Part IIB Paper 4: Economic Theory & Analysis

The paper deals with theoretical economic models and their analysis, going beyond the material taught in Part IIA, Paper 1. An aptitude and taste for logical thinking are essential and fluency in elementary mathematics (algebraic equations, graphs, basic calculus) is required.

There are two lecture courses:
- Game Theory and Contract Theory with Applications
- Market Design

**Game Theory and Contract Theory with Applications**: The first part of this course will build on the Game Theory course in Part IIA Paper 1. It will first review the theory of games of complete information taught in Part IIA, but in a somewhat deeper and more formal way, and then cover static and dynamic games of incomplete information in the context of an array of economic examples including, in particular, auctions and bargaining. In the second part of the course, we will discuss the theory of optimal contracting in static models with adverse selection, both with one agent (the screening model) and with many (in particular, optimal auctions).

**Reading**

**Market Design**: While prices play a central role in the allocation of resources and jobs in many markets, there are economic environments where prices cannot serve a role in aggregating preferences and determining the final allocations. Matching is the study of who is matched with whom (or what) in the absence of a price mechanism to determine the economic outcomes. Examples include school admissions, allocation of organs for transplantation, entry level job markets for junior doctors and teachers. We will explore the design and use of centralised clearing houses and/or mechanisms to help achieve allocations which satisfy a combination of desirable economic/political/ethical properties such as efficiency, equity, and/or fairness.

**Reading**

**Examination**: For details of the examination structure, please refer to the Form and Conduct Notice pages on Moodle.