

# Quantitative Macroeconomics I (Python) - CAEN/UFC

**Instructor:** Marcelo Aarestrup Arbex

**Period:** May 02 - 05, 2023

**Lecture Day:** Tuesday - Friday

**Lecture Time:** 8h - 17h30

**Lecture Location:** CAEN's auditorium and computer lab.

**Course Material:** TBA

## A. Course Description

This course is intended as an introduction to dynamic economic models. It is designed to take graduate-level students to a point where they can understand relatively complex linear deterministic/stochastic dynamic general equilibrium models and solve them numerically. We will cover the following topics: the basic Solow model, infinitely lived agents, recursive deterministic models, Hansen's indivisible labor model and Cass-Koopmans model.

## Module I - Infinitely Lived Agents

1. **Infinitely Lived Agents** (Lec1\_1\_InfLivedAgents.ipynb)
2. **Neoclassical Growth Model** (Lec1\_2\_NeoGrowthModel.ipynb)

## Module II - Recursive Deterministic Models

1. **Recursive Deterministic Models** (Lec2\_1\_RecursiveModels.ipynb)
2. **Hansen's Basic RBC Model** (Lec2\_2\_HansenBasic.ipynb)
3. **Hansen's Model with Indivisible Labor**(Lec2\_3\_HansenIndivisible.ipynb)
4. **Cass-Koopmans Model** (Lec2\_4\_CassKoopmansPlanner.ipynb)
5. **Cass-Koopmans Competitive Equilibrium** (Lec2\_5\_CassKoopmansCE.ipynb)

## B. Reference Material

- *Advanced Macroeconomics*, David Romer, 4th Edition, McGraw-Hill, 2012.
- *The ABCs of RBCs: An Introduction to Dynamic Macroeconomic Models*. George McCandless. Harvard University Press. 2008.
- *Economic Dynamics: Theory and Computation*, John Stachurski, The MIT Press, 2009.
- *Applied Computational Economics and Finance*, Mario Miranda and Paul Fackler, The MIT Press, 2002.
- *Quantitative Economics with Python*