

## **Introduction to Game Theory and Strategic Thinking**

[In 5 Lectures of 1 hour 15 mins duration]

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This 5-lecture course, at George Washington University, will provide a comprehensive overview of game theory and strategic decision-making, without the trappings of algebra and calculus. It is designed for students, political strategists and policymakers in the belief that a modicum of game-theory is essential in today's age of complex diplomacy and strategizing. GWU agreed to make the lectures open to outsiders (non-students); last year there was a large attendance from the Bank and the Fund. Once again, all are welcome. The first lecture, on Jan 15, will be held at Bank's Preston Auditorium. Thereafter the lectures will be in Room 213, Elliott School of International Affairs, GWU, 1957 E St., NW.

In these 5 lectures the student will learn the essential ideas of von Neumann, Morgenstern, Nash, Schelling and others, and how they apply in real-life situations, from the Cuban missile crisis, through corporate strategizing, to matters of ethics and social norms.

This 5-lecture course is part of a full one-semester course offered with Professor James Foster. You are welcome to attend the full-course but beyond the 5-lecture introduction, the course will require familiarity some math and algebra. What follows is an outline of the 5-lecture course.

The main reading materials for the 5-lecture course will be specified chapters from Kaushik Basu's **Prelude to Political Economy**<sup>1</sup> (Oxford University Press) and Dixit and Skeath's **Games of Strategy** (W. W. Norton and Co.). Description of the full course is available on demand.

### **1. Parlor Games and the History of Game Theory (15 Jan, 2013, 6:00-7:15 pm)**

The rise of game theory transformed the way economics is taught and practiced. The breakthrough occurred with von Neumann and Morgenstern's book in 1944 and Nash's papers a few years later, but the subject's origins go back to the analysis of parlor games like Chess, Bridge and Hex.

### **2. John Nash and the idea of Nash Equilibrium (22 Jan, 6:00-7:15 pm)**

Prisoner's Dilemma. Traveler's Dilemma; Assurance Game; Nash's idea of equilibrium in non-cooperative games; the Concept of Focal Point.

### **3. The Hawk-Dove Game & the Cuban Missile Crisis (29 Jan, 6:00-7:15 pm)**

Using game theory to understand defense and defense strategy; the missile crisis of 1962 through game-theoretic lenses; the Hawk-Dove game and why, at times, it pays to appear irrational.

### **4. Repeated Games, Backward Induction and Philosophical Paradoxes (12 Feb, 6:00-7:15 pm)**

The repeated Prisoner's Dilemma; paradoxes of Backward Induction; rationality and Common Knowledge. Some philosophical conundrums of reasoning.

### **5. Social Norms, Political Power and Extensive-Form Games (19 Feb, 6:00-7:15 pm)**

Equilibrium in games played through time; the Chain Store paradox; understanding procrastination, customs, and addiction. Triadic reasoning in economics; political power; Vaclav Havel's idea of totalitarian states; the art of advising governments.

Registration/pre-registration is not required for World Bank and IMF staff. For further details, contact Mr. Bintao Wang (bwang1@worldbank.org)

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<sup>1</sup>This book is available online to World Bank staff on Oxford Scholarship Online <http://www.oxfordscholarship.com/>