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 SEVİLGEN	
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 Fakültesi Yayınları, 2000, İzmir, Türkiye 2- Hayla, P., Cisimlerin Mukavemeti (Teori ve Çözümlü Problemler), ISBN: 975-436-042-1, Çağlayan Kitabevi 3- Savcı, M., Arpacı, A., Mukavemet, ISBN: 975-511-106-9, Birsen yayınevi, 1999, İstanbul, Türkiye 4- Beer, F., Johnston, E., Mukavemet, ISBN: 975-295-187-2, Beta Yayınları, 2003, İstanbul, Türkiye

23	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	13	4.00	52.00
	Homeworks	0	0.00	0.00
	Projects	0	0.00	0.00
	Field Studies	0	0.00	0.00
	Midterm exams	1	4.00	4.00
	Others	0	0.00	0.00
	Final Exams	1	6.00	6.00
	Total Work Load			90.00
	Total work load/ 30 hr			3.00
	ECTS Credit of the Course			3.00

	Assessment	R
	Midterm Exam	1
	Quiz	0
	Home work project	0
	Final Exam	1
	Total	2
	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**				