BA142- Engineering Mechanics (2)

CREDIT HOURS

3 Hours

CONTACT HOURS (Hours/week)

Lecture: 2; Tutorial: 2

TEXT BOOK

R.C. Hibbeler , *Engineering Mechanics: Dynamics*, Macmillan USA, latest edition .

COURSE DESCRIPTION

Introduction of the kinematics of the particle, rectilinear and projectile motions, force and acceleration. Moreover, work and energy of a particle, rotation of a body about a fixed axis, general plan motion, relative velocity and acceleration, equations of translation – rotational.

PREREQUISITE:

BA141

RELATION OF COURSE TO PROGRAM

Required

COURSE INSTRUCTION OUTCOMES

The student will be able to provide a clear and thorough presentation of the theory and applications of engineering mechanics.

TOPICS COVERED

- Kinematics of a particle – Rectilinear Kinematics.
- Curvilinear Motion – Projectile Motion.
- Force & Acceleration (Kinetics).
- Work & Energy of a particle (Kinetics).
- Rotation of a Rigid Body about a fixed Axis.
- General Plan Motion.
- Relative Motion (Velocity, Acceleration).
- Planar Kinetics of Rigid Body – Equation of Translation Motion.
- Equation of Rotational Motion.
- Equation of General Plane Motion.

CONTRIBUTION OF COURSE TO MEET THE REQUIREMENTS OF CRITERION 5:

Professional component Content			
Math and Basic Sciences	**Engineering Topics**	**General Education**	**Other**
✓	✓		

RELATIONSHIP OF COURSE TO STUDENT OUTCOMES:

Student Outcomes		Course aspects
A	An ability to apply knowledge of mathematics, science, and engineering	a_1 a_2
B	An ability to design and conduct experiments, analyze and interpret data.	
C	An ability to design a system, component, or process to meet desired needs within realistic constraints such as economics, environmental, social, political, ethical, health, and safety, manufacturability, and sustainability	
D	An ability to function on multi-disciplinary teams.	
E	An ability to identify, formulate, and solve engineering problems	e_1 e_2 e_3
F	An understanding of professional and ethical responsibility	
G	An ability to communicate effectively	
H	The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and social content	
I	A recognition of the need for, and an ability to engage in life-long learning.	
J	A knowledge of contemporary issues within and outside the electrical engineering profession.	
k	An ability to use the techniques, skills, and modern engineering tools necessary for electrical engineering practice.	