

## Information sheet for the course Technical Cybernetics

<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>ŠST/B/1-84/d</i>			<b>Course unit title:</b> <i>Technical Cybernetics</i>		
<b>Type of course unit:</b> <i>compulsory</i>					
<b>Planned types, learning activities and teaching methods:</b> <i>1 hours of lectures per week, 1 hour of practice per week and one hour of laboratory exercises</i>					
<b>Number of credits:</b> 2					
<b>Recommended semester:</b> <i>6<sup>th</sup> semester in the 3<sup>rd</sup> year of study /full-time / 6<sup>th</sup> semester in the 3<sup>rd</sup> year of study /part-time /</i>					
<b>Degree of study:</b> <i>I.</i>					
<b>Course prerequisites:</b> <i>ŠST/B/4-02/d Mathematics II, ŠST/B/1-22/d Applied Informatics</i>					
<b>Assessment methods:</b> <i>100% participation in laboratory exercises, meet the objectives and terms of the exercises, at least 80% attendance at lectures, properly prepared work and demonstrate the knowledge of the contents of the semestral object in a written and oral examination. Final evaluation: Semestral work in the form of a written test, with the emphasis on the theoretical credits + knowledge of the parts of the subject and the oral reply, where he will examine the application of theoretical knowledge in order to obtain an image transfer and application using Matlab-Simulink. Out of the 20 points, it is required to obtain for evaluation: (E)-13 points, (D), (C)-16 points-15 points (B) and 17 points, (A) - 18 points.</i>					
<b>Learning outcomes of the course unit:</b> <i>The student has a cross-cutting knowledge of the department with a focus on application usage at the level corresponding to the current state of knowledge, this is the cybernetic system and its structure, familiar with elements of cyber systems to handle strings, and investigate their qualities, identify cyber-construct, modeling, and simulation systems.</i>					
<b>Course contents:</b> <i>Technical Cybernetics and automation of technical systems, in particular as a basis in the industry. Management system and its structure. Dynamic system, transfer functions and their basic characteristics. Identification of regulatory systems and automatic control example. Logical management systems. The technical means for information processing and automation. Discrete control. Static and dynamic optimization. Adaptive systems. Programme management and robotics.</i>					
<b>Recommended reading:</b> <i>BORŠČ, M., HURTA, F., VITKO, A.: Systémy automatického riadenia. TnUAD v Trenčíne, 2001. FEJERČÁK, V., LÍŠKA, O., HIPÍK, L.: Základy technickej kybernetiky. Návody na cvičenia. ES VŠT, Košice 1989. ATP journal ročník 2004/2005.</i>					
<b>Language:</b> <i>Slovak</i>					
<b>Remarks:</b> <i>The subject is provided in the summer semester of the third year of full-time study. Subject is required.</i>					
<b>Evaluation:</b> <i>Total number of students being evaluated 167 divided by notes</i>					
A	B	C	D	E	FX
45,51	11,38	13,77	17,96	11,38	0,0
<b>Lecturers:</b> <i>doc. Ing. Peter Lipták, CSc. lecturer Ing. Milan Jus, PhD. - instructor</i>					
<b>Last modification:</b> <i>15.4.2014</i>					
<b>Supervisor:</b> <i>prof. Ing. Jiří Balla, CSc., guarantee of the study program Special Mechanical Engineering Technology</i>					