

<b>Óbuda University</b> Bánki Donát Faculty of Mechanical and Safety Engineering			<i>Institute:</i> Institute of Material and Manufacturing Science		
<b>Name of the subject:</b> <b>Fundamentals of manufacturing engineering BGXFAE3BNE / BAGFA1ANND</b> <i>(Forgácsolás technológia alapjai)</i> <i>Full time course</i> Term: 2020/2021 I. <b>Credit: 5</b>					
Programme: Mech 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: <b>2</b>	Practice.: <b>0</b>	Labs: <b>2</b>	Consultation:	
Way of closing the semester:		<b>Exam</b>			
<b>Curriculum</b>					
<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>					
<b>Schedule</b>					
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 <b>HW1 out</b>		
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		<b>Deadline of HW1</b>		
13.	Test				
14.	Retake test				
<b>Requirements</b>					
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] G. Schneider: Cutting tools applications (electronically available)
- [2] S. Kalpakjian; S.R. Schmid: Manufacturing engineering and technology; Pearson Singapore 7<sup>th</sup> ed. 2014. (Chapters: 21-26.)
- [3] Handouts in the Moodle system