

## Information sheet for the course Experimental methods and results processing

<b>University:</b> <i>Alexander Dubček University of Trenčín</i>					
<b>Faculty:</b> <i>Faculty of special technology</i>					
<b>Course unit code:</b> <i>STaM/1-12/d</i>			<b>Course unit title:</b> <i>Experimental methods and results processing</i>		
<b>Type of course unit:</b> <i>optional</i>					
<b>Planned types, learning activities and teaching methods:</b> <i>Lecture 2 hours per week, daily attendance method</i>					
<b>Number of credits:</b> <i>5</i>					
<b>Recommended semester:</b> <i>1<sup>st</sup> semester in the 1<sup>st</sup> year</i>					
<b>Degree of study:</b> <i>3rd degree</i>					
<b>Course prerequisites:</b> <i>none</i>					
<b>Assessment methods:</b> <i>The final evaluation: test in the form of a written test, with the emphasis on the theoretical knowledge of the subject and the oral part of the answer. The final evaluation-accreditation: of a total of 30 points is necessary to obtain the required number of points for the degree classification: (E)-20 points, (D)-22 points, (C)-24 points, (B) — 26 points, (A)-28 points.</i>					
<b>Learning outcomes of the course unit:</b> <i>Learning outcomes: the student will acquire a coherent and comprehensive overview of the issues of experimental methods and special testing and mobile technology. Students create the preconditions for the practical implementation of experiments and testing habits in special techniques and practice. Planning, preparation, execution, evaluation and report on the results of experimental work on the basis of current scientific knowledge and methods.</i>					
<b>Course contents:</b> <i>Experimental research. Measurement of non-principles, methods. AD and DA converters. Automating the collection and evaluation of data and measurement. Planning and analysis of the experiment focused on the basic goal. Factorial analysis. Analysis and evaluation of the effects of random and systematic errors in the data, dimensional analysis, classification and evaluation of data according to the quantitative importance. Regression and approximation of the measured data, deterministic and Stochastic methods, Gaussian, Fourier and spectral analysis methods.</i>					
<b>Recommended of required reading:</b> <i>BORŠČ, M., HURTA, F., VITKO, A.: Systémy automatického riadenia. Trenčianska univerzita A. Dubčeka v Trenčíne, 2001.</i> <i>BALÁTĚ, J.: Automatické řízení. BEN Praha, 2004, ISBN 80-7300-148-9.</i> <i>HANOUSEK, J. - CHARAZMA, P.: Moderní metody zpracování dat. EDICE '99, 1999.</i> <i>GIESBRECHT, F. - MARCIA, F.: Planning, construction and statistical analysis of designated experiments. John Wiley and sons. London, 2003.</i> <i>DOEBELIN, E. O.: Engineering experimentation planing, execution, reporting. Mc Graw - Hill Book Company, New York - London, 2003.</i>					
<b>Language:</b> <i>Slovak</i>					
<b>Remarks:</b> <i>The subject is provided in the summer semester in the 1st year of full-time study. The subject is obligatory elective.</i>					
<b>Evalutaion history:</b> <i>Total number of students being evaluated: 12</i>					
A	B	C	D	E	FX
50,0	25,0	25,0	0	0	0

**Lecturers:** *Assoc.Prof. Ing. Peter Lipták, CSc. lecturer*

**Last modification:** *15.4.2014*

**Supervisor:** *prof. Ing. Vojtěch Hrubý, CSc., guarantee of the study program “Technologies and Materials in Mechanical Engineering“, Assoc. prof. Ing. Ondrej Híreš, CSc., Assoc. prof. Ing. Viliam Cibulka, CSc. – together-guarantors.*