

STRENGTH OF MATERIALS

1	Course Title:	STRENGTH OF MATERIALS
2	Course Code:	MKNS209
3	Type of Course:	Optional
4	Level of Course:	Short Cycle
5	Year of Study:	2
6	Semester:	3
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:	None
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Yrd.Doç.Dr. GÖKHAN SEVİLGİN
15	Course Lecturers:	Doç.Dr.Abdil KUŞ, Doç.Dr.Yahya IŞIK, Öğr.Gör.Zafer YILDIZ
16	Contact information of the Course Coordinator:	gsevilgen@uludag.edu.tr, 0 224 573 98 62, Tozkoparan Caddesi Sanayi Sokak PTT karşısı Orhangazi/BURSA
17	Website:	
18	Objective of the Course:	The objective of this course is to understand the basic concepts of strength of materials according to design and apply basic calculations of strength materials to the calculations of the dimensioning of machine elements
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	
	1	Definition of the strength values of basic materials
	2	Calculations of the stress and strain for basic machine elements having static loads such as tensile compressive flexural torsional buckling loads
	3	The usage of stress strain diagram for assessment of strength of materials and strains.
	4	The calculations of strain values as a result of thermal stresses.
	5	The understanding of design criteria of thin-walled pressure vessels
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21	Course Content:	
	Course Content:	
Week	Theoretical	Practice
1	Outer and inner forces, support types and reaction forces	

2	General concepts of strength of materials : Stres types, a simple tensile test, strain, the strength values of materials	
3	General concepts of strength of materials : Hooke Law, thermal stress	
4	Calculation of inertia moments of cross sections	
5	The vertical shear force and bending moment in beams	
6	The vertical shear force and bending moment in beams	
7	The vertical shear force and bending moment in beams	
8	Midterm exam / Course review	
9	Torsional stress and related calculations	
10	Torsional stress and related calculations	
11	Buckling stress and related calculations (stability control)	
12	Buckling stress and related calculations (stability control)	
13	Stresses in thin-walled pressure vessels	
14	Stresses in thin-walled pressure vessels	
22	Textbooks, References and/or Other Materials:	1- Sayman, O., Aksoy, S., Erim, S., Akbulut, H., Mukavemet I, Dokuz Eylül Üniversitesi Mühendislik
Activites		Number
		Duration (hour)
		Total Work Load (hour)
Theoretical	3	1- Mayla, P., Cisimlerin Mukavemeti (Teori ve Problemler), ISBN: 975-436-943-1, Çağlayan Kitapları
Practicals/Labs	0	0.00
Self study and preperation	4	2- Savcı, M., Arpacı, A., Mukavemet, ISBN: 975-511-106- 0, Birsen yayınevi, 1999, İstanbul, Türkiye
Homeworks	0	0.00
Projects	1	ISBN: 975-295-187-2, Beta Yayınları, 2003, İstanbul, Türkiye
Field Studies	0	0.00
Midterm Assessment	1	4.00
Others	0	0.00
Final Exams	1	6.00
Midterm Exam	1	4.00
Total Work Load		90.00
Self study	0	0.00
Total work load/ 30 hr	0	3.00
Home work project	0	0.00
ECTS Credit of the Course		3.00
Final Exam	1	6.00
Total	2	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	

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	0	0	0	5	0	0	0	1	0	0	0	0	0	0	0	0
ÖK2	0	0	0	0	0	0	5	1	0	0	0	0	0	0	0	0
ÖK3	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
ÖK4	0	0	0	0	0	0	4	1	0	0	0	0	0	0	0	0
ÖK5	0	0	0	0	0	0	3	1	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			