Description

Date:	Examination No.: 4110	Version:1/9/2019	Start: 1/9/2022
Module Name - Code		Engineering Mechanics – 4110	
Module Language:		English	
Responsible:		Dr. Ali Izzadin Marouf	
Lecture (s):			
College:		College of Engineering – Salahaddin University	
Duration:		15 week – 1 semester	
Course outcomes:		The aim of this subject is Instruction the student the definition of forces in general and analysis of forces in space and the distances with the moment of force, in addition to cases of balances of forces with centre of weights. As well as studying and Trusses its types, calculation stress, reaction and forces capacity. The subject aim also to study the types of stress include shear, bearing , and simple deflection , also studying planning shear and moment diagram.	
Course Content:		Forces- Instruction the student a subject of forces, its analyses and distribution on structures, also studying forces in space

Moment of force - Studying the moment of force and define the moment, how fined the moment of force and principles of moments of forces, also studying couple, the definition of couple and the outcome of couple , Resultant of concurrent , coplanar force system- Resultant of non concurrent , coplanar , force system , Equilibrium- The student study in this subject the definition of equilibrium bodies and free body diagram, also equation of equilibrium for a number of converging forces which located in the same level, Equilibrium of bodies- Non concurrent , coplanar force.

Center of pressure- The student study in this subject how fined the center of pressure for concurrent and non concurrent forces, Center of Gravity of body centroids , Centroid of a few common shapes, Moment of Inertia- Second moment of Area by integration moment , its definition and studying second moment of Area by integration moment of inertia of a composite Areas, Trusses- Instruction the student to this type of building and the aim of this type in terms of working speed and economically, also Instruction the student the project that it is possible building by trusses.

Also explain the methods of design and fined amount of force in members tethered in truss include (a : Joint method. b : Section method) .

Strength of Materials- Simple Stress (Instruction the student the simple stress and component of internal effect on an section, also studying shearing stress and the definition) , Strength of Materials- Bearing stress (Instruction the student the bearing stress and the bearing stress between mixed bodies) - Simple Strain, its definition, and also studying Stress - Strain diagram , Strength of Materials- Shear force and bending moment in beams; - The student study the type of beam, shear force and also how change it from section to concurrent section with change the shape of loads inflicted upon - Drawing shear diagram for a number of practical questions , Bending moment- is Instruction the student how to change the moment between sections and change inflected loads on beams , also the student must know the aim of find moments and maximum moments on beams and their effects on buildings, and instruction the student that this moments identifies the amount of reinforcement in beams. | |
| Literature: | | Engineering Mechanics, static & dynamics, By A. Higdon,
Strength of Materials, By F. L. singer & A pytes.
Elementary theory of Structures, By yuan, Yu Hsieh | |
| Type of Teaching: | | 2 hrs in theoretical lectures

2 hrs laboratory working. | |
| Pre-requisites: | | | |
| Frequency: | | Yearly in fall semester | |
| Requirements for credit points: | | For the award of credit points, it is necessary to pass the module exam. It contains;

Midterm examination during the academic semester, Assignments and Final examination.

Student's attendance is required in all classes. | |
| Credit point: | | 4 | |
| Grade Distribution: | | The following grade system is used for the evaluation of the module exam;

The module exam is based on the summation of two categories of evaluations;

First: (40%) of the mark is based on the academic semester effort which includes

-        One examination during the academic semester = **30**%.

-            Quiz & Assignments = (**10**%). | |