



Al-Ayen University / Technical Engineering College / Department of Medical Instrumentation Technical Engineering

Template of Course Specification

Name and Scientific title of the subject instructor: **Dr. Mohaimen Al-Thamir**

Name of Course: **Mechanics**

Course Specification

1.	Teaching Institution	Al-Ayen University / Technical Engineering College
2.	University Department / Center	Department of Medical Instrumentation Technical Engineering
3.	Course Title / Code	Mechanics
4.	Program(s) to which it contributes	B.Sc.
5.	Modes of Attendance offered	Electronic
6.	Semester/Year	1 st / 2022
7.	Number of hours tuition (total)	60
8.	Date of production/revision of this Specification	Feb. 2022
9.	Aims of the Course: The student will know the following:	
	1	Finding out the resultant of forces and analyzing a force into its perpendicular components
	2	Analyzing the equilibrium forces, moments acting on a body, and bending of beams
	3	Analyzing the structures and finding out the friction, centroid, and second moment of area
	4	Understanding the material properties, stresses, and simple strain
	5	Understanding the methods of joints; rivets, and welded connections
10.	Learning Outcomes, Teaching, Learning and Assessment Methods	
	A	Knowledge and understanding: The Mechanics program seeks to develop capabilities of students to understand the effects of forces and moments on the body in correlation with the mechanical properties of the materials reaching to the best investment of a material in that particular engineering application.
	B	Subject-specific skills: The program provides the capability to scientifically analyze the engineering problem and to find maximum limits that the material/body can sustain for a given operating conditions.
	C	Assessment methods: The assessment method are divided into three parts; quizzes, monthly exams, and final exams.



D	Thinking Skills: Providing a skilled staff to the scientific community that can effectively contribute to develop and tackle the relevant engineering problems.
E	Teaching and learning methods: The teaching is performed theoretically based upon theoretical concepts of Mechanics.
F	General and Transferable Skills (other skills relevant to employability and personal development): The most important skills are the knowledge and capability to provide scientific proposals to solve/tackle a given engineering problem.

11. Course Structure					
Week	Hours	Required Teaching Outputs	Unit/Module or Topic Title	Teaching Methods	Assessment Methods
1.	2	Student will understand	Introduction , resultant of force system	Electronic	Quizzes, monthly exams, and final exams
2.	2	Student will understand	Component of force	Electronic	Quizzes, monthly exams, and final exams
3.	2	Student will understand	Moment of force	Electronic	Quizzes, monthly exams, and final exams
4.	2	Student will understand	Couples , resultant of coplanar force systems	Electronic	Quizzes, monthly exams, and final exams
5.	2	Student will understand	Couples , resultant of coplanar force systems	Electronic	Quizzes, monthly exams, and final exams
6.	2	Student will understand	Equilibrium of force system	Electronic	Quizzes, monthly exams, and final exams
7.	2	Student will understand	Equilibrium of force system	Electronic	Quizzes, monthly exams, and final exams
8.	2	Student will understand	Non – coplanar force systems, equilibrium of non – coplanar concurrent force	Electronic	Quizzes, monthly exams, and final exams
9.	2	Student will understand	Non – coplanar force systems, equilibrium of non – coplanar concurrent force	Electronic	Quizzes, monthly exams, and final exams



10.	2	Student will understand	Analysis of structures	Electronic	Quizzes, monthly exams, and final exams
11.	2	Student will understand	Analysis of structures	Electronic	Quizzes, monthly exams, and final exams
12.	2	Student will understand	Methods of joint problems	Electronic	Quizzes, monthly exams, and final exams
13.	2	Student will understand	Methods of joint problems	Electronic	Quizzes, monthly exams, and final exams
14.	2	Student will understand	Friction	Electronic	Quizzes, monthly exams, and final exams
15.	2	Student will understand	Friction	Electronic	Quizzes, monthly exams, and final exams
16.	2	Student will understand	Centroid	Electronic	Quizzes, monthly exams, and final exams
17.	2	Student will understand	Centroid	Electronic	Quizzes, monthly exams, and final exams
18.	2	Student will understand	Second moment of area	Electronic	Quizzes, monthly exams, and final exams
19.	2	Student will understand	Second moment of area	Electronic	Quizzes, monthly exams, and final exams
20.	2	Student will understand	Material properties	Electronic	Quizzes, monthly exams, and final exams
21.	2	Student will understand	Stresses	Electronic	Quizzes, monthly exams, and final exams
22.	2	Student will understand	Stresses	Electronic	Quizzes, monthly exams, and final exams
23.	2	Student will understand	Simple strain	Electronic	Quizzes, monthly exams, and final exams
24.	2	Student will understand	Variable stresses	Electronic	Quizzes, monthly exams, and final exams
25.	2	Student will understand	Bending & beams	Electronic	Quizzes, monthly exams, and final exams



26.	2	Student will understand	Bending & beams	Electronic	Quizzes, monthly exams, and final exams
27.	2	Student will understand	Riveted and welded connections	Electronic	Quizzes, monthly exams, and final exams
28.	2	Student will understand	Riveted and welded connections	Electronic	Quizzes, monthly exams, and final exams
29.	2	Student will understand	Special topics	Electronic	Quizzes, monthly exams, and final exams
30.	2	Student will understand	Special topics	Electronic	Quizzes, monthly exams, and final exams

12. Infrastructure	
Required reading: ·CORE TEXTS ·COURSE MATERIALS · OTHER	ENGINEERING MECHANICS STATICS J. L. MERIAM • L. G. KRAIGE • J. N. BOLTON
Special requirements (include for example workshops, periodicals, IT software, websites)	<ul style="list-style-type: none"> ENGINEERING MECHANICS STATICS J. L. MERIAM • L. G. KRAIGE • J. N. BOLTON ENGINEERING MECHANICS DYNAMICS J. L. MERIAM • L. G. KRAIGE • J. N. BOLTON
Community-based facilities) include for example, guest Lectures, internship, field studies)	Scientific collaboration with other academic staff in the relevant field is one of our future plan to develop the program.

13. Admissions	
Pre-requisites	
Minimum number of students	10
Maximum number of students	30