وەزارەتی خوێندنی باڵا و توێژینەوەی زانستی

Department of Architecture

College of Engineering

University of Cihan

Subject: Engineering Mechanics

Course Book – Year 2

Lecturer's name BSc, PGdip, MSc, PhD

Dr. Arez Mohammed Ismael
Academic Year: 2015/2016

Course Book

1. Course name	Engineering Mechanics
2. Lecturer in charge	Dr. Arez Mohammed Ismael
3. Department/ College	Architecture/Engineering
4. Contact	e-mail: arezsml@yahoo.com Tel: 07700000477
5. Time (in hours) per week	Theory: 3 Practical: 0
6. Office hours	Sunday-Thursday (1:00pm to 2:00pm)
7. Course code	
8. Teacher's academic profile	Earned the bachelors degree in civil engineering, the master's degree in structure made by light weight concrete and PhD. in deformation and strength of damaged reinforced concrete T beams.
9. Keywords	

10. Course overview:

This course is an introduction to learning and applying the principles required to solve engineering mechanics problems. Concepts will be applied in this course from previous courses students have taken in basic math and physics. The course addresses the modeling and analysis of static equilibrium problems with an emphasis on real world engineering applications and problem solving. after students study this subject they can easily understand the concept of forces and moments. They will be able to analyze determinate structures and will have a thorough understanding how a member remains in equilibrium. they will learn about the concepts of trusses and the types of trusses. they will be able to identify a good system of truss for a structure and will be able to analyze them easily. they will learn about center of gravity of regular and irregular shapes and will also learn about moment of Intertia of the shapes and why its important. this is the basics and an introduction to structure. students will not only think about how a building or a structure will be beautiful and comfortable, they will also be able to draw maps of structures that its mechanically possible and easy to built.

11. Course objective:
This course is to introduce the basic principles of engineering mechanics with emphasis on their analysis and application to practical engineering problems. After learning this course, you should have the ability to:
 1) Solve for the resultants of any force systems
2) Determine equivalent force systems
3) Determine the internal forces in plane frames, simple span trusses and beams
4) Solve the mechanics problems associated with friction forces
5) Obtain the centroid, first moment and second moment of an area

12. Student's obligation
Students are Required to attend class, do their homeworks and do the quizzes, they have to study after each class and will have two take two exams for the semester

13. Forms of teaching
Problems are solved on the board, definitions and explanations are thoroughly shown on Data show and appropriate amount of time is given to students to write down the problems.

14. Assessment scheme
10% on quizzes and home works
30% half examination
60% Final Examination

15. Student learning outcome:

 On successful completion of this module the learner will be able to:

 1- analyze force systems on different planes

 2- understand the concepts of equilibrium

 3- learns about center of gravity and moment of Inertia

 4- learns the analysis of trusses

 5- knows what impact frictions has on bodies

16. Course Reading List and References:

Engineering Mechanics (static and dynamic) Archie Higdon, William B. Stiles

	Engineering Mechanics Statics R.C. Hibbeler		
17. The Topics:			**Lecturer's name**

	Weeks No.	Topic		Dr. Arez Mohammed Ismael
	1	Introduction Addition and resultant of forces Rectangular component of a force		
	2	Equilibrium of a particle Forces in space		
	3-4	Equilibrium in Space Vector product Moment of a force about a point		
	5	Scalar product Moment about an axis Couples		
	6-7	Equivalent systems of forces Equilibrium in two dimensions		
	8	Equilibrium in two dimensions Two and three force bodies Review		
	9-10	Centroid of areas and lines Centroids by integration Distributed loads, Centroids of volumes		
	11	Centroids of volumes Trusses by method of joints Trusses by method of sections		
	12-13	Frames and machines Laws of friction and applications Review		
	14	Parallel axis theorem and composite areas		
	15	Moment of inertia of masses		
	16	Three-dimensional bodies Composite bodies Review		

18. Practical Topics (If there is any)

19. Examinations:
Solving mechanical problems.

20. Extra notes:

21. Peer review