



GUJARAT TECHNOLOGICAL UNIVERSITY
Syllabus for Diploma of Vocation (D.Voc), 5th Semester
Branch: Architecture Assistantship
Subject Name: Environmental Science and Ecology
Subject Code: 1250603

Type of course: Core

Focus:

To develop the knowledge required for understanding the influence of climate on architecture. Understanding environmental issues, ecology, and ecosystem.

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical Marks		
				ESE (E)	PA (M)	ESE (V)	PA (I)	
3	0	0	3	50	0	0	0	50

L- Lectures; T- Tutorial/Teacher Guided Student Activity; P- Practical; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment

Content:

Sr No.	Contents:	Hrs.	Module % Weightage
1	• Environment, ecology, ecosystem with cardinal principles and natural cycles.	6	14
2	• Introduction – elements of climate, measurement, and representations of climate data. Classifications of tropical climates, major climatic zones of India.	6	14
3	• Earth Sun relationship – formation of seasons, formation climatic zones (hot dry, warm humid, cold and arid)	6	14
4	• Thermal comfort – vasomotor adjustments, thermal balance of human body, building heat	6	14
5	• Shading devices - Sun Path Diagrams, use of solar charts in climatic design.	6	14
6	• Natural ventilation – physiological cooling, supply of fresh air and cross ventilation	8	20
7	• Site climate: effect of landscape elements on site / microclimate	4	10
	Total	42	100

Reference:

- Koenigsberger- Manual of Tropical Housing and Building.

Suggested Specification table with Marks (Theory):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
5	10	15	5	5	10

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create and above levels (Bloom’s Taxonomy)

Course Outcomes:



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SR NO	CO Statement	Marks % weightage
1	To understand the various terms and its impact.	20
2	To understand different climate, season, and the representation of the climatic data.	20
3	To understand Thermal comfort and its relation to human body.	20
4	To develop technical understanding of diagrams and its application in design.	30
5	To understand the relation of landscape and the climate.	10

Projects: Application of climatic consideration with help of various charts and methods in ongoing design studio projects.

Method:

Theory Lectures and showing case studies through audio & visual presentations.

Laboratory Work:

Visit to Climate lab of Agriculture Institute, Vasad

List of Open-Source Software / Learning website:

Students must refer to following sites to enhance their learning ability.

- 1) <https://bisag-n.gov.in>
- 2) <https://www.climate.gov.in>
- 3) <https://mausam.imd.gov.in>
- 4) <https://moef.gov.in>