

Syllabus

[cmcd.economia@fgv.br]

Course: Macroeconomics III

Professor: Tiago Cavalcanti (June 2021)

2021 SECOND SEMESTER

COURSE OUTLINE

- Basic principles of computing and programming, approximation of stochastic processes, function approximation methods;
- Global approximation techniques (value and policy function iterations);
- Local linear and quasi-linear methods;
- Methods for models of heterogeneous households and heterogeneous firms.
- Continuous time models

Teaching Assistants: TBA - TA session time to be announced.

METHODOLOGY

Office Hours: To be decided with the students.

Aims and objectives: The aim of the course is to introduce techniques and methods for analysing macroeconomic issues with a particular focus on computational methods for advanced macroeconomics. The topics covered include approximation of stochastic processes, function approximation techniques, linear methods and Monte Carlo simulations. We will introduce students to value and policy function iterations, and methods for models with heterogeneous agents and continuous time.

PROGRAM

- Basic principles of computing and programming, approximation of stochastic processes, function approximation methods;
- Global approximation techniques (value and policy function iterations);
- Local linear and quasi-linear methods;
- Methods for models of heterogeneous households and heterogeneous firms.

- Continuous time models

BIBLIOGRAPHY

Teaching material and reading: There is no main textbook for the course. The students are given necessary lecture notes/handouts, as well as some computing toolboxes (Matlab codes, etc.) for implementing the computational methods covered. This material is also supplemented with a reading list of various papers and chapters from books.

Some useful books:

- Adda, J. and R. Cooper, (2003). “Dynamic Economics”, MIT Press;
- Heer and Maussner (2005). “Dynamic General Equilibrium Modelling: Computational Methods and Applications”, Springer;
- *Judd, K. (1998). “Numerical Methods in Economics”, MIT Press;
- Ljungvist, L. and Sargent, T.J. (2000). “Recursive Macroeconomic Theory”, MIT Press;
- Marimon, R. and Scott, A. (1998). “Computational Methods for the Study of Dynamic Economies”, Oxford University Press;
- *Miao, J. (2014). “Economic Dynamics in Discrete Time”, MIT Press;
- Miranda, M.J. and Fackler, P.L. (2002). “Applied Computational Economics and Finance”, MIT Press;
- Stokey, N. and R. Lucas, (1989). “Recursive Methods in Economic Dynamics’ Harvard University Press.

ARTICLES

The articles will be assigned during the lectures.

GRADING

The grade will be based on four problem sets (70%) and a project (30%). The project will be a reproduction of numerical results of some well-established papers (I will write some options). I will define the deadline for the project later on.

PROFESSOR – EMAIL

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