

Name of subject: Technical mechanics	NEPTUN-code: RKXME1EBNE	Number of hours: lec+gs+lab 2+2+0	Credit: 5 Requirements: practice mark
Course coordinator: Lóránt Szabó PhD	Title: assistant lecturer	Prerequisite: -	
Curriculum			
<p>Our study of engineering mechanics can be divided into 4 main parts:</p> <ol style="list-style-type: none"> 1. Statics. Basic concepts, fundamentals. Planar forces, force systems. Moment of force about a given point and axis. Planar supports. Loads on beams. Centre of gravity. Friction. Free-body, shear force and bending moment diagrams for the beams. 2. Strength of Materials. Basic concepts, stress and stress states. Material Laws. Stress strain diagram. Simple strain of prismatic bars. Stress theories. Tensile, shear and torsion stresses. 3. Kinematics. The kinematics of a point. Basic concepts of kinematics. Uniform and uniformly changing motion. Projectile motions, circular motion, harmonic motion, swinging motion. Kinematics of rigid body. 4. Kinetics. Point kinetics. Newton's laws. Momentum, power, work. Energies (potential, kinetic). Work energy theorem. Oscillation motion. Simple pendulum. The kinetics of a rigid body. The moment of inertia, and general theorems and principles. The rotation of a rigid body around an axis. Translational and plane motion of a rigid body. 			
Competences to be mastered:			
<p>a) knowledge</p> <p>- Knowledge of general and specific mathematical and natural scientific principles, rules, relations, and procedures as required to pursue activities in the special field of product design.</p>			
Bibliography:			
1. Serway Jewett: Physics for Scientist and Engineers			
2. http://www.icivil-hu.com/Civil-team/2nd/Statics/Statics,%20R.C.%20Hibbeler,%2012th%20book.pdf			
3. https://www.youtube.com/watch?v=l_M2TImYe64			