STATICS-STRENGTH

1	Course Title:	STATICS-STRENGTH	
2	Course Code:	CEV1024	
3	Type of Course:	Compulsory	
4	Level of Course:	First Cycle	
5	Year of Study:	1	
6	Semester:	2	
7	ECTS Credits Allocated:	4.00	
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. Sedat Ülkü	
15	Course Lecturers:		
16	Contact information of the Course Coordinator:	sedat@uludag.edu.tr Uludağ Üniversitesi, Mühendislik-Mimarlık Fakültesi, Makine Mühendisliği Bölümü, 16059, Görükle, BURSA	
17	Website:		
18	Objective of the Course:	•Teaching fundamentals of mechanics of rigid bodies and finding the forces acting on objects before design according to equilibrium positions. •How parts of the machine can be designed for use in a safe manner under loads and strain behaviours of under this loads are aimed to be learned by students.	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	Teaching of vertical components of vectors, scalar and vector multiplication of two vectors, moment to teach the concepts.
		2	Teaching of frame analyses.
		3	Calculating of Center of gravity.
		4	Calculating of Moment of inertia.
		5	Calculate the stresses and strains in structures subjected to static loadings by tension, compression, shear, torsion, bending .
		6	Calculate the stresses under thermal effects.
		7	Ability to draw shearing force and bending moment diagrams.
		8	Ability to determine the appropriate dimensions of beams under vertical loadings to safely carry their loads.
		9	
		10	
21	Course Content:		
	Course Content:		

Week	Theoretical	Practice
1	Definitions and content of course.	
2	Statics analysis of material point. Forces action to a material point Vertical components of a vector, unit vectors.	
3	Scaler multiplication of two vectors, vectorial sum, moment.	
4	Method of joints for structural analyses. Method of section for structural analyses.	
5	Center of gravity	
6	Moment of inertia	
7	Stress and stress types Uniaxial state of stress and tension test	
8	Repeating courses and midterm exam	
9	Hooke Law, and the safety factor for allowable stress	
10	Thermal stress	
11	Plain stres, Mohr circle (Single Axis State)	
12	Shear force and bending moment diagrams of beams under vertical loads.	
13	Normal stresses vertical loaded beams	

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	4.00	56.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	10.00	10.00
Others	0	0.00	0.00
Final Exams	1	10.00	10.00
Total Work Load			118.00
Total work load/ 30 hr			3.93
ECTS Credit of the Course			4.00

23	Assesment	
TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Midterm Exam	1	40.00
Home work-project	0	0.00
Final Exam	1	60.00
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**

Materials.
Üniversitesi Mühendislik Fakültesi Yayınları No: 244, İzmir-1995.
Grafostatik ve Mukavemet
•Yayla, P., Cisimleri Mukavemeti , Kocaeli Üniversitesi Kocaeli 1998.
•Shelley, J.F., Engineering Mechanics, Statics, McGraw-
Hibbeler, R.C., Statics, Second Edition, Macmillan Publishing Co., Inc., New York, 1978

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