The Italian Econometric Society (SIdE) in collaboration with the Venice centre in Economic and Risk Analytics for Public Policies (VERA) Ca' Foscari University of Venice organizes the course for PhD students in:

**Bayesian Methods in Economics and Finance**  
*Venice, August 30-September 3, 2021*

**Coordinator:**

Gaetano Carmeci  
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**Lecturers**

Gaetano Carmeci, University of Trieste  
Roberto Casarin, University of Venice, Italy Ca' Foscari  
Matteo Ciccarelli, European Central Bank, DG Economics, Head of Forecasting and Policy Modelling Division  
Federico Bassetti, Politecnico di Milano

**Basic Requirements**

Intermediate knowledge of econometrics.

**Description**

The course is an introduction on Bayesian Inference, starting from first principles and covering topics of interest for applied econometricians in economics and finance. The course is addressed to students without previous knowledge of Bayesian Econometrics. The methods introduced in the lectures will be illustrated with hands-on applications in MATLAB based on reasoned statistical and economic examples.
Preliminary readings/Reference textbook for the course


Papers

- Chib, S. (1995), Marginal likelihood from the Gibbs Sampler, JASA, 90, 1313-1321
Handouts, readings and further material will be provided before the beginning of and during the lectures.

**Course outline:**

A. Fundamentals of Bayesian Statistics

B. Bayesian computation
   - Monte Carlo simulation
   - Markov chains
   - Markov Chain Monte Carlo methods (Gibbs sampler and Metropolis-Hastings algorithm)
     a. Comparing performance
     b. Checking convergence
     c. Optimal scaling
   - An introduction to advanced MCMC and other simulation methods

C. Bayesian methods for regression models
   - Normal linear regression models
     a. Standard LRM with spherical and non-spherical errors
     b. Hierarchical models
     c. Seemingly Unrelated Regression models
     d. Panel data models
     e. Introduction to time-varying parameter and stochastic volatility models
   - Bayesian VAR models
     a. Basic models
     b. Bayesian VAR Lasso
     c. Bayesian VAR nonparametric Lasso

**SOFTWARE USED FOR THE APPLICATIONS: MATLAB**

Participants will use their laptops with MATLAB already installed on them.

**Venue and timetables**

The Course requires full-time attendance, and participation is not compatible with other jobs at the same time (e.g. preparation of other exams). Lectures and tutorials will be in English, with the following schedule (provisional):

- Monday to Friday: lectures: 9.00-13.00, 15.00-18.00.

**Fees and Enrollment**

- Students, new graduated students, PhD students and temporary university staff: 340 euro
- University staff: 450 euro
- Others: 1500 euro
In case of enrollment in two or more courses, for a maximum of three, Student and Staff participants are entitled to a discount of 100 euros on each course. Other participants are entitled to a discount of 300 euros on each course.

* The amount due by Master and PhD students from University of Ca' Foscari is 30 euro, since the rest of the fee is sponsored by the Venice centre in Economic and Risk Analytics for Public Policies (VERA)

Contacts

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Sponsors

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