## Course Content & Grade

| Branch | Subject Title | Subject Code | Grade for End Sem | | CGPA at the end of every even semester |
|---|---|---|---|---|---|
| B.TECH. Common | Basic Civil Engineering & Engineering Mechanics | BT- 2004 | Theory | Practical | |
| | | | Min."D" | Min."D" | 5.0 |

**APPLIED MECHANICS:**

1. FOR CES AND EQUILIBRIUM :Graphical and Analytical Treatment of concurrent and nonconcurrent coplanar forces, force diagrams and Bow's notations, application to simple engineering structures and components, method of joints, method of sections for forces in memBTrs of plan frames and trusses.

2. CENTRE OF GRAVITY AND MOMENT OF INERTIA :Centroid of plane figures and centre of gravity of masses and forces, moment of inertia of area and mass, radius of Gyration, principle axes of sections and principle of inertia.
3. SIMPLE LIFTING MACHINES : Laws of machines, reversible and irreversible machines, velocity ratio, limiting values of mechanical advantage and efficiency of machines, various types of simple machine.

**SURVEYING AND FIELD WORK:**
1.Linear measurements : Chain and Tape Surveying, Errors, Obstacles, Booking and Plotting, Calculation of Areas.
2.Angular Measurements : BTaring, Prismatic Compass, Local Attraction, Bowditch's Rule of correction, traverse open and closed, plotting of traverse, accuracy and precision.
3.Levelling : Types of Levels, Levelling Staff, Measurements, recording, curvature and refraction correction, reciprocal levelling, sensitivity of level.
4.Contours : Properties, uses, plotting of contours, measurement of drainage and volume of reservoir.
5.Measurement of area by planimeter.

**BUILDING MATERIALS :**
1.Bricks : Manufacturing, field and laboratory test, Engineering properties.
2.Cement : Types, physical properties, laboratory tests
3.Concrete and Mortar Materials : Workability, Strength Properties of Concrete, Nominal Proportion of Concrete, Preparation of Concrete, Compaction Curving.
Mortar : Properties and Uses.

**SESSIONAL WORK :**
Practical work will BT based on syllabus of surveying and Applied Mechanics & Materials.

**Reference Books:**


1. S. Ramamrutam & R.Narayanan; Basic Civil Engineering, Dhanpat Rai Pub.
2. Prasad I.B., Applied Mechanics, Khanna Publication.
3. Punmia, B.C., Surveying, Standard book depot.
4. Shesha Prakash and Mogaveer; Elements of Civil Engg & Engg. Mechanics; PHI
5. S.P,Timoshenko, Mechanics of stricture, East West press Pvt.Ltd.
6. Surveying by Duggal – Tata McGraw Hill New Delhi.
7. Building Construction by S.C. Rangwala- Charotar publications House, Anand.
8. Building Construction by Grucharan Singh- Standard Book House, New Delhi
9. Global Positioning System Principles and application- Gopi, TMH
10. R.C. Hibbler – Engineering Mechanics: Statics & Dynamics.
11. A. Boresi & Schmidt- Engineering Mechines- statics dynamics, Thomson' Books
12. R.K. Rajput, Engineering Mechanics S.Chand & Co.