

Subject name:		Theory of Forecasting and Simulations	ECTS: 5
Effects:		The content of the effect assigned to the subject:	Directional effect reference:
Knowledge: (In terms of knowledge, the graduate knows and understands)	W1	methods of optimising economic decisions and systems (including computer systems) of decision support, modern trends in this field, concerning e.g. artificial neural networks and genetic algorithms.	
	W2	economic phenomena on a micro and macro scale. The student can determine relations between economic processes and links between economic structures and institutions on a national and international scale.	
	W3	how to analyse the dynamics of phenomena and complex economic systems, including the construction of appropriate models with the use of adequate research tools. The student can classify research objects and to determine forecasts for any time horizon.	
Skills: (In terms of skills, the graduate can)	U1	understand the causes and course of socio-economic processes and phenomena, expanded by formulating their own opinions on the subject and by formulating simple research hypotheses and verifying them.	
	U2	forecast and predict and model complex social processes of phenomena from various areas of social and economic life using advanced econometric and IT methods and tools.	
	U3	apply a range of analytical, simulation and expert methods to formulate and solve problems of economic practice.	
Social competences: (Within the scope of competence, the graduate is ready to)	K1	independently and critically supplement and improve the acquired knowledge and skills, extended by an interdisciplinary dimension.	
	K2	provide information about the achievements of computer science and various aspects of the profession of an economic analyst	
Course content ensuring the achievement of learning outcomes:		Theoretical bases of forecasting socio-economic phenomena. Non-quantitative forecasting methods: analogue methods and heuristic methods. Using adaptive models in forecasting (Winters and Holt exponential smoothing models). Econometric prediction. Forecasting economic and social phenomena using univariate time series models. Selected simulation methods for forecasting models. Application of ANOVA in the forecasting process. Multi-equation models in the process of forecasting and simulation of economic and social phenomena. Application of artificial neural networks to the forecasting of socio-economic phenomena.	
Examination methods:		Test (written or computer based), Project	