

The Hashemite University Faculty of Engineering Course Syllabus Department of Mechanical Engineering

Course Title:	Machine Design II 3 (3,0, 0)	Course Number:	110402447
Designation:	Compulsory	Prerequisite(s):	110402440,110402445, 110402446
Instructor:	Dr. Hitham Tlilan	Instructor's e-mail::	
Office Hours:	****		
Dequired Courses			

Required Course:

Course Description (catalog): This course is a continuation to the machine design I course. Students will be introduced to the analysis and design concepts of various types of machine elements that include: bearings (journal and anti-friction); spur, helical and bevel gears; flexible drives and flywheels; clutches and brakes; shafts. **Textbook**(s) and/or **Other Supplementary Materials**:

Textbook(s) and/or Other Supplementary Materials:

Major Topics Covered:

Торіс	No. of Weeks	Contact hours*
Ch. 10. Mechanical Springs	2	6
Ch. 11. Rolling-Contact Bearings	2	6
Ch. 12. Lubrication and Journal Bearings	2	6
Ch. 13. Gears –General	1	3
Ch.14. Spur and Helical Gears	2	6
Ch.15. Bevel and Worm Gears	2	6
Ch.16. Clutches and Axles	2	6
Ch.17. Flexible Mechanical Elements	2	6
Total	15	45

*Contact hours include lectures, quizzes and exams

Specific Outcomes of Instruction (Course Learning Outcomes):

After completing the course, the student will be able to:

1. analyze mechanical systems and select proper machine element (springs, bearings, gears, brakes, belts and $\frac{1}{2}$ and $\frac{1$

pulleys, chains and sprockets) from commercial catalogs . $(a,\,c,\,e,\,f,\,j)$

2. design machine elements by their types, geometry, material and heat treatment and to integrate these elements to build a mechanical system. (c, e)

3. work in a design team and communicate effectively by means of a project. (c, e, j)

4. communicate the implemented design ideas through technical reports and oral presentations.(e, f, g j)

Student Outcomes (SO) Addressed by the Course:

#	Outcome Description	Contribution		
General Engineering Student Outcomes				
(a)	an ability to apply knowledge of mathematics, science, and engineering	Н		
(b)	an ability to design and conduct experiments, as well as to analyze and interpret data			
(c)	an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability	М		
(d)	an ability to function on multidisciplinary teams			
(e)	an ability to identify, formulate, and solve engineering problems	Н		
(f)	an understanding of professional and ethical responsibility	L		
(g)	an ability to communicate effectively	L		
(h)	the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context			
(i)	a recognition of the need for, and an ability to engage in life-long learning			
(j)	a knowledge of contemporary issues	L		
(k)	an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.			
	\mathbf{H} =High, \mathbf{M} = Medium, \mathbf{L} =Low			

Grading Plan:	Midterm Exam	30 Points *****
	HWs. & Qs Design Project Final exam	15 Points 15 Points 40 Points

General Notes: A team design project is required. The project will require the integration of several types of machine elements to design a mechanical system that is expected to perform a certain task. Each team is required to turn in a technical report and to give an oral presentation of their project.

Prepared by:

Dr. Hitham Ililan

Date: 11th Oct., 2020.