). The deadline will be announced later.
- **Take Home Exam**: You will be given a take-home final exam. Further details including the schedule will be announced later.

## Texts:

## Other References:

## Office Hours:
Monday 10:30-12:00 & Wednesday 10:30-12:00 or by appointment. Office hours are subject to change based on announcement.

Email: chiba@econ.kyoto-u.ac.jp
My office: #705 in Faculty of Law & Faculty of Economics East Building (Building #5 on the campus map).
I. SCHEDULE (Plan)

Weeks 1-14: Lectures and Presentations (No class on 12/28) (*)
Week 15: Take-home Exam and Report
(*) We will invite one or two guest speakers in class.

II. COURSE TOPICS (Plan)

1. **Introduction to Game Theory** (Weeks 1-7)

   (1) Static Games of Complete Information.
   - Normal-form games & Nash equilibrium
   - Prisoner’s dilemma games
   - Oligopoly models (Cournot, Bertrand)
   - Hotelling-Downs models

   (2) Dynamic Games of Complete Information.
   - Extensive-form games & Subgame-perfect Nash equilibrium
   - Stackelberg models of duopoly
   - Sequential bargaining models
   - Repeated games

   (3) Static Games of Incomplete Information.
   - Bayesian Nash equilibrium
   - Oligopoly models under asymmetric information
   - Auction models
   - Introduction to Mechanism design (Revelation Principle, VCG mechanism)

   (4) Dynamic Games of Incomplete Information.
   - Perfect Bayesian equilibrium
   - Signaling games
   - Cheap talk models

2. **Information Aggregation and Communications** (Weeks 8-14)

   (1) Bayesian Persuasion and Information Design

(2) Information and Strategic Communication

(3) Information and Authority in Organizations

(4) Information and Networks
• TBA

(5) Information and Social Learnings
(6) Information in Auctions


(7) Information in Committees and Elections