**SRI RAMAKRISHNA MISSION VIDYALAYA COLLEGE OF ARTS**

**AND SCIENCE (AUTONOMOUS) COIMBATORE – 641 020.**

**For candidates admitted from academic year 2013-2014 onwards**

**Under New CBCS**

**Programme : B.Sc., Mathematics.**

**Course Title : Core 6: STATICS Subject Code : 3CT06**

**Year : Second Year Semester : III**

**Hours/Week : 5 Credits : 4**

**Unit -I**

**KINEMATICS :**Mechanics, Units, Vector and Scalar quantities, A vector as a sum of three mutually perpendicular vectors, A vector as a sum of two non – perpendicular vectors.

**FORCES :**Force, types of forces, magnitude and direction of the resultant of forces acting on a particle (in particular resultant of two forces acting on a particle), equilibrium examples.

**EQUILIBRIUM OF A PARTICLE :**Equilibrium of a particle acted on a rough inclined plane, examples.

**Chapter. I Sec. 1-5, Ch. 2&6**

**Unit –II**

**FORCES ON A RIGID BODY :** Moment of a vector, General motion of rigid body, equivalent or equipotent systems of forces, resultant of parallel forces, couple, resultant of several coplanar forces.

 **Chapter 7, Sec 7.1 – 7.6**

**Unit –III**

 Moment of the resultant force, couples in a plane or in parallel planes, resultant of a couple and a force, three coplanar forces on a rigid body, equation of the line of action of the resultant, equilibrium of a rigid body under three coplanar forces examples.

**Chapter 7 ,Sec 7.7 – 7.12**

**Unit –IV**

**A SPECIFIC REDUCTION OF A SYSTEM OF FORCES :** Reduction of a system of forces to a force at a chosen point and a couple, central axis, problems involving frictional force, problems involving tilting of bodies, examples.

**Chapter 8.**

**Unit -V**

**Stability of Equilibrium and HANGING STRINGS:**Equilibrium of a uniform homogeneous string, sag, suspension bridge, examples.

**Chapter 10 &11**

**TEXT BOOK:**

**Mechanics by P.Duraipandian and others,** S.Chand & Co., 1990.