

## **賽局理論 (Games Theory)**

**by Dr. J. Teng**

課本:

Dixit, A and Skeath, S. (1999). Games of Strategy, W. W. Norton & Company.

中譯本—譯者：藍兆杰，徐偉傑，陳怡君. (2002). 弘智文化事業有限公司.

Morrow, J. D. (1994). Game theory for political scientists, Princeton University Press.

課程目的:

賽局理論在現今社會科學中有着非常廣泛的應用，是不可或缺的主要理論工具。本課程給與學生基本的賽局理論訓練，以便從事政治與其他領域的策略分析和進行政治學型式理論研究。

作業與考試:

每週作業

期中考試

期末考試.

課程大綱:

Introduction.

Definition and components of a game:

Player, type (payoff), action/strategy, structure (game tree).

Nature of strategic interactions

Pre-Nash Games Theory.

Iterative dominate strategy (don't play dumb)

Rationalisable strategy

MasCollé & Green

Normative forms games

Examples

Solving for Nash equilibrium by elimination of dominated strategy, Dominant Strategy

Nash equilibrium-pure strategy, Formal Definition

Examples of NE in Social Sciences

Neo-liberal institutionalism: infinitely repeated PD

Relative gains argument and zero sum game

Mixed strategy.

Nash equilibrium-mixed strategy

Game tree and extensive forms.

Extensive form games

Sequential Games.

Subgame and subgame perfect NE.

Sequential Games of Complete and Perfect Information: Backward Induction

Repeated games and Folk Theorem. Repeated Games

Imperfect Information.

Sequential Games of Complete but Imperfect information

Bayesian NE.

Bayesian games and Bayesian equilibrium

Examples of Bayesian NE: Mechanism design, Moral hazard

Examples of Bayesian NE: Adverse selection.

Sequential Bayesian Games, Perfect Bayesian NE, Signaling Games

## **Student Survey Form**

Name

Class Year

Major

Research Interests and Thesis

Mathematics, Statistic and Economics Courses Taken

Objective of Participating in the Course