BASIC CIVIL ENGINEERING

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**Prerequisite**
Nil

**PURPOSE**
To get exposed to the glimpses of Civil Engineering topics that is essential for an Engineer.

**INSTRUCTIONAL OBJECTIVES**
1. To know about different materials and their properties
2. To know about engineering aspects related to buildings
3. To know about importance of surveying and the transportation systems
4. To get exposed to the rudiments of engineering related to dams, water supply, and sewage disposal

**UNIT I- BUILDING MATERIALS** (6hours)

**UNIT II- MATERIAL PROPERTIES** (6hours)

**UNIT III- BUILDING COMPONENTS** (6hours)

**UNIT IV- SURVEYING AND TRANSPORTATION** (6hours)

**UNIT V- WATER SUPPLY AND SEWAGE DISPOSAL** (6hours)

**TEXT BOOKS**
REFERENCES

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PURPOSE
To develop knowledge of conventional and new materials of construction.

INSTRUCTIONAL OBJECTIVES
1. To learn the manufacturing process, types, applications and testing procedures for materials used for load bearing purpose.
2. To know about materials that is used for protection and functional purpose.
3. To impart knowledge about basis of recent paradigms, and new materials.

UNIT I - BASIC LOAD BEARING MATERIALS (6 hours)

UNIT II - ADVANCED LOAD BEARING MATERIALS (6 hours)

UNIT III- SPECIAL CONSTRUCTION MATERIALS (6 hours)

UNIT IV- NON LOAD BEARING MATERIALS (6 hours)

UNIT V- RECENT CONSTRUCTION MATERIALS (6 hours)

TEXT BOOKS

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### 15AR101 PRINCIPLES OF ARCHITECTURE

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**PURPOSE**
To instill a broad understanding about architecture in students of civil engineering

**INSTRUCTIONAL OBJECTIVES**

1. To create awareness about design criteria, building bye laws, development control rules & zoning regulations. Introduction to the basic architectural principles & imparting knowledge about building

2. To introduce the basic architectural principles in functional planning

3. To impart knowledge about building services.

**UNIT I-PLANNING ASPECTS & REGULATIONS (10 hours)**

Building types & design criteria - Space standards for residential, commercial & institutional categories. Building bye laws applicable for approval by the local governing body. Development control rules for Chennai metropolitan area.

**UNIT II-ARCHITECTURAL PRINCIPLES (10 hours)**

Introduction to architecture - elements of architecture - primary forms - organizing principles - proportion, scale, balance, symmetry, hierarchy, axis with building examples from historical & contemporary architecture.

**UNIT III-BUILDING SERVICES (10 hours)**

Integration of services in buildings - water supply & plumbing layout for a residential building - elevators & escalators - planning & installation - basic components of the electrical system for a residence - typical electrical layout diagram. Lay out of external services -water supply- sewage disposal-electrical cabling.

**TEXT BOOKS**


**REFERENCES**