

CE 151 BASIC CIVIL ENGINEERING
L=4, P=2, CREDITS = 6

1. Introduction: Role of Civil Engineering Development and infrastructure creation **1**

2. Elements of Surveying: **8**

Primary division of Surveying and classification. Scales ,plans, Maps, Chain Survey , Compass Survey and Traverse Survey.

Definitions in Leveling, Methods of Leveling , Contouring , Area measurement by planning meter.

Introduction to modern tools of Surveying and mapping such as GIS , GPS and Remote Sensing

2.Elements of Building Construction: **13**

Classification of building based upon occupancy and structure. Design Loads.

Common building components, their functions, and nominal dimensions.

Common materials of construction. Elements of building drawing. Introduction to building bye laws.

3.Elements of Water Resources Development **6**

Elementary Hydrology , Sources of Water , Water Requirements and Its Conservation. Hydraulic Structure for storage , Water Conveyance System Such as Canal, Channel and Water Conduits

4 Elements of Environmental Protection: **6**

Elements of Environmental Protection , Water Quality Criteria and Standards , Water supply system for domestic uses Sanitation system used for waste water collection and disposal at House level and Community level

Energy use related Environmental Pollution , Air, Noise , Radiation , Thermal and glare pollution and their impacts.

5. Elements of Transportation Engineering: **6**

Role of Transportation in National development, Transportation Ways Surface Transportation and Aviation , Elements of Highway construction , BOT projects for Highway , Elements of Traffic Engineering and Traffic Control devices

Reference Books (all reference with latest edition preferable after 2001)

1. Dr. F.U. Umrigar and Prof. J.H. Patel

Basic Civil Engineering.

Atul Prakashan Amdavad

2. Dr. P.D Despande

Basic Civil Engineering.

Nirali Prakashan Pune

3. **Phadke, Phadke and Palwe**

Elements of Civil Engineering

Nirali Prakashan Pune

4. Dr. M.B. Gohil Divya P. Gohil .Patel

Basic Civil Engineering.

Atul Prakashan Amdavad

Practicals

1. Orientation to Civil Engineering Laboratories
2. Experiment on Linear Measurement by direct measurements
3. Experiment on Angular measurements
4. Experiment on Vertical measurements
5. Experiment on Water quality measurements
6. Experiment on Flow measurements
7. Experiment on Pavement Materials and traffic Control devices
8. Building component Drawing
9. Design of a simple building
10. Construction site visit and study of building materials
11. Quiz