INTRODUCTION TO MACHINE ELEMENTS

1	Course Title:	INTRODUCTION TO MACHINE ELEMENTS	
2	Course Code:	MAK2092	
3	Type of Course:	Optional	
4	Level of Course:	First Cycle	
5	Year of Study:	2	
6	Semester:	4	
7	ECTS Credits Allocated:	3.00	
8	Theoretical (hour/week):	2.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	No	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Dr. Ögr. Üyesi GÜLTEKIN KARADERE	
15	Course Lecturers:	Doç. Dr. Gültekin KARADERE	
16	Contact information of the Course Coordinator:	karadere@uludag.edu.tr 224-2941977 UÜ MMF Makine Müh. Bölümü, 16059 Bursa.	
17	Website:		
18	Objective of the Course:	To introduce the machine elements in machine design. To perform strength and sizing calculations of machine elements by using basic engineering sciences.	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	Determination of stresses in machine elements
		2	Design of welded and bolted joints
		3	Design of shaft-to-hub connections
		4	Design of springs
		5	Design of axles and shafts
		6	Design of sliding and rolling bearings
		7	Design of couplings and clutches
		8	Design of belt drive mechanisms
		9	Design of gear mechanisms
		10	
21	Course Content:		

Course Content:

Week	Theoretical	Practice
1	Stress analysis	
2	Static loading	
3	Variable loading	
4	Welded joints	
5	Bolted joints	

6	Shaft-to-hub connections	
7	Springs	
8	Repeating courses and midterm exam	
9	Axles and shafts	
10	Sliding and rolling bearings	
11	Couplings and clutches	
12	Belt drive mechanisms	
13	Gear mechanisms	
14	Gear mechanisms	

22	Textbooks, References and/or Other Materials:	1. Lecture notes (in Turkish), Gültekin Karadere, 2017-2018. 2. Makina Elemanları Teori, Konstrüksiyon ve Problemler (in Turkish) Cahit Kurbanoğlu, 2016. 3. Makina Elemanları ve Konstrüksiyon Örnekleri (in Turkish) Vol. 1,2 and 3, Talat Tevrüz, 2015. 4. Makina Elemanları, Vol. 1/2(in Turkish) , Erdem Koç, 2015/2013. 5. Makina Elemanları Çözümlü Problemler (in Turkish), Erdem Koç, 2015. 6. Makina Elemanları Problemleri (in Turkish), İsfendiyar Bakşıyev, Burhan Selçuk, 2012. 7. Makine Elemanları (in Turkish), Osman Yazıcıoğlu, 2011. 8. Makine Elemanları ve Konstrüksiyon Örnekleri (in Turkish), Fatih C. Babalık, 2010. 9. Makine Elemanları Çözümlü Problem Kitabı (in Turkish), Fatih C. Babalık, Kadir Çavdar, Nedim Gerger, Fatih Karpat, Nejat Kıraç, 2009. 10.Mechanical Engineering Design, J.E. Shigley, C.R. Mischke, R.G. Budynas, 2004.
23	Assesment	

TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Midterm Exam	1	30.00
Quiz	0	0.00
Home work-project	10	10.00
Final Exam	1	60.00
Total	12	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		

24	**ECTS / WORK LOAD TABLE**

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	14	2.00	28.00
Homeworks	10	2.00	20.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	7.00	7.00
Others	0	0.00	0.00
Final Exams	1	7.00	7.00
Total Work Load			90.00
Total work load/ 30 hr			3.00
ECTS Credit of the Course			3.00

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	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK5	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK6	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK7	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK8	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK9	4	4	4	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**