Module(Course Syllabus)Catalogue

2023-2024

College/ Institute	Technology college
Department	Automotive Technology Engineering
Module Name	Strength of Materials
Module Code	STM502
Degree	Technical Diploma ☐ Bachelor ☐ High Diploma ☐ Master ☐ D ☐
Semester	five
Qualification	
Scientific Title	
ECTS (Credits)	6
Module type	Prerequisite ☐ Core ☐ Assist. ☐
Weekly hours	
Weekly hours (Theory)	(2)hr Class (27)Total hrs Workload
Weekly hours (Practical)	(2)hr Class (27)Total hrs Workload
Number of Weeks	12
Lecturer (Theory)	Prof.Dr.Basim Mohammed Fadhil
E-Mail& Mobile NO.	Basim.fadhil@epu.edu.iq
Lecturer (Practical)	
E-Mail & Mobile NO.	
Websites	

Course Book

Course Description	The course covers the following topics; stress and strain concepts, axial load,thermal stress, Elastic Constants, Principal Stresses and Strains, Methods for the stresses on an Oblique Section of a Body. Mohr's Circle for Stresses
Course objectives	1. To provide the basic concepts and principles of strength of materials. 2. To give an ability to calculate stresses and deformations of objects under external loadings. 3. To give an ability to apply the knowledge of strength of materials on engineering applications and design problems.
Student's obligation	The student's obligations are: 1-attending the lectures in the class and online, 2-doing homework, 3- doing assignments and quizzes.4- doing examinations.
Required Learning Materials	

Evaluation		Task	Weight (Marks)	Due Week	Relevant Learning Outcome
		Paper Review			
	Assignments	Homework	10%	3,8	
		Class Activity	2%	15	
		Report	8%	7	
		Seminar			
		Essay			
		Project/poster	8%	10	
	Quiz		8%	4,6,10	
	Lab.				

	Midterm Exam	24%		
	Final Exam			
	Total			

Specific learning outcome:	1- Students should be able to use mathematical symbols 3- Perform solutions of 1st ODE and 2nd ODE correctly 4- Evaluate correctly the Euler-chucy eqn. 5-power series and L.T
Course References:	1- Strength of materials by b Pytel and Singer 2- Strength of materials by Beer and Johnston 3- Strength of materials by khurmi

Course topics (Theory)	**Week**	**Learning Outcome**
Simple Stresses and Strains: Introduction.Elasticity.Stress.Strain.Types of Stresses.Tensile Stress. Compressive Stress. Elastic Limit.. Hooke's Law. . Modulus of Elasticity (or Young's Modulus)..	1,2	
Deformation of a Body Due to Force Acting on it. Deformation of a Body Due to Self-Weight.. Principle of Superposition.Stresses and Strains in Bars of Varying Sections	3,4	
Thermal Stresses and Strains: Introduction.. Thermal Stresses in Simple Bars. Thermal Stresses in Bars of Circular Tapering Section.Thermal Stresses in Bars of Varying Section.	5,6	
Elastic Constants: Introduction.. Primary or Linear Strain.Secondary or Lateral Strain.Poisson's Ratio.. Volumetric Strain.Volumetric Strain of a Rectangular Body Subjected to an Axial Force . sheer stress	7,8	
Principal Stresses and Strains:. Introduction.. Principal Planes.. Principal Stress.Methods for the stresses on an Oblique Section of a Body.	9,10	
Mohr's Circle for Stresses on an Oblique Section of a Body Subjected to a Direct Stress in One Plane.	11,12	

Practical Topics	**Week**	**Learning Outcome**

Questions Example Design

Extra notes:

External Evaluator