

## FC 104 : BASIC CIVIL ENGINEERING

CREDITS 5 (L = 4, P = 2)

Role of Civil Engineering in the field of Engineering Technology and Infrastructure.

1. Elements of Surveying :

Surveying and Levelling : Definition, Geodetic Survey and Plane Survey. Scales, Plans and Maps. Chain Survey, Traverse Survey; Compass traverse Survey.

Levelling : General terms used in levelling. Methods of levelling. Contour Survey. Area measurement by a planimeter.

2. Elements of Building Construction :

Materials of Construction, Building Components and their requirements, Building systems, Design loads, Building drawing : Conventions, Plan, Elevation and Section; Elementary Building Bye-laws; Building Classification.

3. Elements of Water Resources Development :

Elementary Hydrology, Water Requirements and its conservation, Hydraulic Structures, Water Resources Development in India.

4. Elements of Environmental Protection :

Environment and Ecosystem, Water Quality criteria, Domestic and Industrial wastes and treatment, Air and Energy related Pollution, Solid waste management, Environmental protection and legislation.

5. Elements of Transportation Engineering :

Objectives and Importance of Transportation in National Development; Transportation Systems, with respect to Water, Land and Air; Elements of Highway Traffic Engineering and traffic Control devices; Elements of Highway - Geometric and Structural Design.

### REFERENCE BOOKS :

1. *J. H. Patel & Dr. F. S. Umrigar*

*Basic Civil Engineering*

*Atul Prakashan, Ahmedabad*

2. *Dr. P. D. Deshpande*

*Basic Civil Engineering*

*Nirali Prakashan, Pune*

3. *Phadke, Phadke, Palwe*

*Elements of Civil Engineering*

*Nirali Prakashan, Pune*

4. *T. P. Kanetkar & Kulkarni*

*Surveying & Levelling Vol I*

5. *Arora and Bindra*

*Building Construction*

6. *Gilbert M. Masters*

*Introduction to Environmental Engineering and Science*

*Prentice Hall of India Pvt. Ltd., New Delhi*

7. *Khanna & Justo*

*Highway Engineering*

*Nem Chand & Brothers, Roorkee*

8. *Linsley and Franzini*

*Water Resources Engg.*

*Mc Graw Hill Publications*

9. *Modi P. N.*

*Irrigation Water Resources & Water Power Engineering*

*Standard book house, Delhi.*