

***Advanced Macroeconomic Theory 2, Part 1***  
Summer Semester 2022  
Prof. Dr. Alexander Meyer-Gohde  
Chair of Financial Markets and Macroeconomics

**Lecture:** Hybrid  
HoF - HoF E.20 / DZ Bank  
04/22/2021 – 05/27/2022  
08:30 a.m. - 12:00 noon

31. März 2022

**Faculty of Economics and  
Institute for Monetary and Financial  
Stability**

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**Chair of Financial Markets and  
Macroeconomics**

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**Hybrid Course:** Due to the ongoing COVID-19 pandemic, this course will be offered in a hybrid format. Alongside the complete in-person offering, all material including videos of lectures and recitations will be available online. The exact modalities will be communicated via OLAT. Please contact us if you have any concerns and, most importantly, stay safe!

**Course Grade:** The grade will be based on a final exam.

**Course Description:** This course will introduce students to the rigorous solution, estimation, and analysis of business cycle models. Numerical solution methods will be compared in the analysis of the real business cycle (RBC) model and numerical estimation techniques introduced in the analysis of New Keynesian models. Thus, the course will have a twofold focus on models and techniques.

**Textbook:**

*Recursive Macroeconomic Theory*

4th Edition, MIT Press, 2018

By Thomas J. Sargent and Lars Ljungqvist

*Numerical Methods in Economics*

MIT Press, 1998

By Kenneth L. Judd

*Monetary Policy, Inflation, and the Business Cycle*

Princeton University Press, 2015

By Jordi Galí

**Course Outline**

*Part I: RBC and Solution Methods*

1. Benchmark RBC model
2. Analytic Case: Value Function Iteration, Howard's Improvement, (Log)linearization
3. Linearization / Solving linear rational expectations models
4. Numerical Case: VFI
5. Numerical Case: Projections and Parameterized Expectations
6. Numerical Case: Local Nonlinear Approximation Perturbation

*Part II: New Keynesian and Estimation*

7. Monopolistic Competition and Nominal Rigidities (Calvo and Rotemberg)
8. Basic New Keynesian Model
9. Likelihood based estimation
10. Positive analysis of the NKM
11. Normative analysis of the NKM

**Learning Goals**

LGB-1: Students will understand and apply state-of-the-art structural macroeconomic models of the business cycle.

LGB-2: Students will master the numerical techniques for solving, estimating, and analyzing state-of-the-art structural macroeconomic models.

LGB-3: Students will be able to apply the techniques and their understanding of the course's models in their further studies and use them to inform their understanding and discussion of the macroeconomy.

LGB-5: Students will be able to use and apply the numerical analysis programs Matlab and Dynare

LGB-7: Students will be able to express, explain and analyze state-of-the-art models formally, verbally and graphically.