Faculty of Engineering & Technology

Mechanics 1

Information :

Course Code :	MEC 121	**Level** :	Undergraduate	**Course Hours :**	2.00- Hours

Department :	Faculty of Engineering & Technology

Instructor Information :

Title	Name	Office hours
Lecturer	Hamada Galal Taha Mohamed Askar	6
Lecturer	Hamada Galal Taha Mohamed Askar	6
Lecturer	Hamada Galal Taha Mohamed Askar	6
Assistant Lecturer	SHEROUK SOBHI ABDELSALAM FOUDA	
Assistant Lecturer	Noura Khedr Abdul raheem Ahmed	
Assistant Lecturer	SHEROUK SOBHI ABDELSALAM FOUDA	
Teaching Assistant	Mohamed Fathy Salem Mohamed	
Teaching Assistant	Ahmed Mohamed Abdelnaby Ali Shafay	
Teaching Assistant	Ahmed Muhammed Elmasbahy Abdel Samed	9

Area Of Study :

Overall aims of the course are to enrich students knowledge about:
˝Vector Algebra.
˝The type of forces in trusses & frames.

Description :

Applications on space vectors, Resultant of forces, Moment of a force, Equivalent couples, Equivalent systems, Equations of equilibrium of a rigid body, Types of supports, Equilibrium of plane systems (Trusses and frames), Equilibrium of space systems acting on rigid bodies, The mass center of a system of particles and laminas of different shapes, The mass moment of inertia of system of particles and laminas.

Course outcomes :

a.Knowledge and Understanding: :

1 -	Recognize vector and scalar quantities in statics.
2 -	Explain vector analysis operations.
3 -	Describe equilibrium engineering conditions for particles and rigid bodies.
4 -	Identify proper reactions of supports of rigid bodies in static equilibrium.
5 -	Define the difference between trusses and frames.

b.Intellectual Skills: :

1 -	Solve static equilibrium problems.

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2 -	Determine the centroid of laminas.
3 -	Evaluate the moment of inertia of particles and laminas.

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Applications on space vectors	4	2	2
Resultant of forces	4	2	2
Moment of a force, Equivalent couples	4	2	2
Equivalent couples,	4	2	2
Equivalent system	4	2	2
Equations of equilibrium of a rigid body	4	2	2
Types of supports	4	2	2
Equilibrium of plane systems(Trusses and frames)	4	2	2
Equilibrium of space systems acting on rigid bodies	4	2	2
Frames	4	2	2
Trusses	4	2	2
The mass center of a system of particles	4	2	2
The mass center of laminas of different shapes	4	2	2
The mass moment of inertia of system of particles	4	2	2
The mass moment of inertia of system of laminas	4	2	2

Teaching And Learning Methodologies :

Interactive Lecturing
Discussion
Problem solving

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
˝ÁParticipation	10.00		
Assignment +quizzes	10.00		
Final Exam	40.00		- Oral discussion to asses the ability of following the lecture.
First Mid Term Exam	15.00		- Oral discussion to asses the ability of following the lecture.
Second Mid Term Exam	25.00		- Oral discussion to asses the ability of following the lecture.

Course Notes :

Course and instructor notes.

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Recommended books :

˝Beer, F.P., Johnson, E.R. and Eisenberg, E. R., "VECTOR MECHANICS
   FOR ENGINEERS: STATICS", Mc Graw-Hill, 10th ed. in SI units, 2012

˝Hibbeler, R.C., "ENGINEERING MECHANICS: PRINCIPLES OF
STATICS AND DYNAMICS" Pearson Prentice Hall, 2006

Periodicals :

www.mhhe.com/beer johnston7
   www.prenhall.com/onekey

Web Sites :

www.mhhe.com/beer johnston7
   www.prenhall.com/onekey

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