

## Specification of the course for the Book of courses

<b>Study program</b>		Applied statistics		
<b>Title of the course</b>		<b>Regression analysis</b>		
<b>Teachers (for lectures)</b>		Aleksandar Nastić		
<b>Teacher/fellow teacher (for exercises)</b>		Miodrag Đorđević		
<b>ESPB</b>	6	<b>Status of the course (obligatory (O) /elective (E))</b>		0
<b>Conditions</b>				
<b>Aim of the course</b>	The course aims to familiarize students with the basic concepts and techniques in using regression models in scientific research. They should be enabled to perform analysis of their own data, and to interpret and publish the results. They should also understand the basic potentials in using regression models and get some inspiration for a more effective use of regression analysis of real data.			
<b>Course outcomes</b>	On completion of this course successful students will be able to understand the objectives of regression analysis and understand the role of the predictor and the response variables in regression relation. The students should also be able to define the simple and the multiple linear regression models and understand the basic idea and the assumptions of the least squares method. They will be able to estimate the coefficients of the model using the least squares method, to make statistical inferences about the model and interpret the results, to forecast future observations of the response variable, to employ the model diagnostics for both simple and multiple linear regression models and finally to use computer statistical packages to perform the calculations required in regression analysis.			
<b>Content of the course</b>				
<b>Theoretical classes</b>	Simple linear regression, the method of least squares, multiple linear regression models, model building, diagnostics and model selection, residual analysis, polynomial regression, introduction to time series modeling and forecasting, introduction to a multivariate regression analysis,			
<b>Practical classes</b>	Tasks and problems are solved, the practical lessons follow the content of teaching, ie. theoretical instruction. Using statistical software for regression analysis.			
<b>References</b>				
1	William Mendenhall, Terry Sincich: A Second Course in Statistics: Regression Analysis, Pearson Education Prentice Hall; 6th edition, 2003.			
2	Michael Patrick Allen: Understanding Regression Analysis, Plenum Press, New York, 1997			
3	Benjamin Kedem, Konstantinos Fokianos: Regression Models for Time Series Analysis, John Wiley & Sons, 2002.			
<b>The number of contact hours per week during the semester / trimester / year</b>				
<b>Lectures</b>	<b>Exercises</b>	<b>DON</b>	<b>Research work</b>	<b>Other classes</b>
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<b>Teaching methods</b>	Lectures, exercises, writing the statistical reports			
<b>Evaluation of knowledge (maximum score 100)</b>				
<b>Pre exam duties</b>		<b>points</b>	<b>Final exam</b>	<b>points</b>
<b>Activity during lectures</b>		5	<b>Oral exam</b>	40
<b>Activity during exercises</b>		5		
<b>colloquia</b>		30		
<b>seminars</b>		20		