**GUJARAT TECHNOLOGICAL UNIVERSITY**
**BRANCH NAME: B. Arch**
**SUBJECT NAME: Green Architecture**
**SUBJECT CODE: 2X55012**
**4th Year, Semester: VIII**

**Prerequisite:**
It is assumed that students, taking this elective course, have studied subjects like climatology and landscapedesign in 3rd and 4th semesters as they cover basic aspects of sustainability in built environment.

**Rationale:**
To sensitize the students to the various aspects of sustainable and green building design in the context of global warming and climate change and to address the very process and tools of design to enable architecture that is environmentally friendly and sustainable

**Teaching and Assessment Scheme:**

| Teaching Scheme | | | Credits | Examination Marks | | | | Total Marks | University Exam Type |
|---|---|---|---|---|---|---|---|---|---|
| Field work | Lectures | Studio | C | External exam | | Internal exam | | | |
| | | | | (ESE)Theory | (ESE) Viva | (PA)Theory | (PA)Viva | | |
| NA | 02 | 02 | 04 | NA | 50 | NA | 50 | 100 | VIVA |

**Content:**

| Sr. No. | Content | Total Hours* | % Weightage* |
|---|---|---|---|
| 1 | **INTRODUCTION -**Attitudes to architecture: a historical perspective | 12 | 15% |
| 2 | **SUSTAINABLE AND GREEN BUILDING DESIGN CASE STUDIES -** Instrument and natural case studies to investigate and apply various studio exercises on Green Building Design. | 14 | 25% |
| 3 | **VARIOUS PARADIGMS OF GREEN ARCHITECTURE –** Biomimicry, NZEB, Eco House, Passive House, Active House, Regenerative design, Resilient architecture, Bioclimatic architecture etc case studies to investigate and apply in studio exercises of subject. | 14 | 25% |
| 4 | **ASSESSMENT CRITERIAS –** Concepts of LEED, GRIHA, ECBC, NZEB, Zero emission buildings etc, to be understood based on comparison of various criteria. | 10 | 10% |
| 5 | **ENVIRONMENTAL IMPACT OF BUILDING MATERIALS -** Measuring the impact of building materials- calculating - recycling - processing - time and embodied energy- embodied energy of different building materials- low energy building and masonry materials- life cycle analysis- Case studies and analysis | 14 | 25% |

*: indicative

**References:**


- Design With Climate by Victor Olgyay
- Green Architecture, J.Michael & J.Crosbie
- The new Eco architecture, Porteous Colin
- Sustainable Design- The science of sustainability and Green Engineering; Daniel Vallero and Chris Brasier; Wiley;

2008
- Sustainable Architecture and High Technology- Eco Tech; Catherine Slessor; Thames and Hudson; 1997
- Sustainable architecture and Urbanism; Dominique Gauzin- Muller; Birkhauser; 2002
- Eco design - A Manual for Ecological design, Ken Yeang; Wiley- Academy; 2006
- Ecohouse: A design Guide; Elsevier Architectural Press; Sue Roafet all; 2007
- Energy performance of building, Biard G.
- Biomimicry in Architecture: Michael Pawlyn: RIBA Publication; 2011
- The whole building handbook : how to design healthy, efficient, and sustainable buildings; Varis Bokalders and Maria Block; Earthscan; 2012

**List of Projects/Assignments*:**

Lectures/Tutorial work shall consist of presentations on various topics of the subject. AV projects may be introduced to students for documenting best practices and advances through case studies. A group discussion or forum may be organized for discussion on various aspects of the subject.

*- this is suggestive for common purpose. Faculty may decide on this, considering student group and institution philosophy.