Computational Economics

Spring 2026

Basic Information:

Instructor:	Nawid Siassi
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Class dates:	See detailed schedule below (first class: March 5)

Description:

In this course you will learn how to obtain numerical solutions to economic models for which closed-form solutions are unavailable. A particular focus will be placed on solution algorithms for dynamic equilibrium models which are widely used in macroeconomics. Throughout the course, the emphasis is on applications: Based on a series of coding exercises, you will learn how to implement and solve the models discussed in class. We will discuss your solutions to these exercises in tutorial classes. The course concludes with a final project where students present a paper of their own choice from the literature and attempt a partial replication of it.

Prerequisites:

Students should have completed intermediate courses in microeconomics and macroeconomics. Having some experience in programming is recommended. Prior knowledge with dynamic economic models is beneficial but not absolutely necessary.

Programming Language:

Throughout the course, we will perform numerical computations using Matlab. If you have not worked with Matlab before or need to refresh your knowledge, please consult a tutorial guide before the course (I can provide some practice exercises upon request). Students can get a free licensed Matlab copy from the TU Wien IT webpage (http://www.sss.tuwien.ac.at/sss/mla/).

Grades:

The final grade will be based on problem sets (30%) and a final project (70%).

Outline:

- Introduction
- Value Function Iteration
- Calibration and Stochastic Simulation
- Linearization and Perturbation Methods
- Models with Heterogeneous Agents
- Overlapping Generations Models

Schedule:

MARCH 5	13:00-14:30	Lecture	APRIL 16	13:00-14:00 14:15-15:45	Tutorial Lecture
MARCH 12	13:00-14:30	Lecture	APRIL 23	13:00-14:00 14:15-15:45	Tutorial Lecture
MARCH 19	13:00-14:00 14:15-15:45	Tutorial Lecture	APRIL 30	13:00-14:00 14:15-15:45	Tutorial Lecture
MARCH 26	13:00-14:00 14:15-15:45	Tutorial Lecture	MAY 21 MAY 28	13:00-16:00 13:00-16:00	Presentations Presentations

Room: Freihaus, Sem.R. DB gelb 04.

References:

- Heer, B. and Maussner, A. (2024), "Dynamic General Equilibrium Modeling: Computational Methods and Applications," 3rd edition, Springer.

- Quadrini, V. and Ríos-Rull, J. (2015), "Inequality in Macroeconomics," Handbook of Income Distribution, ed. by A. Atkinson and F. Bourguignon, vol 2, Chapter 15.

- Stachurski, J. (2022), "Economic Dynamics: Theory and Computation," 2nd edition, MIT Press.