

*BHARATHIAR UNIVERSITY, COIMBATORE.*

## **B.Sc. Mathematics with Computer Applications**

**(Revised paper for the students admitted from the academic year 2016-2017 and onwards)**

### **Semester: III Core Paper –VI**

**Subject title: Statics**

Subject Description:

This course contains the nature of forces acting on a surface, friction and center of gravity.

Goal:

To enable the students to realize the nature of forces and resultant forces when more than one force acting on a particle.

Objectives:

On successful completion of course the students should realize the concept about the forces, resultant force of more than one force acting on a surface, friction and center of gravity. Also he can differentiate static and dynamic forces.

UNIT-I

Forces acting at a point – Parallelogram law-triangle law -

UNIT- II

$(\lambda, \mu)$  theorem - Polygon of forces-conditions of equilibrium.

UNIT – III

Parallel Forces-Moments and couples composition of parallel forces (like and unlike)\-

UNIT – IV

Moment of a force about a point-Varignons theorem - Co-planar forces acting on a rigid body – Theorem on three co-planar forces in equilibrium

UNIT – V

Reduction of a system of co-planar forces to a single force and a couple - necessary & sufficient conditions of equilibrium only – Equation to the line of action of the resultant.

Treatment as in

M.K.Venkataraman, Statics, Agasthiar Publications, Trichy, 1999.

**References:**

1. **Statics by P.Kandasamy and K.Thilagavathi, S.Chand & Company Pvt.Ltd., 2016**
2. A.V.Dharmapadam, Statics , S.Viswanathan Printers and Publishing Pvt., Ltd, 1993.
3. P.Duraipandian and Laxmi Duraipandian, Mechanics , S.Chand and Company Ltd, Ram Nagar, New Delhi -55, 1985.
4. Dr.P.P.Gupta, Statics , Kedal Nath Ram Nath, Meerut, 1983-84.