

Course title: Analysis of engineering structures I	Neptun code: GEVGT465-a
Course coordinator: Dr. Jármai, Károly, professor, DSc.	
type and number of lesson: 2 lectures/consultations/week	
method of accountability: practical mark	
curriculum location of the subject: autumn and spring	
pre-study conditions:	
The task and purpose of the subject:	
To introduce students to the basics of dimensioning engineering structures	
Course description:	
Strength calculation of riveted, bolted and bonded joints. Structural designs. Static and fatigue strength of welds. Joints of tensioned, compression bars, bent brackets. Possibilities of determining residual weld stresses by measurement and calculation. Joints of lattice girders. Frame nodes. Joints of thin-walled sections. Spot welded joints. Electron beam welded joints. Joints for aluminium structures, plastic structures. Combined bonded, bolted and welded joints	
Required literature:	
<ol style="list-style-type: none"> 1. Farkas, J., Jármai, K.: Optimum design of steel structures, Springer Verlag, Heidelberg, 2013. 2. Farkas, J., Jármai, K.: Design and optimization of Metal Structures, Horwood Kiadó, 2008. 3. Farkas, J., Jármai, K.: Economic Design of Metal Structures, Millpress Kiadó, 2003. 4. Farkas, J., Jármai, K.: Analysis and Optimum Design of Metal Structures, Balkema Kiadó, 1997 	
Recommended literature:	
<ol style="list-style-type: none"> 1. Tyler G. Hicks: Standard Handbook of Engineering Calculations, McGraw-Hill, 1125 p. https://www.mongroupsdney1.com/1.pdf 2. Introduction to Structural Steel Design, 46 p. https://www.lamar.edu/engineering/files/documents/civil/faculty/tohme/Steel%20Design.pdf 3. Prof. Dr. A. Varma: Design of Steel Structures, 38 p. https://www.egr.msu.edu/~harichan/classes/ce405/chap3.pdf 	