VEER NARMAD SOUTH GUJARAT UNIVERSITY,SURAT

ENGINEERING MECHANICS

SEMESTER -I

TEACHING SCHEME	**L=3; P/D=2; TA=1**
EXAMINATION SCHEME	**Theory = 3hours; Marks= 100**
PRACTICAL / DRAWING	**Internal evaluation Marks: 20** **External evaluation Marks: 30**

(A) THEORY

(1) Definition of mechanics, definition of force and its SI units , method of problem solution , concurrent coplanar forces, forces in plane and space, applications of triangle law , parallelogram law, equilibrium of forces
(2) Rigid bodies, non concurrent forces, moment about an axis, equilibrium of non concurrent forces.
(3) Analysis of perfect truss, method of joints and methods of section, graphical methods
(4) Analysis of cable subjected to point loads, UDL and self weight.
(5) Centroid center of gravity, area moment of inertia, mass moment of inertia .
(6) Application of friction to engineering problems , viz. wedge ladder , belt etc
(7) Graphical solution of rectilinear motion and its application, curvilinear motion, normal, tangential and transverse component of velocity and acceleration.
(8) Kinetics of particles, dynamic equilibrium, work, power and energy.
(9) Computer applications for few topics of engineering mechanics.

(B) **PRACTICALS/DRAWING + TUTORIAL ASSIGNMENTS**:
Based on theory courses prescribed above.

(C) REFERENCES:

(1) Desai J.A and Mistry B.B, “Engineering Mechanics- Statics and Dynamics” Popular Prakashan. 1995.
(2) Shames I.H “Engineering Mechanics- Statics and mechanics”, Prentice hall of India private limited, 1999
(3) Timoshenko S. and Young D.H, “ Engineering and Mechanics” Mc Graw Hill Book Company , Inc, 1956