



Philadelphia University

Faculty of Engineering - Department of Mechanical Engineering

Course Information

Title: Strength of materials lab (620475)

Prerequisite: Manufacturing processes 1 (620474)

Credit Hours: 1 credit hours (3 hours/ week, 16 weeks per semester)

Textbook: Lab manual

References: Mechanics of Materials- 4th edition Gear

Description: The course is a requirement for Mechanical and Civil engineering students. It introduces practically concept of mechanical properties of materials.

Instructor: Eng. Lina Al-Khateb

Office: Mechanical Engineering building, room E612211 , ext. : 2361

Experiments:

Week	Exp.
1	- Introduction to strength of materials
2,3	- Tensile test
4	- Buckling test
5	- Shear and bending test
6	- Creep test
7	- Fatigue test
8	- Load of mechanical cell
9	- Impact test
10	- Hardness test
11	- Summary of lab
12	- Practical final exam
13	- Theoretical final exam

Course Learning Outcomes and Relation to ABET Student Outcomes:

Upon successful completion of this course, a student should be able to:

1.	Understand the concepts of tensile test and analysis stress –strain diagram
2.	Understand the buckling process and how to obtain the buckling critical load
3.	Drawing shear and bending diagrams and comparing the results with the practical ones.
4.	Define the creep test and its factors
5.	Understand the fatigue test and how to get the results
6.	Compare the theoretical deflection of beams with the experiment results.
7.	study the impact test results and analyses them
8.	Understand what is the hardness.

Assessment Instruments:

Evaluation of students' performance (final grade) will be based on the following categories:

Reports: For Each experiment one report must be written by the student to analyses the results of the experiment

Quizzes: 10-minute quizzes will be given to the students during the semester. These quizzes will cover material discussed during the previous labs.

Final Exam: The final exam will cover all the labs material.

Grading policy:

First	20% (10% Reports, 10% Quiz)
Second	20% (10% Reports, 10% Quiz)
Third	20% (10% Reports, 10% Quiz)
Final Exam	40% (15% Practical, 25% Theoretical)
Total:	100%

Attendance policy:

Absence from classes and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse, acceptable to and approved by the Dean of the relevant college/faculty, shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

Novvember , 2017