

Course title: Non-traditional Machining Processes	Neptun code: GEGTT450-a
Course coordinator: Dr. Maros Zsolt, associate professor	
type and number of lesson: lecture 2/week	
method of accountability: colloquium	
curriculum location of the subject: autumn	
pre-study conditions: --	
The task and purpose of the subject:	
Providing a comprehensive knowledge on special, non-traditional machining processes for manufacturing parts from materials with advanced, special characteristics.	
Course description:	
Machining methods with high energy density, utilising different forms of energy. Mechanical, thermal, chemical and electro-chemical processes. Characteristics of beam machining. Applications and characteristics of ultrasonic machining and abrasive waterjet cutting. Electro discharge machining, methods and application, material of the tool, effect of technological parameters. Creating of laser beam, and its characteristics. Machining with laser. Term of plasma, plasma beam machining. Machining with electron and ion beam. Chemical and electro-chemical machining. Electro-chemical milling, polishing, deburring, and grinding. Characteristics of high speed machining. Requirements for the tool, machine-tool and control system- Ultraprecision and micro machining. Tool material. Hard turning and hard machining.	
Required literature:	
<ol style="list-style-type: none"> 1. Niebel-Draper-Wysk: Modern Manufacturing Process Engineering, Mc Graw-Hill Publishing Company 1989, p986. 2. T. Jagadeesha: Non-Traditional Machining Processes, I K International Publishing House, 2016, p268 	
Recommended literature:	
<ol style="list-style-type: none"> 3. Chryssolouris, G: Laser Machining, Springer Science Media New York, 1991, SBN 9781475740844, p274 4. M.P.Groover: Introduction to Manufacturing Processes, Wiley Edition, 2011, p720 	