Course title: Finite Element Method	Neptun code: GEMET407-a
Course coordinator: Baksa Attila, PhD, associate professor	
type of lesson: ea. / szem. / gyak. / konz. és száma: 2	
method of accountability: (koll. / gyj. / egyéb[1]): colloquium	
curriculum location of the subject: (őszi/tavaszi félév): autumn /spring	
pre-study conditions *(ha vannak)*: -	
The task and purpose of the subject:	
The PhD Student learns about the mathematical background of finite element method and studies about several mechanical modeling questions.	
Course description:	
Obtaining approximate solutions for mathematical and/or mechanical models with some accuracy is one of the most important goal of presents engineers. The main topics are as follows: finite element method (FEM) historical background, local approximation, theory of elasticity with variational principles, equations, izoparametric elements in 2 and 3 dimensions, h- and p- extension finite elements, modeling some special mechanical problems. Introduction to use a finite element program (such as Abaqus) with examples for some models in statics and dynamics.	
Required literature:	

1. Bathe K.J.: Finite Element Procedures, Prentice Hall, New Jersey 07458, 1996.

2. Szabó B. and Babuska I.: Introduction to Finite Element Analysis, Formulation, Verification and Validation, John Wiley & Sons, Ltd, 2011.

Recommended literature:

1. Szabó B. Babuska I.: Finite Element Analysis, John Wiley & Sons Inc., New York, 1991.
2. Smith IM and Griffiths DV.: Programming the Finite Element Method, John Wiley & Sons, Ltd, 2004.