Study programme(s): Applied mathematics (MB)

Level: master

Course title: Mathematical models in economics (MB-07)

Lecturer: Zorana Lužanin

Status: obligatory for MB, module Financial mathematics

ECTS: 7

Requirements:

Learning objectives

The objective of this course is to introduce students of mathematics to a few of the countless applications of mathematics in modern economics and finance. Much of the mathematics will be familiar, and the emphasis will be on applying it in economics.

Learning outcomes

Functional knowledge of mathematical models that are used in microeconomics and macroeconomics. The ability to define and practical application of appropriate model for the type of problem (consumption, production, inflation, unemployment, exchange rate, etc.).

Syllabus

Theoretical instruction

Models in microeconomics: preference and choice; budgets; demand function; classical demand theory; preference and utility; production;

Models in macroeconomics: goods and money market dynamics; IS-LM model

Practical instruction

Tasks and problems are solved, practical lessons follow the teaching content i.e. theoretical instructions.

Literature

1. K. J. Arrow, M. D. Intriligator, eds, Handook of Mathematical Economics, Elsevier Science Publishing Company, 1987
2. A. de la Fuente, Mathematical Methods and Models for Economists, Cambridge University Press, 2000
3. A. Mas-Collel, M. D. Whinston, J. R. Green, Microeconomic Theory, Oxford University Press, 1995
4. R. Shone: Economic Dynamics, Cambridge, 2002
5. H. R. Varian, eds, Economic and Financial Modelling with Mathematics, Springer, 1993

Weekly teaching load				Other:
Lectures: 4	Exercises: 2	Other forms of teaching:	Student research:	

Teaching methodology

Lectures, exercises, analysis of examples with applications, writing reports and statistical analysis.

Grading (total number of points 100)

Pre-exam obligations	**points**	**Final exam**	**points**
seminar	20	oral exam	
tests		written exam	40
colloquia	40		