Philadelphia University

Faculty of Engineering - Department of mechanical Engineering

Course Information

Title:	Machine design 1 (0620434)
Prerequisite:	Machinery
Credit Hours:	3 credit hours (16 weeks per semester, approximately 44 contact hours)
Textbook:	"mechanical engineering design by shigley", tenth Edition, , 2015
References:	:fundamental of machine design by Steven R .Schmidt
Description:	The course is a requirement for all mechanical engineering students. It introduces the basic principles of machine design elements. Students will learn and practice and the application of the elements of main principles of machine design problems .
Website:	http://www.philadelphia.edu.jo/mgogazeh
Instructor:	Dr. Muhammad gogazeh **Email**: mgogazeh99@gmail.com **Office**: Engineering building, room E61208 **Office hours**: Sun, Tues, Thurs: 14:15-15:30 and Mon, Wed: 10:00 -11:00

Course Topics

Week	Topic
1	Introduction, to machine design
2	Materials
3,4,5	Load and stress analysis
6,7,8	Deflection and stiffness
9,10	Failure resulting from static loading
11,12,13	Fatigue failure resulting from variable loading Linear elastic fracture mechanics methods Endurance limit , fatigue failure equations
14 ,15	Shaft design
16	Review and final exam

Course Learning Outcomes and Relation to ABET Student Outcomes:

Upon successful completion of this course, a student should:

1.	Be able to understand and to solve machine element equations ,and be able to use basic standard and codes of machine design elements	[a, c, e]

2.	Be able to solve machine design problems especially for ,columns , stiffness, deflection equations …	[e , k]
3.	Have the ability to read and understand existing machine design codes	[a , e]
4.	Understand the main concept of mechanical engineering standards and codes	[a , k]
5.	Understand the main concepts of machine design elements , equations and have the ability to use them to simplify problem solving	[a , c , k]
6.	Understand and solving problems of stress stain ,failure equations	[a]

Assessment Instruments:

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

Exams: Two written exams will be given. Each will cover about 3-weeks of lectures

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

Homework: Problem sets will be given to students. Homework should be solved individually and submitted before the due date.

Copying homework is forbidden, any student caught copying the homework or any part of the homework will receive zero mark for that homework

Participation: Questions will be asked during lecture and the student is assessed based on his/her response

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

Grading policy:

First Exam	20%
Second Exam	20%
Homework	10%
Quizzes and participation	10%
Final Exam	40%
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.