

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

Department of Architecture

Course:	ARC 216 Climate and Built Forms	Class: Yr : B. Arch III Sem A.Y. 2026-27 A-Section
Instructors:	Prof. Dr. Shanmuga Priya G	Internal Assessment: 50 External Theory Exam: 50
Contact Periods/ week: 03 periods		Total Marks: 100
Time Table:	Tuesday 9:00 am to 11:45 am	Credits: 3
Attendance: Min 75%		Min. Passing Marks: 50% each in Internal & External Assessment, 50% in Aggregate
Objective: • To list the different elements of climate and classify them. • To identify the various aspects affecting thermal-comfort. • To analyze the impact of climatic forces on built-form. • To assess the effect of site, sun and wind in climate-responsive architecture. • To design appropriate shelters for different climatic regions		

LECTURE PLAN

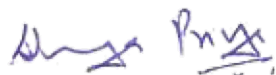
WEEK	DATE	TOPIC OF CLASS LECTURE & DISCUSSION	TOPIC OF ASSIGNMENTS and CLASS EXERCISES / REMARKS
1	21-Jul-26	Introduction to Climate responsive architecture; Climate and Weather; Elements of Climate	
2	28-Jul-26	Classification of Climates : Coppen Classification and Atkinsons Classification; Classification of Tropical Climates.	In Class Exercise: Sun Path Diagram
3	04-Aug-26	Human Comfort, Thermal Comfort Factors - Climate responsive Architecture	In Class Exercise: Sun Path Diagram
4	11-Aug-26	Bioclimatic Chart; Psychrometric chart	Climate data sources - Introduction
5	18-Aug-26	Microclimate- Influencing factors; Site Selection and Planning,	Selection of city and building for Analysis
6	25-Aug-26	Site Planning - Building orientation and Form	In Class Exercise: Sun Path Diagram - Obtaining climate data for a chosen city
7	01-Sep-26	Site Planning - Effect of landscaping	In Class Exercise: Sun Path Diagram - Finding Over Heated Period in a selected period
8	08-Sep-26	Solar Controls - Horizontal and Vertical Shadow angles; design of shading devices	Inclass Exercise: Horizontal and vertical sun angle and Shading Devices
9	15-Sep-26	Basic Principles of Natural Ventilation; Stack effect and thermally induced air currents; Factors affecting air flow	Overview -Instruments available in Climatology lab for measuring Air temperature, Humidity etc. and Introduction to Assignment 1

10	22-Sep-26	Mid Semester Examination	
11	29-Sep-26	Air flow around Buildings; Building Examples	In Class Exercise - Discussion
12	06-Oct-26	Solar Control - Shading Devices ; Day lighting Principles.	In Class Exercise - Submission
13	13-Oct-26	Climate responsive design - Hot Dry Climate - Case Studies	Assignment I -Submission and Presentation.
14	20-Oct-26	Climate responsive design - Warm-Humid climate - Case Studies	Assignment I - Presentation.
15	27-Oct-26	Closed Holiday - Dussheera	
16	03-Nov-26	Climate responsive design - Cold Climates and composite climates - Case Studies	Assignment I - Presentation.
17	10-Nov-26	Review of Key Concepts, Web Tools & Software, Applications and Case Studies, and Resources for Further Learning	

S. No.	Stages of Evaluation	Weightage
1	In Class Exercises	20
2	Second stage: Mid-semester Examination	20
3	Assignments I	10
	Total	50

Reference Books:

1. Narashimhan; An Introduction to Building Physics.
2. O.H. Koenigsberger and others, Manual of Tropical Housing and Building – Part I – Climatic Design, Longmans , 1980.
3. M.Evans- Housing Climate & Comfort – Architectural Press, London, 1980.
4. B. Givoni, Man, Climate and Architecture, Applied Science, Banking Essex, 1992. Donald Watson and Kenneth Labs; Climatic Design – McGraw Hill Book Company – New York – 1983
5. Krishan, A et.al(2001), Climate Responsive Architecture: A Design Handbook For Energy Efficient Buildings, McGraw Hill



Course Instructors:
Dr. Shanmuga Priya G

Head of Department