



Date:	REGISTRATION OF COURSES	RESPONSIBLE OF REGISTRATION:
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AREA OF KNOWLEDGE	SUB-AREA	UNDERGRADUATE	POSTGRADUATE
BASIC SCIENCES			
ECONOMICS AND SOCIAL SCIENCES			
HEALTH SCIENCES			
ENGINEERING, ARCHITECTURE AND TECHNOLOGY	ARCHITECTURE	X	
EDUCATION SCIENCES			
HUMANITIES AND ARTS			
AGRICULTURAL AND SEA SCIENCES			
MILITARY ARTS AND SCIENCES			
SAFETY AND CIVIL PROTECTION			
INTERDISCIPLINARY			
OTHERS			

ADSCRIPTION OR BRANCH (ES):

FACULTY	Architecture and Urbanism
SCHOOL	Architecture
INSTITUTE	
DEPARTMENT	Environmental Conditioning
OTHERS	

COURSE:

NAME	CLIMATE AND DESIGN I (82)
CODE	4125
EXECUTIVE UNIT	
CLASSIFICATION	Elective – Theoretical - Practical
APPROVAL DATE	
UPDATE DATE	
APPROVAL AUTHORITY	
CREDIT UNITS	Three (3)
HOURS/WEEK	3 h/ week
REGIMEN	Semi-Annual
ACADEMIC PERIODS	Regular
REQUIREMENTS	Human Settlements
PROFESSOR	Sector Professors



CONTENTS

1. Introduction to climate and design (12 h)

- 1.1. Environment and architecture. Aspects of the problematic: climate-buildings.
- 1.2. Traditional buildings and the climate.
- 1.3. Tropical climate modalities: warm-dry, warm-wet, coastal-dry and mountain climate.

2. Climatic elements to consider in thermic design (3 h)

- 2.1. Definitions of climatic elements that effect the thermic comfort.
- 2.2. Basic physical concepts.

Practice: Interpretation and handle of climatic information.

3. The man and climate (6 h)

- 3.1. Thermic balance mechanisms
- 3.2. Thermic comfort
- 3.3. Thermic rates and its employment

Practice: Employment of thermic rates for the calculation of effective temperatures and comfort zones. Design recommendations.

4. Solar protection (6 h)

- 4.1. Variants in the entrance of solar radiation.
- 4.2. Solar radiation entrance in Venezuela.
- 4.3. Sun path chart.
- 4.4. Procedure to define the sun shading elements.
- 4.5. Solar protection systems.

Practice: Handle of sun path chart. Calculation of the sun shading elements.

5. Thermic isolation (6 h)

- 5.1. Isolation in thermic control.
- 5.2. External and internal superficial temperatures.
- 5.3. Thermic behaviour of materials.

Practice: Thermic design of walls and roofs.

6. Natural ventilation (6 h)

- 6.1. Natural ventilation in the comfort and hygiene of the spaces.
- 6.2. Effects of design in natural ventilation.
- 6.3. Winds as alternative energy source.
- 6.4. Effects of wind loads over buildings.

Practice: calculations for estimation minimal openings.



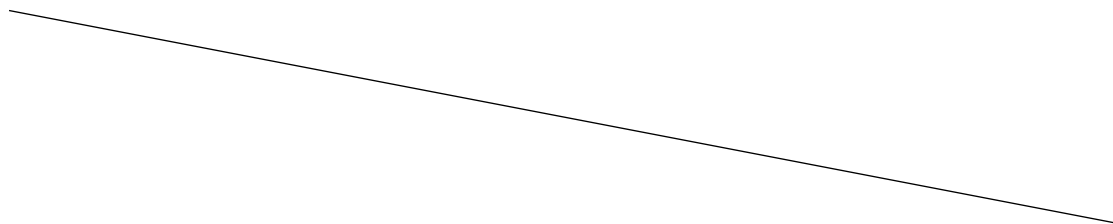
LEARNING OBJECTIVES

That the student be capable to:

- Identify the climate-buildings problematic
- Value the bioclimatic aspects in building design.
- Recognize the link between the tropical climate modalities and the constructive typologies.
- Identify the climatic elements that affect the thermic comfort.
- Interpret the climatic information.
- Analyse and quantify the relations between the climatic variables values and thermal sensation.
- Elaborate criteria and recommendations of bioclimatic design.
- Know the behaviour of solar radiation in Venezuela
- Handling of the procedures that allows the dimensioning of the solar protection elements.
- Estimate the importance of thermic radiation in comfort
- Handle the procedure for the thermic design of walls and roofs.
- Know diverse aspects of design linked to wind.
- Identify the design effects in the behaviour of natural ventilation.

INSTRUCTIONAL STRATEGIES

The course has a theoretical-practical character, with an approximate relation between both components of 1:2



TEXTBOOKS (If possible, according to contents)

