

Lecture in “Economics of Technical Change“ (V2/Ü2,14ss-19317)

Prof. Dr. Reinhard Madlener

Description

“Economics of technical change” addresses technological and organizational improvements at the core of economic growth. Following a micro- and macroeconomic approach, this course will shed light on core concepts at the base of technical change as well as traditional economic theories and methods related to this phenomenon. Thus, emphasis will be placed on the dynamics behind investments in R&D, innovation adoption (mainly taking place at firm level) and diffusion as well as organizational and institutional changes. Examples and empirical evidence will be provided in support of the theory. Among other, the course tackles industrial measures designed to enhance knowledge protection and transfer – such as standardization, intellectual property and patent– path dependence and lock-in effects, endogenous growth theories, and structural change. In this context, policies and their implications are also illustrated.

Organization

Date and place: Thursdays, 14:30 – 16:00 p.m., Room 140, Schinkelstr. 1 / Templergraben 51 (Building 1080). Successful participation in this course requires registration via CAMPUS and passing of a written exam¹ (60 minutes) at the end of the course. Exercise units will accompany the lecture (Mondays, 12:15-13:45 p.m., Room 209, Lochnerstraße 4-20, Building 1541). Powerpoint slides and additional material will be provided via the e-Learning platform (L²P).

Time schedule and contents

Unit	Date	Topic	Relevant textbook chapters (provisional)
1	10 April	Basic definitions and concepts	[1] Ch. 1, [7] Ch. 1
2	17 April	Knowledge as a public good	[7] Ch. 4; [3] Ch. 12
3	24 April	Intellectual property, patents and open technologies	[1] Ch. 9
4	8 May	Standardization & competition; Adoption of technology	[3] Ch. 3, 4, 12, 14; [6] Ch.4
5	15 May	Diffusion of technology	[1] Ch. 16; [7] Ch. 7
6	5 June	Regional aspects of innovation and diffusion	[5] Ch. 61
7	26 June	Financial aspects of investments in R&D	[7] Ch. 8
8	3 July	Path dependence and lock-in	[1] Ch. 3; [4] Ch. 1,4,10,11
9	10 July	Innovation, structural change, GPT, and growth	[1] Ch. 14; [2] Ch. 4
10	17 July	Policy considerations	[7] Ch. 12

Preparation for the exam

We recommend reading the above-mentioned textbook chapters for a basic understanding of each lecture topic. However, a preparation exclusively based on textbooks is NOT sufficient for the successful overcoming of the exam. To this purpose, lecture slides and topic-specific papers (uploaded in L²P) will also have to be covered by students.

Learning goals

- Getting a sound knowledge of definitions and concepts characterizing the economics of technical change
- Being able to clearly illustrate economic theories and policies presented during the course with the provision of *ad-hoc* examples
- Being able to take part in interdisciplinary discussions

¹ Dates: Aug. 1, 2014 from 13:30 to 14:30 hrs, and Sep. 23, 2013 from 14:30 to 15:30 hrs.

Group of participants

Enrolment to this course is open to students of business administration, economics, and students with double-degree in economics, industrial engineering and related fields.

Prerequisites: Basic knowledge of microeconomics.

Textbooks

[1] Antonelli, C. et al. (Eds.) (2006). *New Frontiers in the Economics of Innovation and New Technology. Essays in Honor of Paul A. David*, Edward Elgar, Cheltenham, UK and Northampton, Mass., USA.

[2] Barro, R.J and Sala-i-Martin, X. (2004). *Economic Growth*. The MIT Press, 2nd Edition, Cambridge, Massachusetts.

[3] Blind (2004). *The Economics of Standards: Theory, Evidence, Policy*. Edward Elgar, Cheltenham, UK; and Northampton, Mass., USA.

[4] Garud, R. and Karnøe, P. (2001) *Path Dependence and Creation*. Psychology Press, 1st edition, Hove, East Sussex, UK

[5] Handerson, J. V. and Thisse, J.F. (2004) *Handbook of Regional and Urban Economics*, Vol.4 : 2063-3073.

[6] Shy, O. (2001). *The Economics of Network Industries*. Cambridge University Press.

[7] Stoneman, P. (Ed.)(1995). *Handbook of the Economics of Innovation and Technological Change*, Blackwell, Oxford, UK and Cambridge, USA.

Information

For further info, kindly visit the FCN Website (www.eonerc.rwth-aachen.de/fcn).

For additional questions, please write an e-mail to Veronica Galassi (vgalassi@eonerc.rwth-aachen.de;
Office hours: Mon 14:30-16:00 hrs).