

Óbuda University Bánki Donát Faculty of Mechanical and Safety Engineering			<i>Institute:</i> Institute of Material and Manufacturing Science			
Name of the subject: Manufacturing Engineering 2 BGXGTE3BNE / BAGGT23NED/C <i>Full time course Term: 2020/2021 I.</i>						Credit: 4
Programme: Mechatronic Eng BSc II English			Timetable:			Lec.: Mo. 13:30-15:10 Room 221. Sem: Mo. 15:20-17:00 Room 110.
Teacher responsible for the subject:		Mikó Balázs (PhD; ass. prof.)		Teachers:		Mikó Balázs (PhD; ass. prof.)
Prerequisites:		-				
Hours per week:		Lecture: 2	Practice.: 0	Labs: 2		Consultation:
Way of closing the semester:		Exam				
Curriculum						
<i>The aim of the subject is to present the basics of manufacturing and cutting technology, the positioning and fixtures and machine tools. The tool geometry, materials, wear process and life time are presented. The different cutting methods (turning, milling, drilling, grinding, planning, shaping, broaching), tools and related machine tools are described.</i>						
Schedule						
Week no.		Topics				
1.		Introduction Manufacturing process planning, requirements and process elements, Documenting				
2.		Blank materials, selection and calculation, tolerances and manufacturing errors			Safety and ergonomics in machining workshop	
3.		Cutting technology			Manufacturing examples	
4.		Edge geometry and tool materials			Manufacturing process planning 1 HW1 out	
5.		Tool wear, forces, cooling			Manufacturing process planning 2	
6.		Basic cutting methods and machine tools: turning,			Consultation	
7.		Basic cutting methods and machine tools: turning,			Manufacturing process planning 3	
8.		Basic cutting methods and machine tools: milling			Manufacturing process planning 4	
9.		Basic cutting methods and machine tools: drilling			Manufacturing process planning 5	
10.		Basic cutting methods and machine tools: Grinding			Manufacturing process planning 6	
11.		Positioning and fixtures, typical fixtures in machining			Consultation	
12.		Manufacturing examples			Deadline of HW1	
13.		Test				
14.		Retake test				
Requirements						
1 test in 13th week (max 60 points), 1 homework (max 30 points)						
0-39 % – 1 (fail); 40-54 % – 2 (pass); 55-69 % – 3 (satisfactory) 70-84 % – 4 (good); 85-100 % – 5 (excellent)						

Literature:

- [1] S. Kalpakjian; S.R. Schmid: Manufacturing engineering and technology; Pearson Singapore 7th ed. 2014. (Chapters: 21-26.)
- [2] Handouts in the Moodle system
- ~~[3] G. Schneider: Cutting tools applications (electronically available)~~
- [4]