

**THE UNIVERSITY OF HONG KONG
FACULTY OF BUSINESS AND ECONOMICS**

PhD Course Syllabus

Course Code/Title: MKTG6007 Structural Models and Empirical Methods

Course Description: This course focuses on empirical structural models and their applications in Marketing, Economics, and Information Systems. The course covers theories, numerical methods, and applications of empirical structural models. The topics include static discrete choice models, demand estimation using aggregate data (BLP), single-agent dynamic discrete choice models, static and dynamic discrete games, and their applications (e.g., storable and durable good demand, price discrimination, product innovation, two-sided platforms, and sharing economy). The course also covers research methodology related to computational methods (e.g., function approximation, numerical integration) and econometric analysis.

Course Objectives:

- 1) To build up necessary toolkits for applying structural models and empirical methods to research;
- 2) To get familiar with classic models and literature in the selected research areas;
- 3) To form a foundation for developing original research ideas and applying appropriate methodology to address research questions;
- 4) To develop paper writing and presentation skills.

Pre-requisite: Econometrics (e.g., GMM, MLE)

Assessment: 60% coursework; 40% research proposal

Remarks: All PhD courses are non-credit-bearing and will be assessed on a letter grade basis.

Course Learning Outcomes (CLOs) On completion of this course, students should be able to:	Aligned PLOs*				
	1	2	3	4	5
1. Acquire and internalize classic structural models and empirical methods in selected research areas	v				
2. Get familiar with classic and cutting-edge literature in selected research areas	v				
3. Develop original research ideas and apply appropriate methodology to address research questions		v	v		v
4. Improve research paper writing and presentation skills				v	

***Programme Learning Outcomes (PLOs) for Research Postgraduate Programme:**

1. Demonstrate critical understanding, at an advanced level, of up-to-date knowledge and research methodology of a particular field
2. Implement effective academic and personal strategies for carrying out research projects independently and ethically
3. Contribute original knowledge in response to issues in their specialist area
4. Communicate research findings at a diverse range of levels and through a variety of media
5. Evaluate one's own research in relation to important and latest issues in the field

COURSE DETAILS *(subject to change at instructor's discretion)*

Year/Semester: 2026-27, First Semester

Time/Venue: Monday, 09:00 – 11:50, Venue: TBA

Instructor: **Li, Hui**
Email: hui1@hku.hk
Office: KKL-721 (by appointment)

I. Teaching and Learning Activities

In-class and Out-of-class Activities (e.g., lectures, class discussion, papers reading, proposal writing)	Expected hour	% of student study effort
1. Lectures (including in-class paper presentation and discussion) The course comprises two types of lectures: 1) instructor-led lectures, in which the instructor teaches classic structural models and empirical methods; and 2) paper presentation lectures, in which students present classic and cutting-edge research papers that implement the methodology. The instructor will guide the discussion and all students will participate in the discussion. The list of research papers to be discussed and the assignment of students to papers will be announced at the beginning of the semester.	35 hours	25%
2. Paper reading and self-study - Before each paper presentation lecture, all students are expected to read and critically evaluate all the assigned papers before class. Students who are assigned to a particular paper need to prepare paper presentation slides before class. - For all lectures, students are required to self-study and internalize the methodology and the literature covered in class.	70 hours	50%
3. Research proposal: idea generation - Students are required to generate a research idea on a topic that they are interested in and develop a proposal to implement the idea using empirical structural models. Ideally, the research idea should have the potential to be developed into a research paper that is publishable in well-respected peer-review journals. - When developing the proposal for the idea, students should consider how to obtain data sets, what modelling methods to use, how to implement the methods, what analyses to conduct, and what results to expect.	30 hours	21.4%
4. Research proposal: presentation Students will present their initial ideas and draft proposals in class in the middle of the semester. The instructor will comment and provide feedback.	5 hours	3.6%

- Students will present their final proposals in class at the end of the semester. The proposal should contain the following items: 1) <i>motivate and formulate a research question</i>; 2) <i>explain why structural models are needed to answer the question</i>; 3) <i>discuss the data sets to be used and the data analyses to be conducted</i>; 4) <i>present a model</i>; 5) <i>discuss the method for solving the model</i>; 6) <i>discuss result analyses and present (expected) results</i>. - All students should comment on their classmates' proposals. - The instructor will comment and provide feedback to the students to help them further develop the research proposal and improve their presentation skills.		
Total	140	100%

II. Assessment

Assessment Components (e.g. assignments, proposal, presentation, examination)	Weight	CLOs to be assessed				
		1	2	3	4	5
1. Assigned paper presentation	40%	v	v		v	
2. Class participation	20%	v	v			
3. Research proposal	40%	v		v	v	
Total	100%					

Students will be assessed based on the following performance standards:

Course Grade	Performance Standard
A+, A, A-	Outstanding performance; demonstrates comprehensive understanding, critical thinking, and originality.
B+, B, B-	Good performance; shows solid understanding and application of key concepts, with some minor errors or omissions.
C+, C, C-	Satisfactory performance; basic understanding is evident, but with notable gaps or inconsistencies.
D+, D	Marginal performance; minimal understanding, with significant errors or misunderstandings.
F	Failing performance; little or no understanding of key concepts.

III. Course Content and Tentative Schedule

- Class 01: Aggregate Demand Models / BLP
- Class 02: Paper presentation and discussion (1)
- Class 03: Single-Agent Dynamics (I)
- Class 04: Single-Agent Dynamics (II); Proposal Idea Presentation and Feedback

- Class 05: Paper presentation and discussion (2)
- Class 06: Discrete Games
- Class 07: Paper presentation and discussion (3)
- Class 08: Price Discrimination, Two-Sided Platforms, and Sharing Economy
- Class 09: Paper presentation and discussion (4)
- Class 10: Proposal Presentation and Feedback
- Class 11: Proposal Presentation and Feedback

Notes: The information in this syllabus is subject to changes and any changes made to this syllabus will be announced in due time.

IV. Required/Recommended Readings

The list of journal articles required for reading will be provided at the beginning of the semester.

V. Course Policy

The University Regulations on academic dishonesty will be strictly enforced! Academic dishonesty is behaviour in which a deliberately fraudulent misrepresentation is employed in an attempt to gain undeserved intellectual credit, either for oneself or for another. It includes, but is not necessarily limited to, the following types of cases:

- Plagiarism - The representation of someone else's ideas as if they are their own. Where the arguments, data, designs, etc., of someone else are being used in a paper, report, oral presentation, or similar academic project, this fact must be made explicitly clear by citing the appropriate references. The references must fully indicate the extent to which any parts of the project are not one's own work. Paraphrasing of someone else's ideas is still using someone else's ideas, and must be acknowledged. Please check the University Statement on plagiarism on the web: <http://www.hku.hk/plagiarism/>
- Unauthorized Collaboration on Out-of-Class Projects - The representation of work as solely one's own when in fact it is the result of a joint effort.
- Cheating on In-Class Exams - The covert gathering of information from other students, the use of unauthorized notes, unauthorized aids, etc.
- Unauthorized Advance Access to an Exam - The representation of materials prepared at leisure, as a result of unauthorized advance access (however obtained), as if it were prepared under the rigors of the exam setting. This misrepresentation is dishonest in itself even if there are not compounding factors, such as unauthorized uses of books or notes.

You are expected to do your own work whenever you are supposed to. Incident(s) of academic dishonesty will NOT be tolerated. Cheating or plagiarism of any kind would result in an automatic FAIL grade for the course plus strict enforcement of all Faculty and/or University regulations regarding such behaviour.