

Course title: Precision Machinings	Neptun code: GEGTT431-a
Course coordinator: Prof. Dr. habil. János Kundrák, professor emeritus	
type and number of lesson: 2 lecture / week	
method of accountability: colloquium	
curriculum location of the subject: autumn	
pre-study conditions: -	
The task and purpose of the subject:	
The aim of the course is to learn the basis of cutting, the general and characteristic cutting procedures of component production, and machining procedures of typical surfaces.	
Course description:	
Precision machining in extreme conditions (geometry, accuracy, surface quality, non-traditional materials, low chip cross-section area, high cutting speed). Machinability and cutting of special materials. The characteristics of the chip removal. Chip deformation, cutting forces, heat phenomena. Applied cutting tool materials. Requirements of tool design. Wear and tool life of cutting tools. Regeneration of cutting tools. Accuracy and surface quality of machined surfaces. Cutting of up to date and hardly machinable materials (high strength, heat- and corrosion-resistant materials, ceramics, non-ferrous metal alloys, fiber reinforced materials).	
Required literature:	
<ol style="list-style-type: none"> 1. David Dornfeld, Dae-Eun Lee: Precision Manufacturing, Springer, 2008, p775 2. Mark J. Jackson: Micro and Nanomanufacturing, Springer, 2007, p699 3. König, W.: Fertigungsverfahren Band 1. Drehen, Fresen, Bohren. VDI - Verlag GmbH, Düsseldorf, 1981. 4. Horváth, M. - Somló, I.: A forgácsoló megmunkálások optimalása és adaptív irányítása, Műszaki Kiadó, Budapest, 1979. 5. Pálmai, Z.: Fémek forgácsolhatósága, Műszaki Könyvkiadó, Budapest, 1980. 	
Recommended literature:	
<ol style="list-style-type: none"> 1. Milton C. Shaw: Metal Cutting Principles, Clarendon Press-Oxford, 1997. 2. Annals of the CIRP (1985-2000.). 3. Novikov, N. V. - Bondarev E. K. - Ginzburg B. I. et. al.: Sinteticheskie sverkhvjordye materialy, 1. 2. 3., Kiev, Naukova Dumka, 1986. 4. Bobrov, V. M.: Osnovy teorü reznija metallov, Mashinostroenie, Moskva, 1975. 	