

TOOL DESIGN

1	Course Title:	TOOL DESIGN
2	Course Code:	MAK5259
3	Type of Course:	Optional
4	Level of Course:	Third Cycle
5	Year of Study:	1
6	Semester:	1
7	ECTS Credits Allocated:	6.00
8	Theoretical (hour/week):	3.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	None
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Prof. Dr. Yahya Işık
15	Course Lecturers:	
16	Contact information of the Course Coordinator:	yahya@uludag.edu.tr
17	Website:	
18	Objective of the Course:	1. To understand the principles and terminology of metal removal processes. 2. To gain metal cutting mechanics. 3. During tool life, wear, force, surface roughness and temperature during metal cutting. 4. To explain the importance of cutting fluids. 5. To gain chip mechanisms and cutting coating methods. 6. To give general information about micro chip removal and CAM.
19	Contribution of the Course to Professional Development:	1. Can obtain the basics of metal cutting. 2. Can explain the force, wear and surface roughness during machining. 3. Understands the mechanics of metal cutting.
20	Learning Outcomes:	
	1	To define and apply advanced Mechanical Engineering concepts
	2	To carefully review the literature in line with the research project and to establish a link between the previous literature with its own results.
	3	To obtain detailed information through scientific research in his field of study; compare, evaluate and apply results
	4	Designing and conducting independent research projects
	5	To develop awareness of continuous learning with modern technology
	6	To be able to express his ideas and findings about the research subject effectively in oral and written form

		7	Apply knowledge to a specific specialty of mechanical engineering and make use of a variety of CAD / CAM / CAE tools		
		8	Demonstrate professional and ethical behavior responsibility		
		9	-		
		10	-		
21	Course Content:				
	Course Content:				
Week	Theoretical		Practice		
1	Basic principles of metal cutting				
2	Cutting terminology				
3	Metal cutting mechanics				
4	Tool life and tool wear				
5	Cutting tool materials				
6	Cutting tool coding systems				
7	Cutting fluids				
Activites			Number	Duration (hour)	Total Work Load (hour)
Theoretical			14	3.00	42.00
Practicals/Labs			0	0.00	0.00
Self study and preperation			14	8.00	112.00
Homeworks			1	16.00	16.00
Projects			0	0.00	0.00
Field Studies			0	0.00	0.00
Midterm exams			1	3.00	3.00
Others			0	0.00	0.00
Final Exams			1	3.00	3.00
Total Work Load					179.00
Total work load/ 30 hr			2	Metal cutting theory and practice / David A. Stephenson, David A. Stephenson, John C. Anagnosin	
ECTS Credit of the Course					6.00
			3. Metal cutting mechanics / Viktor P. Astakhov, Viktor P. Astakhov, 1999.		
23	Assesment				
TERM LEARNING ACTIVITIES		NUMBE R	WEIGHT		
Midterm Exam		1	30.00		
Quiz		0	0.00		
Home work-project		1	10.00		
Final Exam		1	60.00		
Total		3	100.00		

Contribution of Term (Year) Learning Activities to Success Grade	40.00
Contribution of Final Exam to Success Grade	60.00
Total	100.00
Measurement and Evaluation Techniques Used in the Course	Research and presentation on a topic related to metal cutting principles and final exam
24	ECTS / WORK LOAD TABLE

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	4	4	5	0	5	3	4	4	3	5	4	0	0	0	0	0
ÖK2	5	0	0	4	0	0	4	0	0	5	4	0	0	0	0	0
ÖK3	0	5	0	4	0	4	0	5	4	3	4	0	0	0	0	0
ÖK4	4	4	5	4	4	3	4	4	3	5	5	0	0	0	0	0
ÖK5	5	0	3	0	5	4	4	4	3	4	4	0	0	0	0	0
ÖK6	5	4	5	0	4	0	4	4	4	5	4	0	0	0	0	0
ÖK7	4	4	5	4	0	4	4	0	5	4	4	0	0	0	0	0
ÖK8	4	5	4	4	5	4	3	4	5	4	4	0	0	0	0	0
ÖK9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contribution Level:	1 very low		2 low		3 Medium		4 High		5 Very High							