

Republic of Iraq
The Ministry Of Higher
Education
& Scientific Research

بسم الله الرحمن الرحيم



University: Dyjala
College: Engineering
Department: civil
Stage: second
Lecturer name: Lect.Dr. Murtada Ameer Ismael
Qualification: Doctorate (Ph.D) in Civil Eng.
Place of work: University of Dyjala:

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Course Instructor	Dr. Murtada Ameer Ismael				
E-mail	murtadaameer13@yahoo.com				
Title	Strength of Materials				
Course Coordinator	Assist. Lecturer Yasser Nashaat				
Course Objective	The objective of this course is that the student acquires the basis of Strength of Materials. In this way, the student will be able to analyze and design different types of elements, for mechanical components and civil engineering structures. For this purpose, the student will learn how to compute the stresses , strains , deflection ,axial forces ,shear forces, bending moments and tensional moments for different types of structural elements subjected to different types of loads.				
Course Description	This course is divided into number of chapters include subjects about simple stress , combined stress , thermal stresses , stress in point , strains , deformations produced from different loads types and calculations of deflection by different methods. The chapters also include computations of the stresses , strains , deflection ,axial forces ,shear forces, bending moments and tensional moments, analysis and design of different types of structural elements such as beams , columns , shafts , lap connections which is very important in different engineering fields.				
Textbook	"Strength of Materials", Ferdinand L. Singer , 3rd Edition, 1980				
References	" Introduction to mechanics of Materials " , Paul E. Popov, 2nd Edition" 1956 "Elements Strength of Materials", Stephen P. Timoshenko and D. H. Young, 5th Edition , 2011.				
Course Assessments	Term Tests	Laboratory	Quizzes	Project	Final Exam
	30%	10%	10%	-	50%
General Notes					

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Course Weekly Outline

Week	Date	Topes Covered	Lab. Experiment Assignments	Notes
1	21/9/2014	Simple Stress , Average Normal Stress	Introduction	
2	28/9/2014	Average Shear Stress , Allowable Stress	Introduction	
3	5/10/2014	Design of Simple Connections , Simple Strain	Experimental 1: tension test of Metals , Automated testing	
4	12/10/2014	Strain , Stress-Strain Diagrams	Experimental 1: tension test of Metals , Automated testing	
5	19/10/2014	Hook s low ,Shear Deformation	Experimental 1: tension test of Metals , Automated testing	
6	26/10/2014	Poisson's Ratio , Statically Indeterminate Members	Experimental 1: tension test of Metals , Automated testing	
7	2/11/2014	Thermal Stress, Torsion	Experimental ٢:Torsion test of metallic materials	
8	9/11/2014	Torsion Formula , Angle of Twist	Experimental ٢:Torsion test of metallic materials	
9	16/11/2014	Power Transmission, Shear and Bending Moment Equilibrium and Section method	Experimental ٢:Torsion test of metallic materials	
10	23/11/2014	Shear and Moment Diagrams- Equilibrium and Section method	Experimental ٢:Torsion test of metallic materials	
11	30/11/2014	Shear and Moment Diagrams- Equilibrium and Section method	Experimental 3: Stress, strain and deflection of steel beams in pure bending	
12	7/12/2014	Shear and Moment Diagrams- Graphical Method	Experimental 3: Stress, strain and deflection of steel beams in pure bending	
13	14/12/2014	Shear and Moment Diagrams- Graphical Method	Experimental 3: Stress, strain and deflection of steel beams in pure bending	
14	21/12/2014	Shear and Moment Diagrams- Graphical Method ,Stresses in Beams	Experimental 3: Stress, strain and deflection of steel beams in pure bending	
15	28/12/2014	Flexural Formula , Unsymmetric Bending	Experimental 3: Stress, strain and deflection of steel beams in pure bending	
16	4/1/2015	Flexural Formula , Unsymmetric Bending	Experimental 3: Stress, strain and deflection of steel beams in pure bending	

Half – year break				
17	15/2/2015	Stresses in Beams-Shear Formula, Shear Follow in Built in-up Members	Experimental 3: Stress, strain and deflection of steel beams in pure bending	
18	22/2/2015	Shear Center, Design of Beams and Shifts	Experimental 3: Stress, strain and deflection of steel beams in pure bending	
19	1/3/2015	Prismatic Beam Design	Experimental 4: Strain measurement aluminum beams	
20	8/3/2015	Shaft Design, Composite Beams	Experimental 4: Strain measurement aluminum beams	
21	15/3/2015	Composite Beams, Different Materials Beams	Experimental 4: Strain measurement aluminum beams	
22	22/3/2015	Different Materials Beams , Reinforced Concrete Beams	Experimental 4: Strain measurement aluminum beams	
23	29/3/2015	Reinforced Concrete Beams, Stress Transformation	Experimental 4: Strain measurement aluminum beams	
24	5/4/2015	Plane-Stress Transformation, General Equation of Plane- Stress Transformation	Experimental 4: Strain measurement aluminum beams	
25	12/4/2015	Moher s Circle , Deflection-Elastic Curve	Experimental 5: Compression test of steel column	
26	19/4/2015	Slop and Displacement by Integration, Deflection-Discontinuity Function	Experimental 5: Compression test of steel column	
27	26/4/2015	Moment- Area Method, Deflection-Superposition Method	Experimental 5: Compression test of steel column	
28	3/5/2015	Columns-Critical Load, Columns have various Types of supports	Experimental 5: Compression test of steel column	
29	10/5/2015	Columns -Secant Formula, Computer Application	Experimental 5: Compression test of steel column	
30	17/5/2015	Computer Application	Experimental 5: Compression test of steel column	
31	24/5/2015	Computer Application		
32	31/5/2015	Computer Application		

INSTRUCTOR Signature:

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