

**Information sheet for the course
Special articles V - Forming non-ferrous materials**

University: <i>Alexander Dubček University of Trenčín</i>	
Faculty: <i>Faculty of special technology</i>	
Course unit code: <i>STaM/D/3-37/d</i>	Course unit title: <i>Special articles V - Forming non-ferrous materials</i>
Type of course unit: <i>optional</i>	
Planned types, learning activities and teaching methods: <i>Lectures 2 hours per week</i>	
Number of credits: <i>5</i>	
Recommended semester: <i>3rd semester in the 2nd year</i>	
Degree of study: <i>III.</i>	
Course prerequisites: <i>none</i>	
Assessment methods: <i>The test consists of a written test and an oral preparation in the range of curriculum subject.</i>	
Learning outcomes of the course unit: <i>Subject as doctoral comprehensive and cross the knowledge of vytvarka - components produced by forming non-ferrous metals and demonstrates that non-ferrous metals are among the materials with excellent prospects for use, despite the fact that their price is higher than that of ferrous metals. The processing methods of non-ferrous metals forming widened in the second half of the 20th century with the development of material engineering, electrical engineering, mechatronics and technological disciplines and methods. Forming can handle blanks with relatively small waste eg. compared to machining. Further, this method allows the production component to virtually finished Methods of forming non-ferrous materials are on an upward trend especially in the electrical and electronics industry and are also indispensable in the special equipment, for example. in the manufacture of cartridges, bullets and semi-finished alloy.</i>	
Course contents: <i>The course extends the knowledge of the non-ferrous metals and alloys that are directly processed by hot forming or cold. Or in the form of carbides or oxides of non-ferrous metals to composite materials or the materials used in powder metallurgy. In addition, some non-ferrous metal materials used in the manufacture of structural units (titanium alloy) or vysokotvrdých inserts for cutting tools, possibly in the form of sheets, profiles and other semi-finished products in the construction of aircraft, space technology and modern means of transport. Progressive development of the production of non-ferrous metal parts at the expense of iron alloys require advanced product requirements especially in the automotive, aerospace and industry for a special technique.</i>	
Recommended of required reading: [1] DILLINGER, J. a kol.: <i>Moderní strojírenství pro školu i praxi, EUROPA – SOBOTÁLES.cz, Praha 2007, 608 s.</i> [2] STANČEK, L.: <i>Technológia zlievarenstva, Strojnícka fakulta, ES STU Bratislava, 2008.</i> [3] PERNIS, R.: <i>Teória tvárnenia kovov, Trenčianska univerzita AD v Trenčíne, 2007.</i> [4] ROUČKA, J.: <i>Metallurgie neželedných slitin, akademické nakladatelství CERM, s.r.o Brno, 2004.</i> [5] LIPA, Z. a kol.: <i>Priemyselné technológie a výrobné zariadenia, MTF Trnava, ES STU Bratislava, 2003.</i> [6] ČECH, J. a kol.: <i>Strojírenská metrologie, Akademické nakladatelství CERM, s.r.o. Brno, 2005.</i> [7] BLAŠČÍK, F. a kol.: <i>Technológia tvárnenia, zlievarenstva a zvarovania, ALFA, 1988</i>	

[8] PERNIS, R.: *Teória a technológia výroby kalíškov*, Trenčianska univerzita AD v Trenčíne, 2009.

Language: *Slovak*

Remarks:

Evaluation history

Total number of students being evaluated:

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

Lecturers: *Assoc. prof. Ing. Harold Mäsiar, CSc.*

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.*