UNIVERSITY OF PANNONIA

SUBJECT DATASHEET

Semester:	2010/11/2
Subject:	Basic Mechanical Engineering Studies
Code:	VEMKGEB211K
Responsible department:	Department of Mechanical Engineering
Responsible department code:	MKGE
Responsible lecturer:	Dr. Sándor Verdes

Educational objectives:

The students getting acquainted to the most important general machine-parts. This subject deals further with materials of engineering and testing of materials included the basic calculations of static and strength problems

Detailed content of the subject:

The drawings presentation and designation system of screw threads. Different kind of threads, screws, nuts, bolts, washers, screw-locking. Some further elements of releasable joints (srews and mother screws…etc.). Non releasable joints (rivets, welding joints, soldering). Symbols for welding. Most important element of pipelines. Graphical symbols of pipeline systems (pipe connections, armatures). Axles and shafts. Classification according to the shape and stress of the shafts. Some types of solid, flexible, and clutch couplings. Rolling and ball bearings, sliding bearings, oiling and greasing. Different kinds of gearings (belt-, friction-, chain- drive). Materials of the engineering. Basic terms of metallurgy. Steels, cast-iron, iron-carbon alloys. Heating treatments. Testing of materials. Different types of loads and stresses at machine parts. Tensile test, hardness test, impact test. Basic calculations for static and strength problems. 12. Basic knowledge relating to construction and operation of mechanical machineries. Types of energy. Sources of energy. Summing up of definitions of the physical quantities (mass, energy, work, power). 13. Test paper. 14. Characteristics of machines operating with constant and variable velocity. Friction and rolling resistance, pivot friction. Distribution of energy in space and time. Efficiency. Terms and definitions. Overall and average efficiency. Efficiency at changing load. Specific quantities relating to fuel consumption. 15. Static characteristic curves of different machines. Adjustment of the mechanical power supplies for linked up machines and engines. Co-operation of linked up engines and machineries (engine, transmission-machine). Favorable working point point. Stability of linked up machineries operation.

Requirements:

The Student must take part on more than 80 % of the Lessons. During the semester will be 1 test on the 8-th week.

Required and suggested references:

Pattaantyús A. Géza: A gépek üzentana Déri J. Géprendszertan Dr. Szalczinger J.: Gépelemek, VE69/2002.

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