

Introduction to Programming for Economists

University of Konstanz

B.Sc. in Economics, Summer Semester 2024

Instructor

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Office hours: Mondays, 4pm–5pm, in F231 or send an e-mail to schedule a meeting.

Lectures and Tutorials

Lectures: tba

Tutorials: tba

In the lectures, I will present the material. The tutorials will serve as an opportunity for students to solve exercises, ask questions, and get feedback.

Description

The goal of the course is to give students a basic understanding of programming in economics and provide them with computational tools that can be applied broadly throughout their studies. Applications will use Matlab.

Prerequisites

None.

Course material

Lecture slides will be available on ILIAS. The course is based on material from different sources. The lectures will be self-contained and there are no required readings. The following references may be useful for further reading, albeit they also cover more advanced topics beyond the scope of this course.

- Jesús Fernández-Villaverde. 2022. “Courses on Computation.” <https://www.sas.upenn.edu/~jesusfv/teaching.html>
- Harry J. Paarsch and Konstantin Golyaev. 2016. *Gentle Introduction to Effective Computing in Quantitative Research: What Every Research Assistant Should Know*. MIT Press
- Arthur Turrell. 2022. “Coding for Economists.” <https://aeturrell.github.io/coding-for-economists/>

- Fedor Iskhakov. 2021. “Foundations of Computational Economics.” <https://fedor.iskh.me/compecon>

Additional references will be mentioned in the lectures.

Tentative Schedule

1. Organization
2. Introduction
 - (a) What is programming and why use it in economics?
 - (b) Overview of programming languages
3. Getting Started with Coding and Matlab
 - (a) Coding basics and Matlab essentials
 - (b) Functions and control flow
 - (c) Handling data, plotting and data visualization
4. Some Numerical Methods for Economics
 - (a) Root finding
 - (b) Search and Sorting, Divide and Conquer
 - (c) Optimization
 - (d) Random numbers
5. Programming Projects
 - (a) Programming concepts, good practices, (version control)
 - (b) Testing, profiling, debugging
6. Additional Topics

Grading

Grading will be based on a final exam (100%). The exam will include questions that are to be answered with the help of a computer. Students will be allowed to access the code they have written during the course.