

Participation at the summer school is free of charge. Participants will be provided with full board and lodging for the two-weeks period of the summer school (meals during the weekend and travel expenses are due to the participants). Note: students are required to attend the entire two weeks of the school.

A limited amount of travel grants are available for applicants from outside Western and Northern Europe and North America. A request of travel grant together with the motivational letter should be submitted together with the application.

For logistical questions and application forms please contact the Summer School secretary at ccschool@economia.unitn.it or consult our web page at <http://www-ceel.economia.unitn.it>



Program Directors
Axel Leijonhufvud
Enrico Zaninotto

Co-Directors of the School
Cars Hommes
Thomas Lux

Guest Lecturers
Jasmina Arifovic
Doyle Farmer
Robert Axtell
Klaus Reiner Schenk-Hoppe'
Shyam Sunder

Assistant: Nicholas Garrido
Laboratory Director: Luigi Mittone
Lab Technical Assistant: Marco Tecilla

This is the Eighth of a series of intensive courses to be offered by the Computable and Experimental Economics Laboratory (CEEL).

Previous courses were offered in **Computable Economics** (2000, Professor K. Vela Velupillai), **Experimental Economics** (2001, Professor Daniel Friedman), **Adaptive Economic Processes** (2002, Professor Peter Howitt), **Behavioral Economics** (2003, Professors Daniel Friedman and David Laibson), **Institutional Economics** (2004, Professor Richard N. Langlois), **Evolutionary Economic Dynamics** (2005, Professors Ken Binmore and Larry Samuelson), and **Agent-Based Computational Economics** (2006, Professors Leigh Tesfatsion and Robert Axtell).

Computable and Experimental Economics Laboratory (CEEL)

Dipartimento di Economia - Università degli Studi di Trento

Via Inama 5, 38100 Trento (ITALY)

Fax: 0039 0461 882222

Eighth Trento Summer School

Intensive course in Agent-Based Finance



Tecnologie per l'Economia
Computazionale e Sperimentale

CEEL program in Adaptive Economic Dynamics

2-13 July 2007

Centro Congressi Panorama, Trento - Italy

Summary of the Course

Financial markets are complex systems whose frequent volatile eruptions, bubbles and crashes are often described by terms such as 'out-of-equilibrium-dynamics', 'self-organized criticality', and 'life at the edge of chaos' even in the popular press. The huge numbers of agents interacting and competing within modern financial markets indeed suggests to treat them as large systems of autonomous sub-units whose macroscopic features might be seen as unintended emergent phenomena of the bustling microscopic activity. The fact that practically all markets that belong to the financial sphere (stock markets, foreign exchange markets, derivatives, precious metals) share a set of extremely robust and quantitatively uniform statistical regularities lends additional credibility to this viewpoint.

The Eighth Summer School in the Trento Program in Adaptive Economic Dynamics focuses on Agent-Based Finance (ABF) and is designed to familiarize students with the phenomenology of financial markets and recent agent-based and computational approaches to financial markets. Students will be introduced to the relevant tools of dynamic systems theory, econophysics and agent-based modeling and will be guided to their own independent applications of these tools. Topics of the summer school include:

- deterministic and stochastic interacting agent asset pricing models
- complexity, nonlinear dynamics, bifurcations, chaos
- mean field approximation, master equations and Focker Planck equations
- artificial intelligence and artificial markets
- evolutionary strategy selection and herding behavior
- simulation of stylized facts and estimation of heterogeneous agent models
- laboratory experiments with human subjects

Prior knowledge on these topics is helpful, but not required. The Eighth Summer School will run for two weeks and consists of an intensive course on recent developments in ABF as well as invited lectures by international experts in the field.

The course will be taught by **Cars Hommes**, University of Amsterdam and **Thomas Lux**, University of Kiel. Guest lecturers include Professors **Jasmina Arifovic**, Simon Fraser University, **Robert Axtell**, George Mason University and Brookings, **Doyne Farmer**, Santa Fe Institute, **Klaus Reiner Schenk-Hoppe**, University of Leeds, **Shyam Sunder**, Yale University.

This course is the eighth of a series in Adaptive Economic Dynamics offered by the Computable and Experimental Economics Laboratory of the University of Trento (CEEL), supported by Associazione Tecnologie per l'Economia Computazionale e Sperimentale (TECS), with the financial support of Latsis Foundation (Geneva).

Previous intensive courses were offered in:

Computable Economics (2000) Professor Kumaraswamy Vela Velupillai of the University of Trento with guest lecture appearances by Professors Daniel Heymann, Scott Kelso and Francesco Luna.

Experimental Economics (2001) Professor Daniel Friedman of the University of California, Santa Cruz with guest lecture appearances by Professors Massimo Egidi, Peter Howitt, Steffen Huck, Rosemarie Nagel and Reinhard Selten.

Adaptive Economic Processes (2002) Professor Peter Howitt of Brown University with guest lecture appearances by Professors Masanao Aoki, Jasmina Arifovic, Robert Axtell, Richard Day and Seppo Honkapohja.

Behavioral Economics (2003) Professors Daniel Friedman of the University of California, Santa Cruz and David Laibson of Harvard with guest lecture appearances by Professors Colin Camerer, Stefano Della Vigna, Massimo Egidi, Ernst Fehr, George Loewenstein and Ulrike Malmendier.

Institutional Economics (2004) Professor Richard N. Langlois of the University of Connecticut with guest lecture appearances by Professors Meir Kohn, Ugo Pagano, Scott E. Page, Nicolaas J. Vriend, Enrico Zaninotto, Junfu Zhang.

Evolutionary Economic Dynamics (2005) Professors Ken Binmore of the University College, London and Larry Samuelson of the University of Wisconsin with guest lecture appearances by Professors Giovanni Dosi, Dan Friedman, Peter Howitt, Axel Leijonhufvud and Richard Nelson.

Agent-Based Computational Economics (2006) Professors Leigh Tesfatsion, Iowa State University and Robert Axtell, The Brookings Institution, with guest lecturer appearances by Professors John Duffy, Dan Friedman, Mauro Gallegati, Herbert Gintis, Peter Howitt, and Axel Leijonhufvud.

Application Procedure

Persons interested in participating in the Summer School should submit the following:

- the electronic application form
- a detailed Curriculum Vitae
- a two-page essay describing their interest in agent-based finance
- a course transcript from their Ph.D program including advanced examinations passed
- two letters of recommendation

The Trento Summer Schools are intended for Ph.D students and post-doctoral scholars.

Please send all the above documents and information to Prof. Enrico Zaninotto

We encourage electronic submissions: ccschool@economia.unitn.it

Prof. Enrico Zaninotto

Facoltà di Economia

Università degli Studi di Trento

Via Inama 5, 38100 Trento (ITALY)

Fax: 0039 0461 882222

The deadline for application is **30 March 2007**

Admissions decisions will be made and announced by 30 April 2007. All applicants will be informed by e-mail about the results.

Agent-Based Finance