

Syllabus

Name:			
Computational Economics – Advanced Level			
Responsible:			
Professor Hans Fehr, Chair of Public Finance			
Program:	Type:	Term:	ECTS:
Master	Lecture	Summer	6 CP
Contents & Objectives:			
<p>This course provides students with state of the art techniques for quantitative macroeconomic research. They will learn the most prominent models in this field and familiarize with the relevant literature. Ideally at the end of the course, they will be able to develop their own ideas and conduct their own policy analysis using the techniques acquired.</p> <p>The course will consist of a series of lectures and exercise classes. The teaching sequence is divided into three parts:</p> <p>In the first part, students will review programming in FORTRAN and applying numerical methods. Note that it is expected here that students have already some programming skills.</p> <p>The second part will be concerned with solution techniques to dynamic programming problems and will introduce the basics of the Ramsey model and the Heterogeneous agent model.</p> <p>In the last part focusses on reliable policy analysis in the stochastic overlapping generations (OLG) model and discusses recent literature that applies this model to analyze public policy reforms.</p>			
Prerequisites:			
<p>Students that attend this course should know about basic macroeconomics. Knowledge of heterogeneous agent models will be helpful. As already said, some programming skills are required for this course. The BA course "Computational Economics" would be perfect, but also some background in Matlab programming is fine. In addition, they should bring along a strong willingness to specialize in programming (which implies that they will program a lot themselves).</p>			
Course Structure:			
Week	Content		
1-3	FORTRAN 90: A simple programming language		
4-5	Numerical solution methods Nonlinear equation systems, Function minimization, Function approximation and interpolation		
6-7	Introduction to dynamic programming		
8-10	Dynamic Macro I: Infinite horizon models		
11-12	Dynamic Macro II: Stochastic OLG model		
Literature:			
Fehr, Hans & Fabian Kindermann (2015): Introduction to Computational Economics using FORTRAN.			
Grading:			
There will be three graded assignments which are solved in groups during the semester.			
Contact:			
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