



GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY

BUILDING MATERIALS AND CONSTRUCTION PLANNING

Course Code: GR15A2003
II Year I Semester

L:3 T:1 P:0 C:4

Prerequisites

- Knowledge of Building Materials
- Knowledge of Engineering Drawing

Course Objectives

- Graduates of the program will be able to utilize opportunities for a successful career in field of construction technology.
- Graduates of the program will have comprehensive knowledge in building materials and construction practice.
- Graduates of the program will be able to practice to find eco friendly building materials.

Course Outcomes

- Ability to apply knowledge of science and engineering for eco friendly construction.
- Ability to control cost of construction.
- Ability to create awareness about green building practice.

Unit-I

Building Stones, Bricks, Tiles: Stone- Building stones, classification of building stones, quarrying procedures, structural Requirement, dressing, and tools for dressing of stones. BRICKS-Composition of brick earth, manufacturing of brick, structural requirements, field and lab test. TILES - Types of tiles, manufacturing of tiles, structural requirements of tiles.

Unit-II

Cement, Lime, Admixtures: Ingredients of cement, manufacturing of cement, field and lab tests. ADMIXTURES - Mineral admixtures, chemical admixtures. LIME-Variou ingredients of lime, constituents of limestone and classification of lime, manufacturing of lime.

Unit-III

WOOD, GLASS, PAINTS: WOOD-Structure, types of wood, properties of wood, seasoning, defects, alternative material for wood. GLASS-Types of glasses, manufacturing of glass. PAINTS- Constituents of paints, types of paints. BUILDINGCOMPONENTS-Lintel, arches, staircase, floors, roofs, foundation, dcp. JOINARYS-Doors, windows, materials and types.



Unit-IV

Masonry and Finishing, Form Works

BRICK MASONRY- Types, bonds. STONE MASONRY- Types, composite masonry, concrete reinforced bricks, and glass reinforced brick. FINISHING SLOPE- plastering, pointing, and cladding- Types of ACP (Aluminum composite panel). FOAM WORKS - requirements, standards, staff holding, shoring, under pinning.

Unit-V

Building Services and Building Planning

BUILDING SERVICES- Plumbing services, water distribution, sanitary lines and fittings, ventilators, functional requirements, systems of ventilators, air conditioning essentials and types, acoustics. CHARACTERISTICS- Absorption, fire protections, fire hazards, classification of fire resistance materials and construction. BUILDING PLANNING - Principles of building planning, classification of building and building by-laws.

Teaching Methodologies

1. White board marker
2. PPT

Text Books

1. SK Duggal, Building Materials, New Age Publications 4th Edition, April, 2014.
2. B C Punmia, Ashok Kumar Jain and Arun Kumar Jain, Building Construction, Laxmi Publications (P) Ltd., New Delhi, 10th Edition, 2013.
3. P C Varghese, Building Construction, Prentice hall of India Private Ltd., New Delhi, 2nd Edition, 2007.

Reference Books

1. R. Choudly "Construction Technology" Vol. – 1 & 2, 2nd Edition, Longman, UK, 1987.
2. P C Varghese, Building Construction, Prentice Hall of India Private Ltd., New Delhi, 2nd Edition, 2007.