

<b>Óbuda University</b> Bánki Donát Faculty of Mechanical and Safety Engineering				<b>Institute:</b> <i>Institute of Mechanical Engineering and Technology</i>	
Name of the subject: <b>Basics of manufacturing BGXGA1ABNE / BAGGA1AMND</b> <span style="float:right"><b>Credit: 4</b></span>					
Full time course                      Term: <b>2023/2024 I.</b>					
Programme: Tech Manager BSc II English			Semiar:	Mo. 08:00-09:40	Room 134.
			Lecture:	Mo. 09:50-11:20	Room 134.
Teacher respon- sible for the subject:	Mikó Balázs (PhD.habil; ass. prof.)		Teachers:	MIKÓ Balázs (PhD.habil; ass. prof.)	
Prerequisites:			-		
Hours per week:	Lecture: <b>1</b>	Practice.: <b>2</b>	Labs: <b>0</b>	Consultation:	
Way of closing the semester:	<b>Exam</b>				
<b>Curriculum</b>					
<i>The aim of the course is to familiarise students with the manufacturing technologies of mechanical components, the basic types of manufacturing tools and manufacturing processes. The course will cover the types of machining processes, tools, and the design of conventional and CNC machine tools. The technologies of fine surface machining (grinding, sanding, ...), laser, plasma and water jet machining, spark cutting technologies will be discussed. Special attention is paid to the production technologies of plastic and composite parts and to additive manufacturing processes. Basic measurement skills are also taught.</i>					
<b>Schedule</b>					
Week no.	Topics				
1	Introduction Manufacturing process planning, require- ments and process elements		Project work discussion		
2	Basics of cutting, Tool wear, forces, cooling Cutting tools, geometry and materials		Blank materials, selection and calculation, tolerances and manufacturing errors		
3	Basic cutting methods and machine tools: turning, drilling, milling		Edge geometry and tool materials		
4	Basic cutting methods and machine tools: planning, shaping, broaching, grinding		Manufacturing examples and cost analyses		
5	Plastic part production technologies		Consultation		
6	Composite technologies, Additive manu- facturing		Safety and ergonomics in machining work- shop		
7	Education break				
8	Metrology		Manufacturing workshop tour		
9			Manufacturing workshop tour (turning)		
10			Measuring workshop		
11	Education break				
12			Presentation workshop		
13			Consultation		
14	Test		Project presentation		
<b>Requirements</b>					
1 test in 14th week (max 40 points), 3 small tests (15 points) 1 homework (team work, manufacturing process analysis) (max 20 points)					
0-59 %                      – 1 (fail);      60-69 %                      – 2 (pass);      70-79 %                      – 3 (satisfactory) 80-89 %                      – 4 (good);    90-100 %                      – 5 (excellent)					

**Literature:**

- [1] S. Kalpakjian; S.R. Schmid: Manufacturing engineering and technology; Pearson Singapore 7<sup>th</sup> ed. 2014.
- [2] Handouts in the Moodle system