



## COURSE DATASHEET

<b>Semester:</b>	2012/13/1
<b>Course:</b>	Technical Mechanics
<b>Code:</b>	VEMKGE2242M
<b>Responsible department:</b>	Department of Mechanical Engineering
<b>Department code:</b>	MKGE
<b>Responsible instructor:</b>	dr. Imre Timár

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### Course objectives:

The unit aims to introduce some of the elementary concepts from the science of mechanics and to show how they apply to the engineering structures.

### Course content:

Fundamental definitions of statics. Solution of examples. Equilibrium of three forces. Theorem of moment. Solution of examples. Polygon of forces, graphical methods in a plane. Solution of examples. Method of Cullmann and Ritter. Solution of examples. Rods of plane (basic concept, statical definite, strain diagrams). Solution of examples. Strain diagrams of two support rod (concentrated force and distributed force). Solution of examples. Relationship between the transverse force and the bending moment. Test. Centre of gravity of plane and bodies. Solution of examples. Geometric moments of inertia (Steiner's equation). Solution of examples. Basic idea of stress and strain. Tension, compression, shearing. Solution of examples. Bending. Solution of examples. Torsion (ring and annulus cross-section). Solution of examples. Stability of axially compressed rods. Solution of examples. Test. Solution of examples. More line complex stresses (theorems of Mohr and Huber-Mises-Hencky). Solution of examples.

### Requirements, evaluation and grading:

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

### Required and recommended readings:

Timár I.: Műszaki mechanika (Statika) Veszprém, 1997. Timár I.-Pálma R.: Műszaki mechanika példatár. Veszprém, 2006. Muttnyánszky Á.: Szilárdságtan, MK. Budapest, 1981.