

<b>Name of subject:</b> Machine elements	<b>NEPTUN-code:</b> RKEGS1ABNE	<b>Number of hours:</b> <i>lec+gs+lab</i> 1+2+0	<b>Credit:</b> 4 <b>Requirements:</b> practice mark
<b>Course coordinator:</b> Andrea Paukó PhD	<b>Title:</b> assistant lecturer	<b>Prerequisite:</b> Technical drawing and documentation	
<b>Course Description</b>			
<p>The course aims to introduce the most basic machine parts, giving insight to the engineering speciality. The subject deals with machine parts and machine structures used in up-to-date machines, their types, properties and design principles. Main topics:</p> <p>The concept of machine elements, groups and design principles</p> <ul style="list-style-type: none"> <li>– rotating machine parts, shaft joints,</li> <li>– mechanical drives: gear drives, worm gearing, chain drive, belt drive. Principle of friction transmission,</li> <li>– brakes: structure, function and design basics,</li> <li>– supporting shafts, bearings, basic concepts of tribology</li> <li>– storage elements: pipe lines and fittings, pipe joints, valve, gate valve, check valve. Flow losses of pipe networks, characteristic curves, reservoirs and seals.</li> </ul>			
<b>Competences to be mastered:</b>			
<p>a) knowledge</p> <ul style="list-style-type: none"> <li>- Knowledge of basic design principles and methods, as well as major production technology procedures and operating processes.</li> <li>- Knowledge of basic construction designs and their dimensioning basics.</li> </ul> <p><b>b) capabilities</b></p> <ul style="list-style-type: none"> <li>- Able to design the form and construction of relatively simple products by taking into account the limits of production technology, the costs expected, and impacts on the environment.</li> <li>- Able to interpret and characterize the structure and operation of the structural units and components of relatively simple technical systems, as well as the design and connection of the system components applied.</li> <li>- Able to explore the causes of failures and to select elimination operations.</li> </ul>			
<b>Bibliography:</b>			
1. Steven R. Schmid, Bernard J. Hamrock, Bo. O. Jacobson: Fundamentals of Machine Elements, ISBN 9781439891322			
2. Machine elements, handbook, <a href="http://www.gbi.bgk.uni-obuda.hu/oktatas/segedanyagok/gepelemek/Machine_Design_2/Machine%20Element.pdf">http://www.gbi.bgk.uni-obuda.hu/oktatas/segedanyagok/gepelemek/Machine_Design_2/Machine%20Element.pdf</a>			