

Information sheet for the course Failure Analysis and Prevention

University: <i>Alexander Dubček University of Trenčín</i>					
Faculty: <i>Faculty of Industrial Technologies in Púchov</i>					
Course unit code: <i>MT-P-37</i>			Course unit title: <i>Failure Analysis and Prevention</i>		
Type of course unit: <i>compulsory</i>					
Planned types, learning activities and teaching methods: <i>Lecture: 2 hours weekly/26 hours per semester of study; face to face</i> <i>Seminar: 2 hours weekly/26 hours per semester of study; face to face</i>					
Number of credits: <i>4</i>					
Recommended semester: <i>6th semester in the 3rd year full-time</i> <i>8th semester in the 4th year part-time</i>					
Degree of study: <i>the 1st degree of study (Bachelor's degree)</i>					
Course prerequisites: <i>MT-P-26 Utility properties and material selection</i>					
Assessment methods: <i>This subject briefly introduces the concepts of failure analysis, root-cause analysis, and the role of failure analysis as a general engineering tool for enhancing product quality and failure prevention. The major steps of students will be to describe the current situation, analyze the problem to identify the causes, develop corrective actions and validate and verify corrective actions.</i> <i>Three written solutions of students will be assessed by maximal points at 5 as following:</i> <i>A – from 14 to 15 points,</i> <i>B – from 12 to 13 points,</i> <i>C – from 10 to 11 points,</i> <i>D – from 8 to 9 points,</i> <i>E – from 6 to 7 points.</i>					
Learning outcomes of the course unit: <i>Student has systematic and complex knowledges, knows relations between particular technological fields, uses base theories, methods and procedures used in the field. Student can analyse and assess problem, can propose solutions to prevent possible failures.</i>					
Course contents: <i>Introduction to failure analysis and prevention</i> <i>Materials selection for failure prevention</i> <i>Design review for failure analysis</i> <i>Failures related to metalworking, welding, casting and heat treatment.</i> <i>Tools and technique in failure analyses</i> <i>Failures by creep mechanisms</i> <i>Examples of failures</i>					
Recommended of required reading: <i>ASM Metals Handbook: Failure analysis and Prevention, 2002, Vol. 11. ISBN: 0-87170-704-7</i>					
Language: <i>Slovak</i>					
Remarks:					
Evaluation history:					
A	B	C	D	E	FX
Lecturers: <i>doc. Ing. Marta Kianicová, PhD., doc. RNDr. Ján Bezečný, CSc.</i>					
Last modification: <i>31.03.2014</i>					
Supervisor: <i>doc. Ing. Marta Kianicová, PhD.</i>					