

**VASAVI COLLEGE OF ENGINEERING (Autonomous)**  
IBRAHIMBAGH, HYDERABAD – 500 031

**DEPARTMENT OF CIVIL ENGINEERING**  
**GREEN BUILDINGS (Open Elective-I)**

**SYLLABUS FOR B.E. III-SEMESTER**

L : T : P (Hrs./week): 2 : 0 : 0	SEE Marks:60	Course Code: <b>U18OE310CE</b>
Credits : 2	CIE Marks:40	Duration of SEE: 3 Hrs

<b>COURSE OBJECTIVES</b>	<b>COURSE OUTCOMES</b>
Objectives of this course are to:	Upon the completion of this course the students will be expected to:
1. Learn the principles of planning and orientation of buildings.	1. Explain the principles of building planning, its bylaws and provide facilities for rainwater harvesting
2. Environmental implications of natural and building materials along with green cover	2. Relate safety to Green Technology
3. Acquire knowledge on various aspects of green buildings	3. Understand the concepts of green buildings
	4. Understand rating systems of GRIHA and LEED

**UNIT-I**

**Planning of building:** Principles of planning, Relevant building bylaws, site selection for buildings, orientation of buildings, common errors in planning, Provision of rain water harvesting

**UNIT-II**

**Buildings Energy-Implications:** Environmental implications of buildings energy, carbon emissions, water use, waste disposal; Building materials: sources, methods of production and environmental Implications. Green cover and built environment

**UNIT-III**

**Green Building Technologies:** Introduction- Necessity - Concept of Green building. Principles of green building – Selection of site and Orientation of the building – usage of low energy materials – effective cooling and heating systems – effective electrical systems – effective water conservation systems

**UNIT-IV**

**Certification Systems:** - Certification systems- Green Rating for Integrated Habitat Assessment (GRIHA) and Leadership in Energy and Environmental Design (LEED), case studies

**Learning Resources:**

1. Kumara Swamy N.Kameswara Rao A., Building Planning And Drawing, Charotar, Publications, 2013.
2. Shahane, V. S, "Planning and Designing Building", Poona, Allies Book Stall, 2004.
3. Michael Bauer, Peter Mösele and Michael Schwarz "Green Building – Guidebook for Sustainable Architecture" Springer, 2010.
4. Tom Woolley, Sam Kimmins, Paul Harrison and Rob Harrison "Green Building Handbook" Volume I, Spon Press, 2001.
5. Mili Majumdar, "Energy-efficient buildings in India" Tata Energy Research Institute, 2002.
6. TERI "Sustainable Building Design Manual- Volume I & II" Tata Energy Research Institute, 2009.

The break-up of CIE: Internal Tests + Assignments + Quizzes

1	No. of Internal Tests	:	2	Max. Marks for each Internal Tests	:	30
2	No. of Assignments	:	2	Max. Marks for each Assignment	:	5
3	No. of Quizzes	:	2	Max. Marks for each Quiz Test	:	5

Duration of Internal Tests : 90 Minutes