Information sheet for the course
Modeling and Simulation

University: *Alexander Dubček University of Trenčín*	
Faculty: *Faculty of special technology*	
Course unit code: *ŠST/I/2-21/d*	**Course unit title:** *Modeling and Simulation*
Type of course unit: *compulsory*	
Planned types, learning activities and teaching methods: *2 hours of lectures per week, 2 hours of laboratory exercises per week face to face*	
Number of credits: *4*	
Recommended semester: *3rd semester in the 2nd year (full-time)* *3rd semester in the 2nd year (part-time)*	
Degree of study: *II. (engineer)*	
Course prerequisites: *none*	
Assessment methods: *Continuous check 2 times during the semester. 100% participation in laboratory exercises, min. 80% attendance at lectures, meet the objectives of the laboratory exercises, correct preparation laboratory and individual works, demonstrate knowledge of subject content in written and oral examination.*	
Learning outcomes of the course unit: *The student can analyze factual knowledge and principles of discrete simulation, to be able to create and apply simulation models in a general programming language Matlab and simulation using WITNESS product.*	
Course contents: *Algorithms in MATLAB. WITNESS simulation product. Applications of knowledge of probability and statistics. Generate random numbers and transformation of random variables each division. The basic elements of simulation models. Principles of simulation languages. The methods of the time step. Basic algorithms and development of the simulation model. Methods for monitoring effectiveness. Verification of the accuracy and truthfulness of simulation models. The simulation experiment and methods of evaluation. Queuing systems. Processing simulation model and implementation of the simulation experiment.*	

Recommended of required reading:

CHOVANEC, A.: Modelovanie a simulácia diskrétnych stochastických procesov. [Vysokoškolská učebnica]. Trenčín: Trenčianska univerzita Alexandra Dubčeka v Trenčíne v spolupráci s vydavateľstvom GERŠI, 2004. 125 s. ISBN 80-8075-009

CHOVANEC, A.: Simulation Modelling of Processes of Special Technology Dependability Support. Alexander Dubček University in Trenčín, Linguistic review by IVEPO Agency Žilina. Trenčín 2006. 100s. ISBN 80-8075-146-3

NEUSCHL, Š. a kol. : Modelovanie a simulácie. Alfa, Bratislava 1988

PITEL, J. a kol. : Ekonomicko-matematické metódy. Príroda, Bratislava 1988

Language: *Slovak*	
Remarks: *Compulsory course*	

Evaluation history:

Total number of students being evaluated:

A	B	C	D	E	FX
0	0	0	0	0	0

Lecturers: *prof. Ing. Alexej Chovanec, CSc.* *Ing. Lukáš Bridik, PhD.*	
Last modification: *15.4.2014*	
Supervisor: *prof. Ing. Jiří Balla, CSc., guarantee of the study program "Special Mechanical Engineering Technology".*	