



## SUBJECT DATASHEET

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|-------------------------------------|--------------------------------------|
| <b>Semester:</b>                    | 2009/10/2                            |
| <b>Subject:</b>                     | Applied Mechanics I.                 |
| <b>Code:</b>                        | VEMKGEB112M                          |
| <b>Responsible department:</b>      | Department of Mechanical Engineering |
| <b>Responsible department code:</b> | MKGE                                 |
| <b>Responsible lecturer:</b>        | dr. Imre Timár                       |

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### Educational 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.

### Detailed content of the subject:

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 led). 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:

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

### Required and suggested references:

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