Information sheet for the course
Selected Chapters from Experimental Modal Analysis

University: *Alexander Dubček University of Trenčín*

Faculty: *Faculty of Industrial Technologies in Púchov*

Course unit code: *MI-I-PV-48*

Course unit title: *Selected Chapters from Experimental Modal Analysis*

Type of course unit: *optional*

Planned types, learning activities and teaching methods:

Teaching method:

- *face to face method.*

This subject represents one of the subjects relating to the final state exam.

Number of credits: *2*

Recommended semester:

the 4th semester in the 2nd year of the full-time form of study,
the 6th semester in the 3rd year of the part-time form of study.

Degree of study: *the 2nd degree of study (Engineering degree)*

Course prerequisites:

accomplishment of all compulsory as well as optional subjects with the reference to the given study programme and the study field involving MI-I-PV-23F (Experimental Modal Analysis).

Assessment methods:

Student is obliged to be present at the lessons with the reference to specifications introduced in the study rules for the given study programme. He/she is also obliged to solve all predetermined tasks leading to successful accomplishment of the given subject because this subject is one of the other subjects which are closely connected with successful accomplishment of the final state exam.

Learning outcomes of the course unit:

Student is able to solve the specific tasks using basic or fundamental principles relating to knowledge on the natural or forced vibration of solid body systems and moreover, student can measure or determine the vibrations by help of Pulse 11 equipment. Furthermore, student increases his/her chance to accomplish the final state exam after.

Course contents:

- *analytical mechanics*
- *natural and forced vibrations of solid body with 1 degree of freedom*
- *natural and forced vibrations of solid body with "n" degrees of freedom*
- *natural and forced vibrations of 1-D continuum – longitudinal, torsional and bend vibrations of the beam system*
- *natural and forced vibrations of 2-D continuum – flat plate*
- *basic principles relating to theory of vibrations for non-linear system with one degree of freedom*
- *Pulse 11 – measurement system*
- *Pulse – control system*

Recommended or required literature:

Trebuňa F., Šimčák F.: Príručka experimentálnej mechaniky, TU Košice, 2007, ISBN 970-80-8073-816-7.
Starek L.: Vyššia dynamika, SVŠT Bratislava, 1985.
Harrison, H.R. – Nettleton, T.: Advanced Engineering Dynamics, John Wiley, London, 1997.
Brdička, M. – Hladík, A: Teoretická mechanika, Academia, Praha, 1987.

Language: *Slovak*

Remarks: —

Evaluation history: /Grading system/

A	B	C	D	E	FX

Excellent	*Laudable*	*Good*	*Accepted results*	*Pass*	*Fail*
Lecturers: *prof. Ing. Ján Vavro, PhD.*					
Last modification: *31.03.2014*					
Supervisor: prof. *Ing. Darina Ondrušová, PhD.*					