

Mini Course on Sustainable Long–Run Growth

Graduate School of Decision Sciences

Konstanz, May 2017

- **Professor:** Berthold Herrendorf

- Office hours are by appointment.
- Use berthold.herrendorf@asu.edu to make an appointment.

- **Description**

- The target group of the course are students who are interested in writing a dissertation in economic growth or in environmental macroeconomics.
- The course introduces the students to the theory of endogenous growth through innovation and the theory of directed technological change.
- It then applies these models to the key question in environmental macroeconomics: Under which conditions long–run growth is sustainable? Put differently: Under which conditions is it possible to have long–run growth of GDP per capita without having an environmental disaster.

- **Tentative plan for course**

- Lecture 1 (29.5., Room G305, 10:00-11:30):
Technological Progress and Growth – Exogenous Growth
- Lecture 2 (29.5., Room C422, 15:15-16:45):
Growth and the Environment – Sustainable Exogenous Growth
- Lecture 3 (30.5., Room D201, 10:00-11:30):
Vertical Innovation and Growth – Endogenous Growth
- Lecture 4 (30.5., Room P601, 13:30-15:00):
Directed Technical Change – Sustainable Endogenous Growth

- Lecture 5 (2.6., Room D201, 11:45-13:15):

Directed Technical Change – Sustainable Endogenous Growth

- **General References**

- Acemoglu (2014): “Introduction to Modern Economic Growth”, Princeton University Press;
- Barro and Sala-i-Martin (2004): “Economic Growth”, Chapters 6–7, Second Edition, MIT Press.
- Handbooks of Economic Growth (2005, 2014): Elsevier. Collection of review articles about topics of current interest.
- Jones and Vollrath (2013): “Introduction to Economic Growth”, Norton. Advanced undergraduate textbook.

- **Specific References**

- Acemoglu (2002): “Directed technical change”, *Review of Economic Studies*.
- Acemoglu (2007): “Equilibrium bias of technology”, *Econometrica*.
- Acemoglu, Aghion, Bursztyn and Hemous: (2012): “The environment and directed technical change”, *American Economic Review*.
- Acemoglu, Akcigit, Hanley, Kerr (2016): “Transition to clean technology”, *Journal of Political Economy*.
- Brock and Taylor (2005): “Economic growth and the environment: A review of theory and empirics”, *Handbook of Economic Growth*, Elsevier.
- Fried (2016): “Climate Policy and Innovation: A Quantitative Macroeconomic Analysis”, *Manuscript*, Carlton College.
- Romer (1990): “Endogenous Technological Change”, *Journal of Political Economy*.