Marmara Üniversitesi - Fen Bilimleri Enstitüsü

Makine Mühendisliği (İngilizce)

DERS İZLEME PROGRAMI

2015-2016 Bahar Yarıyılı

Ders Kodu	Ders Adı	Ders Türü	Haftalık Ders Saati T	Haftalık Ders Saati U	Kredi	ECTS	Kampüs / Haftalık Gün ve Saati / Derslik
ME7014.1	Applied Elasticity	Ders	3	0	8,00	8,00	

Önkoşul Dersi		**Önkoşullu Dersi**	
Öğretim Üyesi	Prof.Dr. PAŞA YAYLA	**Öğrenci Görüşme Gün ve Saati**	
E-posta	pasa.yayla@marmara.edu.tr		
Telefon	2163480292 Dahili 1544	**Ofis / Oda No**	MC 666
Öğretim Üyesi Yardımcıları		**Telefon**	
E-posta		**Ofis / Oda No**	

Dersin Tanımı

Theory of Elasticity plays three major roles. It gives the exact solutions for problems having relatively simple boundary conditions. It gives us a method to control the solutions of the problems which cannot be solved with the conventional strength of materials approaches and also is enables to get the solutions with numerical analysis. Theory of elasticity is basically the origin of Solid State Mechanics of Materials it has a broad range of applications from engineering to materials science, from geophysics to medicine.

Dersin Kitabı ve/veya Kaynaklar

1) Yayla P., Uygulamalı Elastisite Teorisi, 1. Baskı, ISBN 978-605-133-709-8, Nobel Akademik Yayıncılık, 2014
2) Barber R.J., Elasticity, 3rd Ed., Springer, 2010
3) Boresi A.P., Chong K.P., Lee J.D., Elasticity in Engineering Mechanics, 3rd Ed., John Wiley, 2011
4) Timoshenko S.P., Goodier J.N., Theory of Elasticity, 3rd Ed., McGraw-Hill, New York, 1970
5) Fenner R.T., Engineering Elasticity, Ellis Horwood, 1986

Açıklamalar

HAFTA	Tarih	Konular	Kaynak No - İlgili Bölüm
1.Hafta	11.2.2016	Introduction and general topics, Stresses and strains	
2.Hafta	18.2.2016	Stresses and strains in Cartesian coordinates, Equilibrium equations in Cartesian and polar coordinate systems	
3.Hafta	25.2.2016	Three dimensional stress state at a point	
4.Hafta	3.3.2016	Stress and stress components	
5.Hafta	10.3.2016	Stress – strain relations, Thermo-elastic equations	
6.Hafta	17.3.2016	St Venant principle	
7.Hafta	24.3.2016	Two-dimensional elasticity problems, Plain-stress and plain strain	
8.Hafta	31.3.2016	Midterm Exam.	
9.Hafta	7.4.2016	Generalised Hooks Law, Elastic constant and relations in between, Virtual work	
10.Hafta	14.4.2016	Airy stress function, Stress function approach in two-dimensional problems, Superposition methods in stress function	
11.Hafta	21.4.2016	Bending of beams, Stresses in discontinuities	
12.Hafta	28.4.2016	Stress analysis in axial symmetric members, Thick walled pressure vessels, Axial stresses and strains, Compound cylinders	
13.Hafta	5.5.2016	Rotating disks, Rotating pressure cylinders	
14.Hafta	12.5.2016	Seminars	
15.Hafta	19.5.2016	Seminars	

Değerlendirme Araçları

Ölçme Aracı	Adet	Tarih	Başarı Notuna Katkısı (%)	Yarıyıl / Yıliçi Değ. Notuna Katkısı (%)	Sınav Türü
Yarıyıl / Yılsonu Sınavı	1	-	50	-	
Bütünleme Sınavı (varsa)	0	-		-	
Yarıyıl / Yıliçi Değerlendirme Bilgileri					
Midterm Exam	1		25,0	50,0	Ara Sınav
Seminar	1		15,0	30,0	Diğer
Homework	1		10,0	20,0	Ödev