

Obuda University Bánki Donát Faculty of Mechanical and Safety Engineering				Institute of Mechanical Engineering and Technology			
Course title and code:		Manufacturing Engineering I. BGXGTE3BNF			Credits:		5
full time	training	2026/27	academic year	I.	semester		
Faculties in which the subject is taught:				Mechatronics Engineering BSc			
Lecturer instructor:		Mikó Balázs, PhD.habil		Instructor(s):		Mikó Balázs, PhD.habil	
Prerequisites conditions (code):				BAXMNE1BNF Engineering Materials			
Hours per week							
Lecture:	2	Practice:	-	Laboratory:	1	Consultation:	-
Semester closing way: (required):				midterm mark (written and oral)			
Timetable info:		Monday 13:30-16:05		Fr.3.315			
Online consultation (optional):				BBB link:			
Curriculum: The aim of the course is to acquaint the students with the production technologies of machinery parts, the basic types of production equipment and production processes. Within the framework of the subject, we deal with the types and tools of cutting processes, as well as the structure of traditional and CNC-controlled machine tools. We will discuss the technologies of fine surface machining (grinding, polishing, honing...), laser, plasma and water jet machining, EDM technologies. We deal separately with the production technologies of plastic and composite parts, as well as with additive manufacturing processes. The learning of basic measurement methods is the part of the curriculum							
Schedule							
Education al weeks	Topics						
1.	Introduction; Manufacturing process planning, requirements and process elements, Documenting Project work discussion						
2.	Cutting technology, Tool wear, forces, cooling; Blank materials						
3.	Basic cutting methods and machine tools: turning Tools workshop						
4.	Basic cutting methods and machine tools: drilling, milling Safety and ergonomics in machining workshop						
5.	Basic cutting methods and machine tools: planning, shaping, broaching, grinding						
6.	Manufacturing process planning (calculation example)						
7.	CNC machine tool NC programming						
8.	Plastic part production technologies Design for manufacturing: plastic parts						
9.	Composite technologies Additive manufacturing						
10.	Metrology Measuring lab						
11.	Project Consultation						
12.	Presentation workshop						
13.	Project work presentation						
14.	Test						

Requirements in a term					
Test		Task		Laboratory measurement	
Number	Date	Number	Deadline	Number	Date
1 closing	14 th week	1	13 th week		
4 small	3/6/9/12				
Requirements for completing the subject: Successful completion of 1 final test (max. 50 points, min. 30 points), 4 practice tests during the semester (max. 4x3 = 12 points) Technological analysis and presentation of a product in groups of 3 people (max. 15+5 points) + one optional experiment project (3+2 points)					
Condition of evaluate and replacement <i>Participation in the courses is governed by TVSZ 46.§ (1)-(4).</i> <i>Replacement during the term time is regulated in TVSZ 47.§ (7)-(9).</i> <i>The procedure for getting midterm mark/signatures after the end of the educational term is provided down in the Academic Regulations, Book Three, Part One, Chapter II, Section 3:8.</i>					
Other requirements for participation in courses not covered by the regulations and restrictions on replacements:					
Test		Task		Laboratory measurement	
maximum overall score	minimum score for completion/test	maximum overall score	minimum score for completion/task	maximum overall score	minimum score for completion/measurement
50	30	15+5	10		
4x3	0				
Maximum overall score in a term: $(4 \times 3) + 50 + 15 + 5 = 82$					
Scoring limits	pass from %	satisfactory from %	good from %	excellent from %	
	50	62,5	75	87,5	
Other evaluation criteria:					
No signature:					
Requirements in case of exam					
System of exams and reports: Type of exam: ☐ oral ☐ written ☐ oral and written ☐ other:					
Condition of offered mark and pre-exam:					
Mandatory course book:		1. S. Kalpakjian; S.R. Schmid: Manufacturing engineering and technology; Pearson Singapore 7 th ed. 2014. 2. Handouts in the Moodle system			
Recommended course book:					
Quality method of this subject:					
In all matters not covered by this document, the provisions of the Study and Examination Regulations and the Study Regulations of Óbuda University shall apply.					
Date: Budapest, 2025. 06. 16.					

lecturer instructor