DEPARTMENT OF MECHANICAL AND INDUSTRIAL ENGINEERING
MECHANICAL ENGINEERING PROGRAM, BSC.

Course Syllabus

1. **Course number and name**
   ME 228 Applied Mechanics Lab

2. **Credits and contact hours**
   (0+1) 1 credit hours, 3 contact hours

3. **Course type**
   Blended Learning Course (1)

4. **Instructor's or course coordinator's name**
   Dr. Riyad Abu-Mallouh

5. **Textbook information**
   Applied Mechanics Lab Manual

   a. **Other supplemental materials**
      Hibbeler R. , Mechanics of Materials, 10th edition, 2016.
      ISBN-13: 978-0134319650.

6. **Specific course information**
   a. **Catalog description**
      Introduction to stress and deformation analysis of basic structural materials subjected to axial, torsional, bending, and pressure loads

   b. **Prerequisites or co-requisites**
      Prerequisite: ME 227 Applied Mechanics

   c. **The course is:**
      Required in Industrial Engineering Department

7. **Specific goals for the course**
   a. **Course outcomes:**
      After completion of the course, students are expected to be able to:

1. Understand the fundamental principles of Strength of materials
2. Describe the behavior of ductile and brittle materials under different loadings.
3. Discuss different types of impact and hardness testing.
4. Understand the fatigue loading and how it affects materials

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b. The following student outcomes are addressed by the course:
None

8. Learning Outcomes and their Alignment with Program Educational Objective (PEO's), Methods of Delivery, and Assessment Methods:

Learning Outcomes	Program PEOs	Method of Delivery	Assessment Method
Course Outcomes			
CO-(1): Understand the fundamental principles of Strength of materials	-	Lab	Assignment
CO-(2): Describe the behavior of ductile and brittle materials under different loadings.	-	Lab	Assignment
CO-(3): Discuss different types of impact and hardness testing.	-	Lab	Midterm Exam
CO-(3): Understand the fatigue loading and how it affects materials		Lab	Final Exam
Student Outcomes			
None			

9. Weekly Teaching Plan

Week No.	Lecture	Topic	Method of Delivery
1	Sun (1-4)	SUPPORT REACTION SIMPLY SUPPORTED BEAM	Lab
2	Sun (1-4)	TENSILE TEST	Lab
3	Sun (1-4)	COMPRESSION TEST	Lab
4	Sun (1-4)	TORSION TEST	Lab

5	Sun (1-4)	IMPACT TEST	Lab
6	Sun (1-4)	BRINELL HARDNESS TEST	Lab
7	Sun (1-4)	MIDTERM EXAM	Lab
8	Sun (1-4)	DEFLECTION OF A SIMPLY SUPPORTED BEAM	Lab
9	Sun (1-4)	FRICTION AND THE INCLINED PLANE	Lab
10	Sun (1-4)	PHYSICAL PENDULUM	Lab
11	Sun (1-4)	MASS-SPRING SYSTEM	Lab
12	Sun (1-4)	MOMENT OF INERTIA OF FLYWHEEL	Lab
13	Sun (1-4)	MAKEUP WEEK	Lab
14	Sun (1-4)	FINAL EXAM	Lab
15	Sun (1-4)		Lab

10. Grade Distribution:

Assessment	Grade	Week No.
- Midterm Exam	30%	7th Week
-Assignments (Reports /Quizzes/ Seminar / Tutorials/ Home works ….)	20%	1-16th Week
- Final Examination	50%	16th Week

Note: Make-up exams will be offered for valid reasons. It may be different from regular exams in content and format.