

CM652: Sustainable Construction

| Teaching Scheme | | | Credits | Marks Distribution | | | | Total Marks |
|-----------------|---|---|---------|--------------------|----|-----------------|----|-------------|
| L | T | P | | Theory Marks | | Practical Marks | | |
| | | | | ESE | CE | ESE | CE | |
| 3 | 2 | 0 | 5 | 70 | 30 | 30 | 20 | 150 |

Course Content:

| Sr. No. | Topics | Teaching Hrs. |
|-------------------|---|---------------|
| 1 | <p><u>Sustainable Planning:</u></p> <p>Energy Efficient Shelters, Housing Options Today, Site Planning and Use of On-Site Resources, Smaller Houses that Utilize Space and Materials More Efficiently, Working With Nature, Balancing Energy and Aesthetic Needs.</p> | 10 |
| 2 | <p><u>Sustainable Materials:</u></p> <p>Construction materials -locally available building materials- Soil, Fly ash, Ferro cement, Lime, Fibers, Stone Dust, Red mud, Gypsum, Alternate Wood, Polymer-ADOBE, Cob Rammed Earthlight Clay, Straw-Bale, Bamboo, Agro-Industrial Waste, Structural Properties Of Alternate Building Materials, Innovative Materials of CBRI.</p> | 10 |
| 3 | <p><u>Cost Effective Construction Equipment's:</u></p> <p>Equipment's-Brick moulding machine, Stabilized soil block making machine and plants for the manufacturing of concrete blocks, M.C.R. tile making machine, Ferro cement wall panel & Roofing channel making machine, R.C.C. Chaukhat making machine.</p> | 10 |
| 4 | <p><u>Cost Effective Construction Techniques:</u></p> <p>Construction Techniques-Innovative Techniques developed by CBRI, SERC for foundation, superstructure, roofing, pre-fabricated construction techniques, advantage of pre-fabrication areas where pre-fabrication can be introduced, modular contained earth, earth bag construction.</p> | 10 |
| Total Hrs. | | 40 |

Reference Books:

1. Lynne, Cassandra Adams "*Alternative Construction: Contemporary Natural Building Methods*", Soft cover, Wiley & Sons Australia, Limited, John, 2005.
2. Eugene Eccli, "*Low Cost, Energy efficient shelter for owner & builder*", Rodale Press, 1976.
3. Givoni, "*Man, Climate, Architecture*", Van Nostrand, New York, 1976.
4. Charles J. Kibert, "*Sustainable Construction: Green Building Design and Delivery*", John Wiley & Sons, 2005.