

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 Credit: 4 Full time course Term: 2022/2023 I.					
Programme: Mechatronic Eng BSc II English			Timetable: Lec.: Mo. 13:30-15:10 Room 110. 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 40 points), 1 optional experimental work (5+5 points) 1 homework (max 20 points)					
0-60 % – 1 (fail); 60-70 % – 2 (pass); 70-80 % – 3 (satisfactory) 80-90 % – 4 (good); 90-100 % – 5 (excellent)					

Literature:

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