Date:	Examination No.:	Version:	Start:

Module Name - Code	Mechanics of Material
Module Language:	English
Responsible:	Prof.Dr.Sinan Abdulkhaleq Yaseen
Lecture (s):	
College:	College of Engineering – Salahaddin University
Duration:	15 week – 2 semester
Course outcomes:	1. Understand the concepts of stress and strain at a point as well as the stress-strain relationships for homogenous, isotropic materials. 2. Calculate the stresses and strains in axially-loaded members, circular torsion members, and members subject to flexural loadings. 3. Determine the stresses and strains in members subjected to combined loading and apply the theories of failure for static loading. 4. Design simple bars, beams, and circular shafts for allowable stresses and loads
Course Content:	

Week	Lecture
1st	Course book, Introduction
2nd	Equilibrium of a Deformable
3rd	Body Stress, Average Normal Stress
4th	Average Shear Stress, Allowable Stress, design of Simple Connection
5th	Deformation, Strain
6th	Hooke's Law, Saint-Venant's Principle,Elastic deformation of anAxially Loaded Member
7th	Axially Loaded Member, Principle of Superposition, Statically Indeterminate Axially Loaded Member
8th	Midterm Exam
9th	The Force Method of analysis for Axially Loaded Member, Thermal Stress,
10th	Torsional Deformation of a Circular Shaft, The Torsion Formula
11th	Angle of Twist, Statically Indeterminate Torque-Loaded Member, Solid Non-Circular Shaft, Thin-Wall Tubes Having Closed Cross
12th	Sections. Shear and Moment diagram
13th	Graphical Method for Constructing Shear and Moment Diagram
14th	Seminar Presentations
15th	Final Exam

Literature:	1.R.C. Hibbeler " Mechanics of Material" Prentice Hall-Pearson, 8th Edition, 2011. 2.F.L. Singer and A. Pytel "Strength of Materials" Harper International Edition, 3rd Edition, 1980. 3.F.L. Bear, E.R. Johnston, and J.T. Dewolf "Mechanics of Materials "McGraw Hill Higher Education, 4th Edition, 2006. 4.A.C. Ugural "Mechanics of Materials " McGraw Hill. Inc. 1991. 5.R.S. Khurmi" Strength of Materials (Mechanics of solid) "SI unit, S. Ch and company LTD., New Delhi, 2008. 6.J. Case and A.H. Chilver " Strength of Materials and Structures" SI Unit, Edward Arnold publisher limited, 1975. 7.Crandall, S. H., N. C. Dahl, and T. J. Lardner." An Introduction to the Mechanics of Solids". 2nd ed. New York, NY: McGraw Hill, 1979.
Type of Teaching:	4 hrs in lectures
Pre-requisites:	Engineering Mechanics II
Frequency:	fall and spring semester
Requirements for credit points:	For the award of credit points, it is necessary to pass the module exams (Quizzes, Mid-term exam, final Exam > 50) **Student's attendance is required in all classes**.
Credit point:	5
Grade Distribution:	The Grade is generated from the examination result(s) with the following 20% activity (Quiz, Class Activity, Homework , Report) 30% mid-term exam 50% final Exam
Work load:	The workload is 150h. It is the result of 60h attendance and 90h self-studies.