

2011 Summer School in Economics (SSECO) Instituto de Economía



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CONSOLIDER-INGENIO 2011



The aim of the **Summer School in Economics (SSECO)** is to permit top-flight graduate students, post-docs as well as policy makers with a graduate degree background, the opportunity to gain state-of-the-art insights on relevant topics in a wide range of economics fields. The crash-courses combine a thorough theoretical and methodical underpinning with a clear policy orientation on "how to put theory into practice".



SUPERMODULARITY AND COMPLEMENTARITY

Instructor: Rabah Amir

Course Description:

The goal of this course is to provide a presentation of some selected topics in the theory of supermodular optimization and games along with some of the associated applications in economics. The common thread to all the topics will be economic complementarity. While the treatment will rely directly on research papers and will thus be quite advanced, a definite attempt will always be made to arrive at a self-contained exposition of the main concepts. A simplified introduction to some of the relevant mathematical notions will be given whenever necessary. Economic applications, mostly to models in Industrial Organization, will constitute a significant part of the course.

Dates: May 23, 24, 25 and 26: 16:00-19:00

Venue:

Universidad Carlos III de Madrid (Getafe Campus)
Calle Madrid, 126
Building 15, Room 15.0.15

Registration Fee: 500 € (General), 300 € (Students)*

Scholarships Applications will not be considered after May 13, 2011.

COURSES

May 23-26	Supermodularity and Complementarity, Rabah Amir
June 06-10	Empirical Processes with Applications to Econometrics, Juan Carlos Escanciano
June 14-20	Stochastics Processes, David Nualart
June 27-July 1	Innovation, Patents and Firm Competitiveness, Álvaro Escribano, Andrea Fosfuri, and Marco Giarratana
July 04-07	Auctions and Market Design, Jacob Goeree

EMPIRICAL PROCESSES WITH APPLICATIONS TO ECONOMETRICS

Instructors: Juan Carlos Escanciano

Course Description:

This course consists of two parts. In the first part we review basic concepts of stochastic processes and give an introduction to modern empirical processes theory. We cover concepts such as asymptotic tightness, stochastic uniform equicontinuity, bracketing and covering numbers, Glivenko-Cantelli and Donsker theorems, the continuous mapping theorem and the functional delta method. In the second part, we consider applications to econometrics and use these theoretical results in problems such as model specification, estimation in semiparametric models and the bootstrap.

Dates: June 6, 7, 8, 9 and 10: 16:00 - 19:00

Venue:

Universidad Carlos III de Madrid (Getafe Campus)
Calle Madrid, 126
Building 15, Room 15.0.15 (Map)

Registration Fee: 500 € (General), 300 € (Students)*

Scholarships Applications will not be considered after May 27, 2011.

STOCHASTICS PROCESSES

Instructor: David Nualart

Course Description:

This is a graduate course on stochastic calculus with emphasis on applications in finance. We introduce the basic concepts on continuous time stochastic processes: Brownian motion and Poisson processes, martingales and stopping times with game theory and finance examples. Then we construct the stochastic integral with respect to the Brownian motion, showing basic results including the change of variable formula, Girsanov theorem and martingale representation. We show how to use stochastic calculus to formulate and solve stochastic differential equations driven by Brownian motion. We present simple examples of equations and basic numerical schemes. We illustrate its use for pricing and hedging of derivative securities in the Black-Scholes model, including the relation with partial differential equations through Feynman-Kac formula and further applications to exotic options and interest rate models

Dates: June 14, 15, 16, 17 and 20: 16:00-19:00

Venue:

Universidad Carlos III de Madrid (Getafe Campus)
Calle Madrid, 126
Building 15 Room 15.0.15 (Map)

Registration Fee: 500 € (General), 300 € (Students)*

Scholarships Applications will not be considered after June 3, 2011.

INNOVATION, PATENTS AND FIRM COMPETITIVENESS

Instructors: Álvaro Escribano, Andrea Fosfuri, and Marco Giarratana

Course Description:

Innovation and the investment climate in general are key determinants of firm competitiveness and drivers of productivity and economic growth. This course aims at building a rigorous understanding of the determinants of total factor productivity, innovation, the sources of heterogeneity in firms' innovation activity and the mapping between innovation, productivity and ultimately competitive advantage. The content of the course will be organized in three blocks. The first block deals with the investment climate determinants of total factor productivity, employment, exports and foreign direct investment in Spain and other European and non European countries using data bases of the World Bank. The second block studies the determinants of firm innovation and the sources of heterogeneity in technology commercialization strategies. The third block

focuses on patents as a measure of intellectual property. Each morning session will cover the most recent findings of the literature, while the afternoon session will be devoted to hands on training activities using basic econometric packages like STATA. The course will be of interest to those students and professionals in the area of economics who want to understand more applied issues, and to those in the area of management who want to build up a more analytical understanding of firms' behaviour and corporate strategies related to technology and innovation.

Dates: June 27 - July 1: 10:00-18:00

Monday to Thursday and Friday 10:00-13:00

Venue:

Universidad Carlos III de Madrid (Getafe Campus)
Calle Madrid, 126
Edificio 15, Room 15.1.01(mornings)
and 15.S.03 (afternoons) (Map)

Registration Fee: 1000 € (General), 600 € (Students)*

Scholarships Applications will not be considered after June 17, 2011.

AUCTIONS AND MARKET DESIGN

Instructors: Jacob Goeree

Course Description:

The purpose of the course is to provide a presentation of some recent developments in the study of auction and market design. The approach taken in the course will involve both theoretical and experimental methods. Much of the course will rely on recent research papers and will thus be advanced, but a definite attempt will be made to provide a self-contained exposition of the main concepts. A simplified introduction to some of the relevant mathematical notions will be given whenever necessary. Real life applications, mostly to spectrum auctions, will form a significant part of the course.

Dates: July 4, 5, 6 and 7: 16:00-19:00

Venue:

Universidad Carlos III de Madrid (Getafe Campus)
Calle Madrid, 126
Building: 15 Room: 15.0.15 (Map)

Registration Fee: 500 € (General), 300 € (Students)*

Scholarships Applications will not be considered after June 17, 2011.

* Fee covers the course and accompanying materials. Students may apply for scholarships by sending an application letter documenting the merits of their request to the Director of SSECO, Juan J. Dolado at instituto.economia@uc3m.es, indicating as subject "SSECO-scholarship". Course attendees need to arrange and pay for their own lodging.