COURSE CODE:	ME-100
COURSE NAME:	Engineering Mechanics
CREDIT HOURS:	Theory = 3 Practical = 0 Total = 3
CONTACT HOURS:	Theory = 48 Practical = 0 Total = 48
PREREQUISITE:	None
MODE OF TEACHING:	Three hours of lecture per week

COURSE DESCRIPTION:

Engineering Mechanics provides students with an in-depth knowledge and understanding of the principles and laws governing engineering mechanics. The course also provide student an opportunity to apply the design procedures learned in class to the "real life".

COURSE OBJECTIVES:

The main objective of this course is to provide a basic understanding / concept, of principle, laws, and applications of Engineering Mechanics. The course will also discuss specific applications of Engineering Mechanics in environmental fields also.

RELEVANT PROGRAM LEARNING OUTCOMES (PLOs):

The course is designed so that students will achieve the PLOs:

1	Engineering Knowledge:	☑	7	Environment and Sustainability:	☐
2	Problem Analysis:	☑	8	Ethics:	☐
3	Design/Development of Solutions:	☐	9	Individual and Teamwork:	☐
4	Investigation:	☐	10	Communication:	☐
5	Modern Tool Usage:	☐	11	Project Management:	☐
6	The Engineer and Society:	☐	12	Lifelong Learning:	☐

COURSE LEARNING OUTCOMES:

Upon successful completion of the course, the student will demonstrate competency by

being able to:

Sr. No.	CLO	Domain	Taxonomy Level	PLO
1	**UNDERSTAND** the basic concepts of engineering mechanics	Cognitive	2	1
2	**APPLY** the knowledge of engineering mechanics to solve engineering problems.	Cognitive	3	2

PRACTICAL APPLICATIONS:

The course will help the students to understand the basic concepts of Engineering mechanics and the applications for solving and improving daily life problems and environmental issues. Moreover, this course will also help the students in design and analysis.

TOPICS COVERED:

Week	Topic Covered	Reading Assignment/ Homework	CLO #
1	Introduction to Engineering Mechanics & units' conversion	Chapter 1 Assignment 0	1
2	Scalars and vectors, Components in two dimensions	Chapter 2 Assignment 1 Quiz 1 (tentative)	2
3	Forces, equilibrium and free-body diagrams, two-dimensional force systems	Chapter 3 Assignment 2	2
4	Forces system resultant and Moments	Chapter 4 Assignment 3	1
5	Equilibrium of a particle	Quiz 2 Assignment 4	1, 2
6	Structural analysis Types of trusses, Method of joints	Chapter 6 Quiz 3	2
7	Internal Forces	Chapter 7	
8	**Mid Semester Exam**		
9	Friction	Chapter 8	1, 2
10	Centroids	Chapter 9 Assignment 5	2

11	Introduction to Dynamics its branches and related problems	Chapter 12 Quiz 4	1, 2
12	Rectilinear and curvilinear motion Related problems	Chapter 12-13 Assignment 6 Quiz 5	1, 2
13	Newton's equation of motion	Chapter 13 Quiz 6	1, 2
14	Projectile motion, Numerical involving linear and angular momentum	Chapter 14	1, 2
18	**End Semester Exam**		

TEXT AND MATERIAL:

TEXTBOOKS

a. Engineering Mechanics – Statics by R.C. Hibbeler (13th edition),
b. Engineering Mechanics – Dynamics by R.C. Hibbeler (13th edition)
c. Lectures and Handouts

Reference Books

a. Bedford and Fowler, "Engineering Mechanics: Statics, SI Edition", Pearson Prentice Hall,
   Bedford and Fowler, "Engineering Mechanics: Dynamics, SI Edition", Pearson Prentice Hall,
b. Engineering Mechanics by J.L. Miriam, 5th ed.

ASSESSMENT SYSTEM:

Theoretical/Instruction	**100%**
Assignments	10%
Quizzes	15%
Mid Semester Exam	25%
End Semester Exam	50%