

AS 333 **Structural Analysis-I (3-0-0)**

Module 1

1. Introduction to Statically determinate/ indeterminate Structures with reference to 2D and 3D structures. Free body diagram of structures.

2. B.M. and S.F. diagrams for different loading on simply supported beam, cantilever, propped cantilever and overhanging beams. Three hinged arches, tangential shear and normal thrust

Module 2

3. Deflection: Different methods, Castigliane's theorems, Reciprocal theorems, Conjugate beam method, Unit load method.

4. (a) Deflection of joints /supports for trusses.

(b) Application of Clapeyron's three moment theorem; Continuous beams.

Module 3

5. ILD for determinate structure for reactions at supports, S. F at a given section, B.M. at a given section, maximum shear and maximum B. M at a given section; problems relating to series of wheel loads, udl less than or greater than the span of the beam,

6. ILD for B.M., S.F normal thrust and radial shear of a three hinged arch.

Module 4

7. Suspension cables, 3 hinged stiffening girders

8. Introduction to space frames.