VEER NARMAD SOUTH GUJARAT UNIVERSITY,SURAT

STRENGTH OF MATERIALAS -II

SEMESTER –IV

TEACHING SCHEME **L=3; P/D=0; TA=0**

EXAMINATION SCHEME **Theory = 3hours; Marks= 100**

Term work: - 25

i) Thermal Stresses: Thermoplastic stress- strain relations, thin circular disc, temperature symmetrical at centre, long thin circular cylinder, thin sphere.

ii) Vortex Induced Stresses, vortex wake of a stationary circular cylinder, strouhal number, effect of cylinder motion on wake, correlation model, thermocouple probe example, tow cable example

iii) Energy Principles in solid continuum, Introduction to energy Work & internal energy, principles of virtual work, Bett's & Maxwell's laws, principles of minimum potential energy, Casti- gliano's theorem, principles of complementary work, simple deflection, problems based on above theorems, theories of failure, their significance in design.

iv) Rotating cylinders and discs, rtating discs of uniform strength, stresses in rotating cylinders.

v) Strength of welded joints, types of weld, eccentric loading in welded joints.

vi) Bending of curved bars: Stresses in bars of small initial curvature-strength in bars of large curvature, extension of curved bars.

REFERENCES:

1. L.S. Srinath, ' Advanced Mechanics Of Solids',Tata McGraw Hill Co.
2. R.D. Blevines, 'Flow induced vibrations', Van-Nostrand Reinhold Co. New York.
3. Ryder, ' Strength Of Materials', ELBS.
4. S.B. Junnarkar & Adavi, 'Mechanics Of Structures Vol. I', Charotar Publishing House, Anand.