



COURSE DATASHEET

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| Semester: | 2015/16/1 |
| Course: | Applied Mechanics I. |
| Code: | VEMKGEB112M |
| Responsible department: | Institute of Mechanical Engineering |
| Department code: | MKGEI |
| Responsible instructor: | dr. Imre Timár |

Course objectives:

To know the analytical and graphical methods of force. The unit aims to introduce some of the elementary concepts from the science of mechanics of solids and to show how they apply to the analysis of engineering structures.

Course content:

Fundamental definitions of statics. Polygon of forces, articulation, equilibrium of three. Method of Cullmann and Ritter. Rods of plane (basic concept, statical definite, strain diagrams. Continual distributed forces in plane. Strain diagrams of two support rod (concentrated force and distributed force). Relationship between the transverse force and the bending moment. Test Jointed rods, plane trusses. Friction and its use (peg and slope). Friction and its use (screw and axial lead). Friction of rope (ribbon-brake) and cylinder rolling on plane. Centre of gravity, centre of gravity of line and two-dimensional figure. Centre of gravity of bodies, geometric moments of inertia (Steiner's equation). Mohr circle, moment of inertia of two-dimensional figure.

Requirements, evaluation and grading:

Minimum pass mark from papers (30 %) and prepare two individual projects

Required and recommended readings:

Timár I.: Műszaki mechanika I. Statika. Veszprémi Egyetemi Kiadó, 1997. M. Csizmadia B., Nándori E.: Statika. Nemzeti Tankönyvkiadó, Bp., 1996.