

GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for B.Arch.

THIRD SEMESTER

SUBJECT NAME: Building Construction-III

SUBJECT CODE: 1035002

Focus:

- Understanding basic Structural Systems, Structural Materials, Construction & erection process.
- Introduction to fundamentals of all types of services required in a building. Learning about various equipment and fittings available in the market. Preparing basic design layout of various services and typical details.

Content:

- New Materials and their use in Building Construction. Building Elements made out of wood, steel, PVC, aluminium etc.
- Dome, Vaults, Roof etc. construction methods and structural systems such as geodesic dome, space frame, prefabrication, etc.
- Steel Windows – Steel casement windows, with fixtures and fitting and methods of fixing.
- Timber Floors – Single, double and framed floors with joints between joist with wall plate, joist with beam and sub beam with main beam, strutting of joists, use of templates, for support.
- Timber Trusses – King post and queen post trusses with details of joints, alternative arrangements for tile and sheet roof covering, detail of eaves projection with soft boarding, Alternative detail of gutter at eaves, sprocket joint.

WATER SUPPLY, DRAINAGE AND SANITATION :

- Pipes and fittings, materials, size and classification.
- Different types of taps, toilet and kitchen fittings.
- Connection of lines to fittings.
- Under ground, overhead and internal storage tanks and supply lines.
- Pumping mechanisms.
- Design layout of water supply for a residence and apartment block, and calculation of supply requirements based on standards.
- Introduction to sanitation and its importance.
- Planning and layout of sanitary fittings in residences.

Drainage system for residences.

- Waste water drainage-traps of various types' details and use. ☐ Rain water disposal and roof drain.

Sewers details of construction, inspection chambers, trap chambers & Septic tanks.