



教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	賽局理論與經濟應用 (一)		學年/學期 Academic Year/Semester		114/1		
課程名稱(英文) Course Name in English	Game Theory with Economic Applications (I)						
科目代碼 Course Code	EC_D0300	系級 Department & Year	博士	開課單位 Course-Offering Department	經濟學系		
修別 Type	選修 Elective	學分數/時間 Credit(s)/Hour(s)	3.0/3.0				
授課教師 Instructor	/林慧菁						
先修課程 Prerequisite							
課程描述 Course Description							

賽局理論與經濟應用（一）

教學目標：賽局在社會科學中之應用相當廣泛，舉凡政治、經濟、產業、管理等各學界皆有運用賽局之範例，本課程將理論與應用並重，強調賽局理論之邏輯性思維而非艱澀的數學驗證，以培養學生應用賽局理論來設計經濟模型及解釋經濟問題之能力。

評分標準：期末考(take-home)(30%)、期末報告(60%)、以及上課表現(10%)。

教科書：

[R]. Rasmusen, E (2007), Games and Information, 4th ed. Blackwell.

可供碩、博士班參考之書籍：

[Fr]. Friedman, J. W. (1991), Game Theory with Applications to Economics, 2nd ed., Oxford U. Press.

[G]. Gibbons, R. (1992), Game Theory for Applied Economists, Princeton U. Press.

[Fu]. Fudenberg, D. and J. Tirole (1991), Game Theory, MIT Press.

[M]. Myerson, R. B. (1991), Game Theory: analysis of Conflict, Harvard U. Press.

[O]. Osborne, M. J. and A. Rubinstein (1994), A Course in Game Theory, MIT Press.

以及其他補充教材與論文等。

課程大綱：

Introduction ([Fr] Ch. 1, [R] Ch. 1-2, [G] 1.1, 2. 4A)

Game form, definition and solution concepts

Complete Information:

Strategic form games ([Fr] Ch. 3, [R] Ch. 3, [G] pp 1-48)

 Dominant Strategies and Dominated Strategies

 Nash equilibrium

 App. Cournot game

 Bertrand game

 Etc.

Extensive form games ([Fr] Ch. 2, [R] Ch. 4, [G] pp 55-137)

 Dynamic games, backward induction and Nash equilibrium

 Subgame perfection

 Sequential equilibria

Bargaining games (Nash, Ariel Rubinstein)

App. Stackelberg game

 Centipede game

 Entry deterrence game

 Etc.

*Repeated games ([Fr] Ch. 4-5, [R] Ch. 5, [G] 2.3)

 Finitely repeated prisoners' dilemma

 Folk theorem

 Reputation

 Signaling

App.

Incomplete information: ([Fr] Ch., [R] Ch. 6-, [G] pp 143-252)

 Bayesian Nash equilibrium

 Perfect Bayesian equilibrium

 Bargaining with private information

Sequential equilibrium

 Revelation Principle

App.

Implementation Theory ([R] Ch. 10, [O] Ch. 10)

 Nash implementation

 Subgame perfect implementation

 Mechanism design

App.

Cooperative Games ([Fr] Ch. 6-8)

課程目標 Course Objectives

This course emphasizes the application of game theoretical tools to understand important economic phenomena. Covers applications to many and varied fields, in particular to microeconomics, bargaining, signalling, and public policy.

系專業能力 Basic Learning Outcomes		課程目標與系專業能力相關性 Correlation between Course Objectives and Dept.'s Education Objectives
A	數理分析能力：通曉經濟學的高階理論技巧，應用數學與賽局解決經濟議題的能力 Mathematical analysis skills: Mastering in advanced application of mathematical theories and game theory in analyzing economic issues	●
B	實證經濟分析能力：通曉經濟學的高階實證技巧，善用資訊科技進行資訊蒐集、資料統計與計量分析。 Empirical analysis skills: Mastering in advanced application of statistics and econometrics in data collection and examination	○
C	微觀經濟之闡釋能力：通曉高階個體經濟學相關的理論與應用 Microeconomic perspective: Thorough understanding of advanced microeconomic theories and relevant application	●
D	宏觀經濟之闡釋能力：通曉高階總體經濟學相關的理論與應用 Macroeconomic perspective: Thorough understanding of advanced macroeconomic theories and relevant application	○
E	自我調整適應社會之能力：具備適應現代社會的學養以及就業能力。 Employment opportunities: capabilities of working on important policy and decision challenges in business and government	○
F	溝通表達能力：思路清晰，有能力與人溝通並撰寫高階專業研究報告 Communication skills: Having a clear mind and profound ability in presenting advanced professional academic research	○

圖示說明 Illustration : ● 高度相關 Highly correlated ○ 中度相關 Moderately correlated

授課進度表 Teaching Schedule & Content

週次 Week	內容 Subject/Topics	備註 Remarks
1	Introduction ([Fr] Ch. 1, [R] Ch. 1-2, [G] 1.1, 2.4A);	
2	Game form, definition and solution concepts	
3	Strategic form games; Dominant Strategies and Dominated Strategies	
4	Strategic form games; Nash equilibrium; App. Cournot game; Bertrand game	
5	Information structure	
6	Information structure	
7	Information structure	
8	Extensive form games	
9	期中考試週 Midterm Exam	
10	Extensive form games	
11	Extensive form games	
12	Extensive form games	
13	Repeated games	
14	Repeated games	
15	Repeated games	
16	Repeated games	
17	Repeated games	
18	期末考試週 Final Exam	

教 學 策 略 Teaching Strategies

課堂講授 Lecture

分組討論 Group Discussion

參觀實習 Field Trip

其他Miscellaneous:

教 學 創 新 自 評 Teaching Self-Evaluation

創新教學 (Innovative Teaching)

問題導向學習 (PBL)

團體合作學習 (TBL)

解決導向學習 (SBL)

翻轉教室 Flipped Classroom

磨課師 Moocs

社會責任 (Social Responsibility)

在地實踐 Community Practice

產學合作 Industry-Academia Cooperation

跨域合作 (Transdisciplinary Projects)

跨界教學 Transdisciplinary Teaching

跨院系教學 Inter-collegiate Teaching

業師合授 Courses Co-taught with Industry Practitioners

其它 other:

學期成績計算及多元評量方式 Grading & Assessments

配分項目 Items	配分比例 Percentage	多元評量方式 Assessments						
		測驗 會考	實作 觀察	口頭 發表	專題 研究	創作 展演	卷宗 評量	證照 檢定
平時成績(含出缺席) General Performance (Attendance Record)	10%		✓	✓				
期中考成績 Midterm Exam	30%	✓						
期末考成績 Final Exam	60%			✓	✓			
作業成績 Homework and/or Assignments	0%							
其他 Miscellaneous (_____)								

評量方式補充說明
Grading & Assessments Supplemental instructions

教科書與參考書目 (書名、作者、書局、代理商、說明)

Textbook & Other References (Title, Author, Publisher, Agents, Remarks, etc.)

教科書：

[R]. Rasmusen, E (2007), Games and Information, 4th ed. Blackwell.

可供碩、博士班參考之書籍：

[Fr]. Friedman, J. W. (1991), Game Theory with Applications to Economics, 2nd ed., Oxford U. Press.

[G]. Gibbons, R. (1992), Game Theory for Applied Economists, Princeton U. Press.

[Fu]. Fudenberg, D. and J. Tirole (1991), Game Theory, MIT Press.

[M]. Myerson, R. B. (1991), Game Theory: analysis of Conflict, Harvard U. Press.

[O]. Osborne, M. J. and A. Rubinstein (1994), A Course in Game Theory, MIT Press.

課程教材網址(含線上教學資訊, 教師個人網址請列位於本校內之網址)

Teaching Aids & Teacher's Website (Including online teaching information.

Personal website can be listed here.)

<http://faculty.ndhu.edu.tw/~hclin/>

其他補充說明 (Supplemental instructions)