

Technical engineering skills (20-50cr.):

Title of the course: Technical mechanics	NEPTUN-code: RKXME1EBNE	Weekly teaching hours: $l+cw+lb$ 2+2+0	Credit: 5 Exam type: tm
Course leader: Lóránt Szabó, Dr.	Position: senior lecturer	Required preliminary knowledge: There is no requirement	
Curriculum:			
<p>Engineering mechanics is the application of mechanics to solve problems involving common engineering elements. The goal of this Engineering Mechanics course is to expose students to problems in mechanics as applied to plausibly real-world scenarios. Dividing of Engineering mechanics. Physical quantities.</p> <p>Statics (part of dynamics). Basic concepts, fundamentals. Planar forces, force systems. Power system bound to tractrix action on the rigid body. Planar forces, force systems. Centre of gravity, bearing force. Holders and articulated mechanisms. Friction. Strength of Materials. Basic concepts, stress and stress states. Material Laws. Simple strain of prismatic bars. Stress theories.</p> <p>Kinematics. The kinematics of a point. Basic concepts, uniform and uniformly changing motion. Projectile motions, circular motion, harmonic motion, swinging motion. Kinematics of the rigid body. Basic concepts, velocity and acceleration states, elemental and finite motions. The kinematics of relative motions.</p> <p>Kinetics (part of dynamics). Kinetics of the material point, axioms, general theorems. The free, forced and relative motion of the material-point. 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.</p>			
Professional competencies:			
<p>Knowledge of general and specific mathematical, natural and social scientific principles, rules, relations, and procedures as required to pursue activities in the special field of environment protection.</p> <p>Adequate perseverance and endurance of monotony to perform practical operations.</p> <p>Open to professional cooperation with specialists related to their profession but involved in other areas.</p> <p>Efforts to improve knowledge by on-going self-education and continuously update their knowledge of the world.</p> <p>Responsible proclamation and representation of the value system of the engineering profession; openness to professionally well-founded critical remarks.</p>			
Literature:			
1. Serway Jewett: Physics for Scientist and Engineers			
2. (Statics) http://www.icivil-hu.com/Civilteam/2nd/Statics/Statics,%20R.C.%20Hibbeler,%2012th%20book.pdf			
3. (Dynamics) https://docs.google.com/file/d/0Bw8MfqmgWLS4V0NFR2dVUWpuYzg/edit			
Comment:			