School of Planning and Architecture: Vijayawada
(An institution of National Importance under the Ministry of Human Resource Development, Govt. of India)
Survey No.4/4, ITI Road, Vijayawada-520008, Andhra Pradesh, India

Department of Architecture

Course: **MBEM 1212; HEALTHY BUILDING (ELECTIVE)** **Class:** Ist Yr, M. Arch II Sem A.Y. 2023-24
Instructors: Dr. Janmejoy Gupta **Internal Assessment:** 50
External Theory Exam: 50
Contact Periods/ week: 03 periods.(50 min each) **Total Marks:** 100
Time Table: Thursday (9 AM-11:45 AM) **Credits:** 2
Attendance: Min 75% **Min. Passing Marks:** 50% each in Internal & External Assessment, 50% in Aggregate

Objective: To develop a thorough understanding amongst the students with emphasis on application of correct relevant principles for creating healthy indoor environments taking care of basic building services for both naturally ventilated and mechanically

Out Line of the Course: As per Syllabus

LECTURE PLAN

WEEK	DATE	TOPIC OF CLASS LECTURE & DISCUSSION	TOPIC OF STUDIO WORK& ASSIGNMENTS / REMARKS
1	Week-1 - 4/01/23	Basics of Healthy Buildings, Concept of Sick Buildings, Basics of Indoor Environment Quality. (IEQ)	Lecture and PPT
2	Week 2-11/01/23	Improving IEQ through architectural interventions.	Lecture and PPT
3	Week-3-18/01/23	Concepts of Volatile Orga nic Compounds, (VOC), materials with high VOC and Low VOC, Healthy and Unhealthy Building Materials.	Lecture and PPT
4	Week-4 -25/01/23	Health effects on occupants of sick buildings.	Lecture
5	Week-5-08/02/23	Alternatives to unhealthy building materials.	
6	Week-6 15-02-23	STUDY TOUR AS PER ACADEMIC CALENDER	
7	Week-7 22/02/23	Importance of Well designed Plumbing Systems for healthy building environment	Lecture and PPT
8	Week-8 -29-02-23	Internal Assessment - 1	Internal Assessment -1
9	Week-9 -7-03-23	How to ensure proper Plumbing System design-Basics. Types of Traps to be used, Types of precautions to be taken. Overview of Proper Other Services Deign.	Lecture
10	Week-10 14-03-23	Basics of Natural Ventilation. Significance of Natural Ventilation and Its role in Thermal Comfort amd IEQ. Site and Building Level Guidelines. Introdcuction to NBC 2016, SP-41, ASHRAE 62.1 and 62.2.	Lecture and PPT
11	Week-11 21-03-23	Standards and Benchmarks for Natural Ventilation. Air Flow Calculations and Metrics	Lecture, PPT and Excel Based Calculation Sheet

12	Week-12 28-03-23	HVAC Proper Design Basic Criterion for maintaining proper IEQ.	Lecture and PPT
11	Week-13-04/04/23	Discussion on proper duct sizing and maintaining proper air flow velocity rates, etc.	Lecture and PPT
12	Week 14- 11/04/23	Holiday	Holiday
13	Week-15- 18/04/23	WELL Building Standards. IEQ related points covered under LEED and GRIHA points.CIBSE , BREEAM Requirements wrt IEQ	Lecture & PPT
14	Week-16-Extra Class if any	Added discussion reg proper HVAC design requirements in hospitals etc reg appropriate filter use (HEPA, etc)	Lecture & PPT

S. No.	Stages of Evaluation	Weightage
1	First stage: Assessment –1	25
2	Second stage: Assesment-2	25
	Total	50

Reference Books:

1. The Whole Building Handbook - How to design Healthy, Effcient and Sustainable Buildings (Bokalders and Block), RIBA Publishing,Earthscan, Sterling,VA, 2010. 2. Daylighting, Architecture and Health (Building Design Startegies), Mohammed Bouberki, Architectural Press, Elsevier,2008 (first print) 3. ASHRAE 62.1 and 62.2 Manuals on IAQ, 4. IGBC-LEED India and GRIHA Manuals, 5. ECBC-2017.

Head of Department (I/C):

Concerned Faculty: Dr Janmejoy Gupta