

GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for M. Arch - 2019

FIRST SEMESTER

Subject: Sustainable Materials and Technologies I

Course Code: X16104

Credits: 2

Course Objective: Traditional building wisdom and climate responsive design and use of materials and technologies

Course Contents:

This module covers traditional and conventional wisdom on building materials and construction techniques across the globe with focus on tropical countries, covering components of consideration such as, climatic influence on built form, materials. Technologies will be evaluated for modification/adoption in present day context .To introduce Eco Friendly Building Materials: Environmental impact study of building materials about composition, production and recycling, physical properties etc. Traditional, vernacular, advanced technological such as bamboo, cavity walls, core unit slabs, filler slabs etc. Embodied energy for materials like steel, fly ash bricks, gypsum, steam cured bricks, mud, eco-boards etc.,

References:

1. Wines James & Jodido Philip, "Green Architecture –
2. The Art of Architecture in the Age of Ecology", Tachen Publishers, New York, 2000.
3. Mackenzie Dorothy, "Green design: design for the Environment", Laurence King, London, 1997.
4. Farmer John & Richardson Kenneth, "Green Shift: Changing attitudes in architecture to the Natural World", Architectural Press, Boston, 1999.
5. The European Commission, "A Green Vitruvius: Principles and Practices of Sustainable Architectural Design", James & James, London, 1999.
6. Fred A. Stitt, "The Ecological Design Handbook", McGraw Hill, New York, 1999.
7. Scott Andrew, "Dimensions of Sustainability: Architecture, Form, Technology,
8. Environment & Culture", F&FN Spon, London, 1998
9. Earth Construction by Houben Hugo
10. Publications of BMPTC, Vastu Shilpa foundation