

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**Syllabus for M. Arch - 2019**  
**FIRST SEMESTER**  
**Subject: Building Energy Simulation**

**Course Code: X16105**

**Credits:3**

**Course Objective:** This module concentrates on learning and applying Building Energy Simulation software. Estimating Thermal performance of buildings including day lighting and ventilation

**Course Contents:**

Introduction of simulation strategies related to thermal, visual, embodied energy performance of different components and parameters, energy analysis for building covering approximate methods, correlation methods, analytical methods, and numerical methods and preparing programmes on mat lab (soft ware). Application of open source energy simulation software to studio program with focus on evaluating energy efficiency of building.

**References:**

1. Building Energy Modeling with Open Studio, A Practical Guide for Students and Professionals
2. Energy Simulation in Building Design, JA Clarke, 2 edition, 2001
3. Building Energy Simulation : A Workbook Using DesignBuilder (TM), Vishal Garg Jyotirmay Mathur , Aviruch Bhatia
4. Energy performance modelling of buildings using dynamic simulation
5. Modelling, Design and optimization of net zero energy buildings. Edited by Andreas Athienitis (Editor), William O'Brien (Editor)
6. Energy efficient buildings by Wagner Walter
7. The architecture of Energy by Hawkes Dean and Owets Janet
8. Energy Efficient Buildings in India by Milli Majumdar