SUBJECT:	**Quantitative Research and Analysis**		
HOURS:	18	ECTS:	3

Name/title of the author:	**Prof. UEK dr hab. Andrzej Sokołowski**
Course Description:	The aim of the course is to present basic ideas of mathematical statistics used in economic analysis. Statistical tests, regression analysis, multivariate analysis and basic forecasting models are presented.
Learning Outcomes (skills and knowledge):	At the end of the course students should know how to ask questions which can be addressed by statistical methods, how to prepare the data set and how to choose the proper method of the analysis. They should acquire the basic knowledge of *STATISTICA* software. All methods presented are illustrated with real data and problems are solved with *STATISTICA*. Students will know how to interpret the results of statistical methods.
Course Content:	Objects and variables. Measurement scales. Population and sample. Basics of probability theory. Random variables and selected distributions. Population parameters. Estimation theory. Point and interval estimation. Testing hypothesis. Comparing groups (dependent and independent samples; tests for two groups and ANOVA). The analysis of relations between variables (chi-square test for independence, product-moment correlation coefficient, rank correlation). Multiple regression. Ordering of multidimensional objects. Cluster analysis. Factor analysis and PCA. Identification methods (logistic regression, discriminant analysis, classification trees). Trend analysis. Exponential smoothing. ARIMA modelling
Methods of Instruction:	Lecture. Computer lab. Presentations. Problem solving.
Assessment policy (examination):	Attendance 10%, Project 40%, Examination Quiz 50%.
References:	Lind D.A., Marchal W.G., Wathen S.A., *Basic Statistics for Business & Economics*, McGraw-Hill Irwin, Fourth edition, 2003 Aczel A.D., *Complete Business Statistics*, McGraw-Hill Irwin, Fifth Edition 2002