

Information sheet for the course Basic system engineering

University: <i>Alexander Dubček University of Trenčín</i>	
Faculty: <i>VILA – Joint Glass Centre</i>	
Course unit code: <i>ZSI</i>	Course unit title: <i>Basic system engineering</i>
Type of course unit: <i>compulsory</i>	
Planned types, learning activities and teaching methods: <i>Lecture: 2 hours weekly; face to face</i> <i>Seminar: 1 hour weekly</i>	
Number of credits: <i>5</i>	
Recommended semester: <i>3. semester</i>	
Degree of study: <i>II. (engineer, magister)</i>	
Course prerequisites: <i>none</i>	
Assesment methods: <i>Final written exam, theoretical part – 50 points, two examples – 25 points each</i> <i>Requirement – 20 points for one example</i>	
Learning outcomes of the course unit: <i>Student has basic knowledge of system engineering where processed units are whole systems. Student has knowledge of a model and a topology of manufacturing process and of the transition from the model to balance mass and energetic calculations. Student has knowledge of means of process identification, of process optimization and steadiness of chemical manufacturing processes.</i>	
Course contents: <ol style="list-style-type: none"> 1. <i>Term of model</i> 2. <i>Isomorphic and homomorphic assignment</i> 3. <i>Term of system</i> 4. <i>Topology of chemical manufacturing process</i> 5. <i>Chemical manufacturing process as a system</i> 6. <i>Modelling of equipment and operations</i> 7. <i>Modelling of equipment and operations - extension</i> 8. <i>Balance calculations from defined data</i> 9. <i>Measurement and processing of data during identification of process</i> 10. <i>Energetic aspects of chemical manufacturing processes</i> 11. <i>Optimization of chemical manufacturing processes</i> 12. <i>Optimization of chemical manufacturing processes</i> 13. <i>Steadiness of chemical manufacturing process</i> 	

Recommended of required reading:

Rajniak P., Václavek V.: Základy modelovania a systémového inžinierstva chemických výrobných procesov. Vydavateľstvo ALFA, Bratislava 1993. ISBN 80-05-00981-X
Oboňa J.: Systémy a systémová analýza v praxi, Vydavateľstvo ALFA, Bratislava 1990, ISBN 80-05-00104-5

Language: *Slovak***Remarks:****Evaluation history:**

A	B	C	D	E	FX

Lecturers:*doc. Ing. Peter Vrábel, PhD.***Last modification:** *31. 1. 2014***Supervisor:** *prof. Ing. Marek Liška, DrSc.*