

## Economic Growth II (Wirtschaftswachstum II)

Lectures (English): Tue 8-10 a.m., Hörsaal Anbau, Boltzmannstr. 20

Übung (deutsch): Mo 10-12, Hörsaal Anbau, Boltzmannstr. 20

1st meeting: April 15, 2008

Last meeting: July 15, 2008

The course will cover selected areas of the modern theory of economic growth, building upon the material presented in the course Economic Growth I (*Wirtschaftswachstum I*). We will discuss models with optimizing consumers and with human capital (Lucas). Going beyond the Romer approach, models with endogenized technical change à la Aghion & Howitt will be covered. One or two earlier authors of historical interest and, time permitting, some very recent articles will possibly also be discussed. As far as techniques are concerned, we will introduce dynamic optimization, both in a discrete variant (“dynamic programming” à la Bellman) and a continuous variant (“optimal control” à la Pontryagin). The basics of Poisson processes, as required for the stochastic side of Aghion-Howitt-type models, will also be presented. The relevance of the chosen approaches for empirical and policy issues will be discussed. The course prepares the ground for the seminar *Wirtschaftswachstum III* in which the most recent harvest of papers on the topic of growth will be covered.

### Registration:

Please register via *Blackboard*. Notice, however, that additionally you may have to register elsewhere. Thus, students of *VWL/BWL* are required to register with the *Prüfungsbüro Winiss.* (the forms will be distributed in class), master students *OES* with *Campus Management*.

### Exams:

There will be one written exam (2 hrs) at the end of the term.  
The problem sets discussed in the *Übung* will remain ungraded.

### Structure:

The course will rely on the articles by Aghion & Howitt, Lucas, Ramsey, Romer and on the books by Aghion & Howitt, Acemoglu, Barro & Sala-i-Martin, and possibly Wickens. Inevitably, the course will be quite mathematical in content. However, an effort will be made to present the results also in an intuitive fashion.

## Literature:

### *Books:*

Acemoglu, Daron 2008. Introduction to Modern Economic Growth. Princeton University Press (to appear in 2008). Manuscript downloadable from <http://econ-www.mit.edu/files/2383> and <http://econ-www.mit.edu/files/2384>.

Aghion, Philippe, and Peter W. Howitt 1998. Endogenous Growth Theory. MIT Press, Cambridge, Mass.

Barro, Robert J., and Xavier Sala-i-Martin 2003. Economic Growth, Second Edition. MIT Press, Cambridge, Mass.

Romer, David 2001. Advanced Macroeconomics, Second Edition. McGraw Hill, New York et al.

Wickens, Michael R. 2008. Macroeconomic Theory. A Dynamic General Equilibrium Approach. Princeton University Press.

### *Articles:*

Aghion, Philippe, Howitt, Peter 1992: A Model of Growth Through Creative Destruction. *Econometrica*, Vol. 60, No. 2 (March), pp. 323-351.

Lucas, Robert E. 1988: On the Mechanics of Economic Development. *Journal of Monetary Economics*, Vol. 22, No. 1, pp. 3-42.

Ramsey, Frank P. 1928: A Mathematical Theory of Saving. *The Economic Journal*, Vol. 38, pp. 543-559.

Romer, Paul M. 1990: Endogenous Technical Change. *Journal of Political Economy*, Vol. 98, No. 5, pp. S71-S102.

### *Mathematical background:*

Chiang, Alpha C. 1984. *Fundamental Methods of Mathematical Economics*. McGraw-Hill, New York.

Chiang, Alpha C. 1992. *Elements of Dynamic Optimization*. McGraw-Hill, New York.

Dixit, Avinash K. 1999. *Optimization in Economic Theory*. Oxford University Press.

Sydsaeter, Knut, and Peter Hammond 2002. *Essential Mathematics for Economic Analysis*. Prentice Hall, Harlow.

Sydsaeter, Knut, Peter Hammond, Atle Seierstad, Arne Strom, and Knut Sydster 2005. *Further Mathematics for Economic Analysis*, Prentice Hall, Harlow.