

CE- 705 Elective- I (CE- 7104 Cost Effective & ECO-Friendly Construction)

UNIT-I

Concepts of energy efficient & environment friendly materials and techniques.

Cost effective materials :- Soil, Fly ash, Ferrocement, Lime, Fibres, Stone Dust, Red mud, Gypsum, Alternate Wood, Polymer.

Energy Efficient & Environment friendly building material products :-

Walls - Stabilised and sun dried, soil blocks & bricks, Solid & Hollow concrete blocks, stone masonry blocks, Ferrocement partitions. Roofs - Precast R.C. Plank & Joists roof, Precast channel roof, Precast L-panel roof, Precast Funicular shells, Ferrocement shells, Filler Slab, Seasal Fibre roof, Improved country tiles, Thatch roof, M.C.R. tile.

UNIT-II

Cost effective construction techniques and equipments :-

(a) Techniques :- Rat trap bond construction, Energy Efficient roofings, Ferrocement technique, Mud Technology. (b) Equipments :- Brick moulding machine, Stabilised soil block making machine and plants for the manufacturing of concrete blocks, M.C.R. tile making machine, Ferrocement wall panel & Roofing channel making machine, R.C.C. Chaukhat making m/c.

UNIT-III

Cost effective sanitation :-

- (a) Waste water disposal system
- (b) Cost effective sanitation for rural and urban areas
- (c) Ferrocement Drains

UNIT-IV

Low Cost Road Construction :-

Cost effective road materials, stabilization, construction techniques tests, equipment used for construction, drainage, maintenance.

UNIT-V

Cost analysis and comparison :-

- (a) All experimental materials
- (b) All experimental techniques