Computational Macroeconomics I (Python) - CAEN/UFC

Instructor: Marcelo Aarestrup Arbex

Period: April 24 - 28, 2023
Lecture Day: Monday - Friday

Lecture Time: 9h - 17h
Lecture Location: CAEN's auditorium and computer lab.

Course Material: TBA

A. Course Description

In this course we will cover a static model of firms, consumers and economy's equilibrium (application: minimum wage). We will then study the following topics: Deterministic Solow Model, Solow Model and Transition Costs, Cycles, Trends and Business Cycles Data, Stochastic Solow Model, Introduction to Optimal Saving, Households and Asset Pricing - The Equity Premium Puzzle. It will also provide a fast paced introduction to Python for computational economic modeling.

Module I - Static Problems

1. **Firms Problem** (Lec1_1_FirmsProblem.ipynb)
2. **Household Labor Supply Problem** (Lec1_2_Household_LaborSupply.ipynb)
3. **General Equilibrium: Firms, Consumers and Prices** (Lec1_3_Equilibrium.ipynb)
4. **Tax Policy in Equilibrium** (Lec1_4_PolicyAnalysis.ipynb)
5. **Minimum Wage and Unemployment** (Lec1_5_MinimumWage)

Module II - Dynamic Problems

1. **Deterministic Solow Growth Model** (Lec2_2_DeterministicSolowModel.ipynb)
2. **Transition and Policy Analysis** (Lec2_3_TransitionsPolicyAnalysis.ipynb)
3. **Cycles, Trends and Business Cycles Data**(Lec2_4_CyclesTrendsBusinessCyclesData.ipynb)
4. **Stochastic Solow Growth Model** (Lec2_5_StochasticSolowModel.ipynb)
5. **Introduction to Optimal Savings** (Lec2_7_IntroductionOptimalSaving.ipynb)

B. Reference Material

- *Introducing Advanced Macroeconomics: Growth and Business Cycles*, Peter Sorensen, Hans Whitta-Jacobsen. McGraw-Hill, 2010.
- *Macroeconomics for MBAs and Masters of Finance,* Morris Davis, Cambridge University Press, 2009.
- *Advanced Macroeconomics*, David Romer, 4th Edition, McGraw-Hill, 2012.
- *Quantitative Economics with Python*