Design and Analysis of Mechanisms and Institutions

Module Code: ECO00055M  Credits: 10  Term: 2
Contact Hours: 20 contact hours
Module Organiser: Professor Z. Yang and Dr. Y. Ju

Overview:
Over the last three decades, the design and analysis of mechanisms and institutions, in short, mechanism design has developed into one of the most flourishing, exciting, and important economic research areas for practical, empirical and theoretical reasons. Its importance has been widely recognized both within and outside the economic profession. Many recent Nobel prize awards in economics (Leonid Hurwicz, Eric Maskin, Roger Myerson, Elinor Ostrom, James Mirrlees, Alvin Roth, Lloyd Shapley, and William Vickrey) were made on the basis of their fundamental contributions to the subject and beyond. This module is intended to introduce students to the formal analysis and design of economic mechanisms and institutions ranging from English and Dutch auctions for selling single items, double auctions for stock markets, to recent auctions for selling multiple commodities such as oilfields, spectrum licenses and pollution permits. Other mechanisms we study include online auctions, housing markets, marriage matching, job-matching problems, school choice problems, voting systems, optimal taxation problems, etc. The students will be shown how a desired economic goal can be reached by designing a proper mechanism or institution. In particular, many real life and important resource allocation problems will be examined and resolved.

Aims:

• To show students how to analyse various real-life economic mechanisms or institutions such as auctions or double auctions. To illustrate how to improve existing institutions and how to design new mechanisms or institutions for tackling various economic problems.

• To enhance students’ confidence and ability of using economic theories and methodologies to deal with a variety of real life economic problems.

• To give students the opportunity to know and be familiar with one of the most active and important economic research frontiers.

Objectives:

On completing the module students will be:

• able to understand how many real-life economic mechanisms or institutions operate and to know how to analyse the performance of such mechanisms.

• familiar with fundamental principles and techniques for evaluating the outcomes of various economic institutions or mechanisms.
**Assessment:**

There will be a two-hour unseen examination scheduled in the *Summer Term*.

**Pre-requisites:**

Some basic knowledge of probability theory.

**Main References:**

