

<b>Course title: Design of Production Equipments</b>	<b>Neptun code: GESGT414</b>
<b>Course coordinator: Dr. György Hegedűs, associate professor, PhD</b>	
type and number of lesson: <b>lecture</b> /seminar/practical lesson/consultation, <b>2</b> / week or semester	
method of accountability: <b>colloquium</b>	
curriculum location of the subject: <b>autumn</b>	
pre-study conditions:	
<b>The task and purpose of the subject:</b>	
Overview of mechanical and mathematical models necessary for the investigation of dynamic problems arising during the design of production equipment.	
<b>Course description:</b>	
Overview of the structural units of machine tools (bearings, slides, linear guides, spindles, etc.). Setting up strength and vibration models of complex structures composed of the above units, deriving equations of motion, systems of equations of motion, overview and application of solution methods. The discussed problem areas: rotating shafts with a constant cross-section, the occurrence of stress concentrations, rotating shafts exposed to cyclically alternating stress, the problem of a main spindle supported by rolling bearings at both ends, nonlinear vibrations of production equipment, dynamic problems.	
<b>Required literature:</b>	
<ol style="list-style-type: none"> <li>1. Harris and Piersol.: <i>Shock &amp; Vibration Handbook</i>, McGraw – Hill Book Co., Inc. 2002.</li> <li>2. W., Bottega: <i>Engineering vibrations</i>, Taylor and francis, 2009.</li> <li>3. Den Hartogh, J.P.: <i>Advanced strenght of materials</i>, Dover Publications, 1987.</li> </ol>	
<b>Recommended literature:</b>	
<ol style="list-style-type: none"> <li>1. B. C. Gegg, C. Steve Suh, and Albert: <i>Machine Tool Vibrations and Cutting Dynamics</i>. Springer New York, NY, 2011. doi: <a href="https://doi.org/10.1007/978-1-4419-9801-9">https://doi.org/10.1007/978-1-4419-9801-9</a>.</li> </ol>	