UNIVERSITÄT WIEN
Department of Economics

Summer Term 2017

040068 UK Dynamic Macroeconomics with Numerics (6 hours; 12 ECTS)

Univ.-Prof. Monika Merz, Ph.D.

Lectures: Mon 7:45 – 9:30 a.m., Lecture Hall 8 and Tue 7:45 – 9:00 a.m. Lecture Hall 16

COURSE CONTENT

This course is aimed at master level students and beginning doctoral students. It covers the foundations of stochastic dynamic general equilibrium models that are commonly used in modern macroeconomics. The course presents alternative equilibrium concepts, the basics of dynamic programming, selected time-series methods and numerical methods commonly used to solve dynamic recursive models. The goal is to equip students with the tools needed to do independent research in macro.

REQUIRED TEXTS

Ljungqvist, L., T. Sargent 2012. Recursive Methods in Macroeconomic Theory, 3rd edition, Boston (MIT-Press). Abbreviated as **LS**

Additional material is provided via Moodle.

OFFICE HOURS

Monika Merz: Tue 11:30 – 12:30 a.m. Please register ahead of time via email.
Martin Kerndler: Wed 11:30 – 12:30 a.m.

PRACTICE SESSIONS

Martin Kerndler, Tue March 7 11:30 – 13:00 and from March 15til June 14 on Wed 9:45 – 11:15 PC Seminar Room 5, OMP 1.

REGISTRATION

Please register online. Dropping the course is possible until **March 15, 2017**, midnight.

GRADING

The course grade will be based exclusively on (i) homeworks (30%), (ii) group projects (30%), and a midterm exam (40%) on April 25. Please, mark your calendar now!

COURSE OUTLINE

1. The BIG Picture **Week 1**

   Primary Reading:

   Lucas, R.E. 1975. „Econometric Policy Evaluation: A Critique,“ in K. Brunner, A. Meltzer, eds., The Phillips Curve and Labor Markets, North Holland.

   V.V. Chari 1998. “Nobel Laureate Robert E. Lucas, Jr.: Architect of Modern Macroeconomics,” *Journal of Economic Perspectives*, 12:171-186.

   Browning, M., L.P. Hansen, J. Heckmann 1999. “Micro Data and General Equilibrium Models,” in: J. Taylor and M. Woodford (eds.) *Handbook of Macroeconomics*. Vol. 1A. Amsterdam: North-Holland 543-633.

2. Arrow-Debreu Competitive Equilibria with Applications **Week 1-3**

   Primary Reading: LS ch. 8

   2.1 The Neoclassical Growth Model – Social Planner’s Version
   2.2 The Neoclassical Growth Model – Competitive Equilibrium Version

   Primary Reading: LS ch. 12

3. Time-Series Tools **Week 4 - 6**

   3.1 Markov Chains

   3.2 Linear Difference Equations

   3.3 The Law of Iterated Expectations

4. Numerical Solution Methods

   4.1 Perturbation Methods: Linear-quadratic Approximation **Week 7 - 9**
   4.2 Perturbation Methods: Log-linear-quadratic Approximation
   4.3 Projection Methods: Parameterized Expectations **Week 10**
   4.4 Extension: ‘Equilibrium Unemployment and the Business Cycle’ **Week 11-12**