Course title: Theory of Elasticity	**Neptun code: GEMET402-a**
Course coordinator: László Péter Kiss, associate professor, PhD	
type and number of lesson: 2 lectures/ week	
method of accountability: colloquium	
curriculum location of the subject: autumn/spring	
pre-study conditions: -	
The task and purpose of the subject:	
The main objective of this course is to provide the students with an introduction to the theory of elasticity. Emphasis is placed on fundamental concepts, principles and methodologies and on how to apply them to solutions of engineering problems.	
Course description:	
Equations of linear elasticity in Cartesian and cylindrical coordinate systems. Boundary and initial conditions. Stress functions. Navier equation, Beltrami-Michell equation. Principle of virtual work and complementary virtual work. Betti's theorem. Two-dimensional issues: plane strain, generalized plane stress and axisymmetric problems. Cylindrical shells under internal and external pressure. Rotating shafts and disks.	
Required literature:	
1. T. M. Atanackovic, A. Guran: Theory of Elasticity for Scientists and Engineers, Birkhäuser Boston, MA, 2000. 2. R. W. Soutas-Little. Elasticity, Dover Publications, 2010.	
Recommended literature:	
1. A. I. Lurie, A. Belyaev: Theory of Elasticity, Springer, 2005 2. S. P. Timoshenko, J. N. Goodier: Theory of Elasticity, McGraw-Hill, New York, 1951.	