



## School of Planning and Architecture: Vijayawada

(An institution of National Importance under the Ministry of Education, Govt. of India)

S.No. 4/4, ITI Road, Vijayawada – 520 008, Andhra Pradesh, India

### Department of Architecture

**Course:** MSAR115 - Environmental Codes and Energy Ratings

**Instructors:** Karthik Chadalavada

**Class:** I st Yr M. Arch I Sem A.Y. 2023-24

**Internal Assessment:** 50

**External Theory Exam:** 50

**Total Marks:** 100

**Credits:** 3

**Contact Periods/ week:** 03 periods (50 min.each)

**Time Table:** Tuesday (09:00 AM - 11:45 PM)

**Attendance:** Min 75%

**Min. Passing Marks:** 50% each in Internal & External Assessment, 50% in Aggregate

**Objective:**

To expose students the various environmental codes and energy ratings as on date.

**Out Line of the Course:**

Awareness about applicable environmental codes, and relevant energy rating system procedures and protocols shall be explored.

### LECTURE PLAN

WEEK	DATE	TOPIC OF CLASS LECTURE & DISCUSSION	REFERENCES / REMARKS
1	Week-1	<b>Introduction to the course and subject</b> Sustainable Architecture/Building design Origin, Definitions, Concepts & Definitions.	Lecture-1
2	Week-2	Outline understanding of UN frame work on climatic change, Kyoto protocol, Earth Summit, National policies of Sustainable & Energy Efficient Development	Lecture-2
3	Week-3	Introduction and guidelines of latest ECBC, The Indian Green Building Council and LEED,	<b>Internal Assessment-1</b> <b>To make a report by refering journals/research papers in own words and should have APA Style of referencing:</b> 1) Write in detail about UN frame work convention of climate change 2) What is Kyoto protocol & Earth Summit. Explain about them briefly 3) Write the different national policies on sustainable and energy efficient development.
4	Week-4	The Energy and Research Institute and the GRIHA System, policy guidelines of sustainable architecture etc.	Lecture-4
5	Week-5	Mid-semester Examination	<b>Mid-semester Examination</b>
6	Week-6	IGBC Training Modules	Lecture-5
7	Week-7	Mandatory requirements, the Energy Conservation Act, 2001 (52 of 2001) its legal framework	Lecture-6

8	Week-8	Energy Conservation Act Institutional arrangement and a regulatory mechanism at the Central and State level to embark upon energy efficiency drive in the country	Lecture-7 Mid-Semester Exam
9	Week-9	The Energy Conservation (Amendment) Act, 2010- Main Amendments, Energy Efficiency Measures such as 1.Standard and labelling programme, 2.Demand side management, 3. Energy Conservation Building Code (ECBC),	Lecture-8
10	Week-10	4.Bachat Lamp Yojana (BLY), 5. Strengthening Institutional Capacity of State Designated Agencies (SDAs), 6.State Energy Conservation Fund (SECF), 7.Energy Efficiency in Small and Medium	Lecture-9
11	Week-11	8.Professional certification and accreditation, 9.School Education Programme, 10. Indo-German Energy Efficiency Project, 11.Energy Conservation Awards	Lecture-10
12	Week-12	National mission for Enhanced Energy Efficiency (NMEEE), Perform, Achieve and Trade (PAT), Market Transformation for Energy Efficiency (MTEE),	Lecture-11 Internal Assessment-3
13	Week-13	Energy Efficiency Financing Platform (EEFP), Framework for Energy Efficient Economic Development (FEEED),	Lecture-12
14	Week-14	Partial Risk Guarantee Fund (PRGF), Venture Capital Fund for Energy Efficiency (VCFEE).	Lecture-13
15	Week-15	The Environment (protection) Act 1986, rules to regulate environment pollution and Prevention, control and abatement of environmental pollution and institutional mechanism.	Lecture-14
16	Week-16	Presentation of Assignemnts/ Internal Examination	<b>Internal Assessment-III To Carrout detailed GRIHA/IGBC Green Rating Self Evaluation for an Existing Building/Proposed Design in a presentation format</b>

S.No.	Category of Evaluation	Marks	Note
1	Assessment – I:	15	<i>The Marks allotted at each stage is tentative. Categories of evaluation may be increased or decreased (merged) on need-basis</i>
2	Mid semester exam	20	
3	Assessment – III:	15	

**References:**

1. International Building Code – 2012., International Code Council., 2011.
2. National Building Code – 2016., Bureau of Energy Efficiency., Ministry of Power., Govt. of India.
3. Linda Reeder (2010)., ‘Guide to Green Building Rating System’, Wiley.
4. The Environment (protection) Act 1986. Link: [https://indiacode.nic.in/bitstream/123456789/4316/1/ep\\_act\\_1986.pdf](https://indiacode.nic.in/bitstream/123456789/4316/1/ep_act_1986.pdf) – accessed on 06.07.2019.
5. The Energy Conservation (Amendment) Act 2001, and Amendments - <http://extwprlegs1.fao.org/docs/pdf/ind167070.pdf> – accessed on 06.07.2019.
6. Energy conservation building code 2017. Link: [https://beeindia.gov.in/sites/default/files/BEE\\_ECBC%202017.pdf](https://beeindia.gov.in/sites/default/files/BEE_ECBC%202017.pdf) – accessed on 06.07.2019.
7. Eco-Niwas Samhita 2018. Link: [https://www.beeindia.gov.in/sites/default/files/ECBC\\_BOOK\\_Web.pdf](https://www.beeindia.gov.in/sites/default/files/ECBC_BOOK_Web.pdf) – accessed on 06.07.2019.
8. National building code – India. NBC 2016 Vol 01 - Link: <https://ia800601.us.archive.org/13/items/nationalbuilding01/in.gov.nbc.2016.vol1.digital.pdf> . NBC 2016 Vol 02 - Link: <https://ia800601.us.archive.org/11/items/nationalbuilding02/in.gov.nbc.2016.vol2.digital.pdf> – accessed on 06.07.2019.
9. International building code. IBC 2018. Link: <https://www.ci.independence.mo.us/userdocs/ComDev/2018%20INTL%20BUILDING%20CODE.pdf> – accessed on 06.07.2019.
10. International Energy Conservation Code.IECC2018 Link: <https://basc.pnnl.gov/resources/2018-iecc-international-energy-conservation-code> – accessed on 06.07.2019.
11. Bureau of Energy Efficiency, Ministry of Power, Govt. of India. Link: <https://beeindia.gov.in/> – accessed on 06.07.2019.
12. LEED. Link: <https://igbc.in/> – accessed on 06.07.2019.
13. GRIHA. Link: <http://www.grihaindia.org/> – accessed on 06.07.2019.

**Course Instructors:**

sd/-  
(Karthik Chadalavada)

**Head of Department:**

sd/-  
(Dr. D. Srinivas)