



COURSE DATASHEET

Semester:	2015/16/1
Course:	General Mechanical Engineering
Code:	VEMKGEB142G
Responsible department:	Institute of Mechanical Engineering
Department code:	MKGEI
Responsible instructor:	Dr. Sándor Verdes

Course objectives:

The students getting acquainted to the history of engineering and the most important machine structures. This subject deals further with the basic calculations of static and strength problems.

Course content:

Introduction. Engineer mentality and models. History of the engineering. Basic calculations of static and strengths problems. Basic knowledge relating to the constructions and operation of the mechanical machinery. Subject and purpose of this part of curriculum. Concept and principle of machineries. Constructional and operating essence of machineries. Types of energy. Energy resources. Summing up of definitions of some physical quantities (mass, energy, work, power). Physical quantities, of kinematics and dynamics. Laws of motions. Diagrams of motion's equations. Characteristics of machines operating with uniform and variable velocity. Skin friction and rolling resistance, pivot friction. Laws of the conservations. (mass, energy) and its significance. Equations for energy balance. Energy balance of non-streaming medium; Example for practice. The controlled mass. Energy-balance and equation of fluid flow medium. The controlled volume Distribution of energy in space and time. Efficiency. Terms and definitions. Overall and average efficiency. Efficiency at changing load. Specific index of the fuel and energy consumption. Economical operating of machines. Curves of kinematics and dynamics characteristics for machines operating with variable velocity. Irregular working of machineries. Static characteristic curves of different machines. Mechanical power adjustment of linked up machines and engines. Co-operation of linked up machineries (engine-transmission-machine) Working/Operation point. Stability of linked up machineries operation. Addition of static characteristic curves. Starting and controlling of machines.

Requirements, evaluation and grading:

The Student must take part on more than 80 % of the Lessons. During the semester will be 2 test on the 7-th and 13-th week of the semester.

Required and recommended readings:

Pattantyús Á. Géza A gépek üzemtana. Műszaki Kiadó, Budapest, 1983. Déri J.: Géprendszerteran. Tankönyvkiadó, Budapest, 1986.