

Information sheet for the course Construction of special mobile technology I

University: <i>Alexander Dubček University of Trenčín</i>	
Faculty: <i>Faculty of special technology</i>	
Course unit code: <i>ŠST/I/1-66/d</i>	Course unit title: <i>Construction of special mobile technology I</i>
Type of course unit: <i>compulsory</i>	
Planned types, learning activities and teaching methods: <i>Lectures 2 hours per week / laboratory exercises 2 hours per week, semester work 16 hours per semester face to face</i>	
Number of credits: <i>5</i>	
Recommended semester: <i>2st semester in the 1st year (full-time) 3st semester in the 2st year (part-time)</i>	
Degree of study: <i>II. (engineer)</i>	
Course prerequisites: <i>ŠST/I/1-63/e Mobile Technology</i>	
Assessment methods: <i>100% participation in laboratory exercises, the attainment of goals laboratory exercises, min. 60% attendance at lectures, properly Term paper, demonstrates knowledge of subject content in written and oral examination.</i>	
Learning outcomes of the course unit: <i>A student has a deep knowledge and cross to give a comprehensive overview of the special design of wheeled mobile technology, its conceptual patterns, movement, methods of management direction, braking, suspension, throughput and protection of special wheeled mobile technology. Learn computational approaches and trends in the development and the resulting requirements for the design and manufacture of special wheeled mobile technology.</i>	
Course contents: <i>Definitions, requirements, distribution and main part of the wheel of a special mobile equipment. The requirements for mobility, functionality, protection and security service special wheeled mobile technology. Special requirements for special mobile equipment. Movement special mobile wheeled equipment - equations of motion. Determination of the required performance powerplant analysis and dynamic tensile properties - traction calculations, dynamic characteristics of mobile wheeled equipment. Structural arrangements, requirements and principles of driveline special mobile wheeled vehicles and their evaluation. Characteristics power units, starting clutch, torque converter, mechanical, semi-automatic and automatic conversion powertrain components, shafts, differentials and transfer case, wheel adapters. Purpose, distribution and main chassis of wheeled vehicles, the suspension and axles. Systems and mechanisms axle suspension and the suspension. With local regulations and ECE for the construction of the management, design configuration management mechanisms, power steering. Purpose and process of braking wheel vehicle brake distribution system according to STN, main parts, principles of operation, control of braking and braking, the ABS electronic control. Electronic assistance systems in the design of wheeled mobile technology. Patency, analysis capability of overcoming terrain and water barriers special wheeled mobile technology. Ballistic protection, protection against mines, improvised explosive devices, protection of special techniques in the visible and infrared. Valuation of wheeled mobile technology. Computational approaches to selected elements, nodes and mechanism of wheeled mobile technology. Trends in the construction of wheeled mobile special equipment.</i>	
Recommended of required reading: <i>VALA, M., Ferencey, V.: Konštrukcia špeciálnej mobilnej techniky. Mechanika pohybu kolesových vozidiel. CDROM, ISBN 978 80 8075 427 3, s. 190, TnU Trenčín 2010. DROPPA, P., et. al.: Kolesová technika. Konštrukcia a popis. - 1. vyd. - Liptovský Mikuláš. Akadémia ozbrojených síl gen. M. R. Štefánika, Liptovský Mikuláš 2007. - 257 s. ISBN 978-80-8040-333-1.</i>	

DROPPA, P. - ŠTIAVNICKÝ, M.: *Modeling of kinematic and strength relations in mobile technics.* - 1. vyd. Liptovský Mikuláš: *Armed Forces Academy of General Milan Rastislav Štefánik*, 2012. - 126 s. - ISBN 978-80-8040-455-0.

SLOBODA, A.- FERENČEY, V.- HLAVŇA, V.- TKÁČ, Z.: *Konštrukcia kolesových a pásových vozidiel. [učebnica]* - 1.vyd. TU Košice. , Sjf TU Košice, 2008. - 558 s. ISBN 978-80-89232-28-4.

DROPPA, P.: *Usporiadanie a popis vozidla Aligátor 4 x 4 PVS: učebná pomôcka.* - 1. vyd. - Liptovský Mikuláš *Akadémia ozbrojených síl gen. M. R. Štefánika*, Liptovský Mikuláš 2005. - 47 s. - ISBN 80-8040-265-5.

ELIÁŠ, J.: *Energetické stroje v mobilnej technike.*-1.vyd. -Trenčín: TnUAD, 2011.-224 s. ISBN 978-80-8075-507-2

Eliáš, J.: *Mobilná technika na kolesových podvozkoch [skriptá]: charakteristiky, technické údaje a popis/.* - 1.vyd. - Trenčín: TnU AD, 2002. - 338 s. - ISBN 80-88914-62-0.

Language: *Slovak*

Remarks:

Subject is required.

Evaluation history:

Total number of students being evaluated:

A	B	C	D	E	FX
1,03	11,63	16,28	27,91	41,86	1,30

Lecturers: *Assoc.prof. Ing. Peter Droppa, PhD. - lecturer*
Ing. Štefan Timár. - instructor

Last modification: *15.4.2014*

Supervisor: *prof. Ing. Jiří Balla, CSc., guarantee of the study program "Special Mechanical Engineering Technology".*