Information sheet for the course
Seminar Physics I

University: *Alexander Dubček University of Trenčín*

Faculty: *Faculty of Industrial Technologies in Púchov*

Course unit code: *MT-PV-4* | **Course unit title:** *Seminar Physics I*

Type of course unit: *compulsory*

Planned types, learning activities and teaching methods:
Seminar: 2 hour weekly/26 hours per semester of study; face to face

Number of credits: *2*

Recommended semester: *2nd semester in the 1st year full-time*
2nd semester in the 1st year part-time

Degree of study: *the 1st degree of study (Bachelor's degree)*

Course prerequisites: *MT-P-1Mathematics, MT-P-9 Physics I*

Assessment methods:
Active participation on each seminar. Positive knowledge rating of seminar work – minimaly 25 points from 50.

Learning outcomes of the course unit:
Students have deeper knowledge of classical and modern physics and ability to use mathematics to solve physics problems, critical thinking skills, effective written and oral communications skills.

Course contents:
Physical quantities, symbols and units, SI system of units, vectors quantities, vector calculus.
Mass point, navigation system, inertial navigation system, location, path and trajectory.
Differential calculus, integral calculus, instantaneous and average velocity of mass point.
Instantaneous and average acceleration of mass point, classification of motions, relativity of motion.
Energy and power.
Mass-point dynamics, newton's laws of motion.
Gravitation field, gravitational field intensity and potential, kepler's laws.
Planetary motion.
Mass-points system, centre of mass system, movement impulse of force.
Conservation laws, conditions of solids equlibrium.
Rotation of solids.
Special theory of relativity
Seminar work defence.

Recommended of required reading:
Feynman, R.: Feynmanovy přednášky z fyziky s řešenými příklady 1/3, Fragment, Bratislava, 2007
Veis, Š.: Všeobecná fyzika I, Alfa, Bratislava-Praha, 1986.
Krempaský, J.: Fyzika, Alfa, Bratislava, 1982.

Language: *Slovak*

Remarks:

Evaluation history:

A	B	C	D	E	FX

Lecturers: *doc. Mgr. Ivan Kopal, Ph.D.*

Last modification: *31.03.2014*
Supervisor: *doc. Ing. Marta Kianicová, PhD.*