

SUBJECT:	Mathematical Economics		
HOURS:	18	ECTS:	3

Name/title of the author:	Prof. Andrzej Malawski
Course Description:	This course is divided into two parts which cover two standard economic theories, i.e., general equilibrium theory and neoclassical growth theory. This way, the course gives the general, strict and elegant account of the behaviour of economic agents within the Arrow-Debreu general equilibrium model as well as such analysis of functioning of economic system on the macro level within the Solow economic growth model and its extensions.
Learning Outcomes (skills and knowledge):	At the completion of the course the students should: <ol style="list-style-type: none"> 1. Be able to analyse decision making mechanisms of economic agents and apply them to their own research projects, 2. Be able to study the processes of growth in real economies, 3. Be able to understand the basic concepts and techniques of higher mathematics employed in contemporary theoretical economics, i.e. the set-theoretical apparatus as well as differential equations.
Course Content:	<ol style="list-style-type: none"> I. The Arrow-Debreu general equilibrium model <ol style="list-style-type: none"> 1. Commodity/price space R^l 2. Production system: general description, production sets, profit maximization 3. Consumption system: general description, consumption sets, preference maximization 4. Debreu economy with the private ownership: existence of general competitive equilibrium 5. Pareto optimality: fundamental theorems of welfare economics II. Introduction to economic growth theory. <ol style="list-style-type: none"> 1. The Domar growth model 2. The Solow growth model 3. New growth theory
Methods of Instruction:	Lecture
Assessment policy (examination):	Final exam (written)
References:	<p>D. Acemoglu, Intorduction to Modern Economic Growth, Princeton University Press, Princeton and Oxford 2009.</p> <p>G. Debreu, Theory of Value, John Wiley, New York 1959.</p> <p>A. Mass-Colell, M.D. Whinston and J.R. Green, Microeconomic Theory, Oxford University Press, New York 1995.</p> <p>D. Romer, Advanced Macroeconomics, McGraw-Hill Companies, New York 1996.</p>

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