FUTURE UNIVERSITY IN EGYPT
جامعة المستقبل

Faculty of Engineering & Technology

Mechanical Design (1)

Information :

Course Code :	MAN 341	**Level :**	Undergraduate	**Course Hours :**	3.00- Hours

Department : Department of Mechanical Engineering

Instructor Information :

Title	Name	Office hours
Associate Professor	Hassan Mohamed Shams Eldin Elsayed Eleashy	10
Associate Professor	Hassan Mohamed Shams Eldin Elsayed Eleashy	10
Teaching Assistant	Donia Waheed Mohamed Abdelmonem Saleem	
Teaching Assistant	Raouf Mahmoud Mourad Naguib	

Area Of Study :

1. Develop engineering concepts to analyze a given mechanical elements under different design considerations.
2. Discuss problems in a simple and logical manner to apply fundamentals of mechanical design.

Description :

Introduction to Mechanical Engineering Design. Design Philosophy and Methodology: Phases of design process, design considerations, standards and codes. Engineering materials; classification, specification and selection. Factors affecting construction details, manufacturing and assembly processes, safety, aesthetics and economy. Design of Mechanical Elements: Shafts and shaft- components, Screws, fasteners, design of non-permanent joints, welding and design of permanent joints. Thin pipes and pressure vessels Application of CAD and Solid Works Group design project.

Course outcomes :

a.Knowledge and Understanding: :	
1 -	Define the fundamentals of mechanical design related to production engineering
2 -	Identify the principles of shaft design and shaft component design.
b.Intellectual Skills: :	
1 -	Think in a creative and innovative way in design problems solving
2 -	Classify numerical data and apply analytical methods for engineering design purposes
3 -	Analyze and interpret data, and design experiments to obtain primary data
c.Professional and Practical Skills: :	
1 -	Analyze knowledge of science, information technology, design, and engineering practice to solve design problems
2 -	Explain a component or system, and carry construction drawing.

Copyright É 2023 [Future University in Egypt]. All rights reserved.

d.General and Transferable Skills: :	
1 -	Use digital libraries and/or Learning systems.
2 -	Introduce ideas and solutions for many practical and engineering problems efficiently in predetermined time plan.

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Introduction & Design Basics	8	4	4
Variable Loads	4	2	2
Bolts & Fasteners	4	2	2
Power Screw Design	8	4	4
Shaft component design	10	6	4
Fits & Tolerance	4	2	2
bearing	12	6	6
Project follow -up.	4	2	2
Midterm Exams ,Quizzes	6	2	4

Teaching And Learning Methodologies :

Interactive Lecturing
Problem solving
Discussion

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
1 st -Mid-term examination	15.00	6	
2 nd -Mid-term examination	15.00	11	
Final examination	40.00	16	
Project	10.00	12	
Quizzes	20.00		

Copyright É 2023 [Future University in Egypt]. All rights reserved.