Dynamic Macroeconomics
MA ECON AM MPE DYNMAC

UNIVERSITÄT BONN

Content and learning outcome

Content	The course studies first revisits basic algorithms to solve single agent dynamic programming problems, then discusses possibilities to improve on these algorithms, such as perturbation and projection methods. These techniques are applied to study the business cycle characteristics of model economies. Then algorithms are studied to solve recursive general equilibrium models with heterogeneous agents, such as Aiyagari's (1994) or Krussell and Smith's (1998) model.
Learning outcome	The course has two aims: First and foremost, it aims at acquainting students with the numerical techniques needed to understand modern macroeconomic analysis involving the solution of dynamic programming problems. Second, it repeats in an applied manner concepts and results studied theoretically in the macroeconomics basic course: e.g. business cycle theory, savings decisions, general equilibrium with imperfect capital markets, heterogeneous agent economies.

Teaching and learning methods

Type of course/ learning methods	Topic	Language of instruction	Group size	Contact time	Workload [h]
Lecture	Dynamic Macroeconomics	English	30	4 hours	60
Self-study					165

Prerequisites

obligatory	none
recommended	A basic understanding of numerical programming and MATLAB as programming language is helpful but not required.

Degree program allocation

Study Program/Study Field/Module Number/Lecture Number	obligatory/ elective	Semester
Economics (M.Sc.)/ Macroeconomics and Public Economics, Economic Research/332122007/332022007	elective	2nd

Requirements for the awarding of credit points (ECTS)		Credits
Prerequisites for Participation	None	7,5 CP
Types of Assessment Examination language	Written or oral exam or term paper (graded, 100%) English	

Course Cycle		Workload	Duration
Winter term ☐ Summer term ☒	Winter and Summer term ☐	225 h	1 Term

Module coordination

Teaching person	See https://basis.uni-bonn.de
Module coordinator	Prof. Dr. Christian Bayer
Institute/Department	Department of Economics

Further Information

Literature	Students having already passed exams in "Macroeconomics II: Dynamic Macroeconomics" cannot take exams in this module. Primary readings are: **Burkhard und Alfred Maußner**, Dynamic General Equilibrium Modelling, Computational Methods and Applications, 2. Edition, Springer: Berlin 2008 **Jerome Adda and Russell W. Cooper**, Dynamic Economics: Quantitative Methods and Applications, MIT Press, Cambridge MA, 2003.