



## Course Syllabus

<b>Course Code</b>	<b>Course Title</b>	<b>ECTS Credits</b>
ARCH-232	Space and Light	4
<b>Prerequisites</b>	<b>Department</b>	<b>Semester</b>
ARCH-201	Architecture	Spring
<b>Type of Course</b>	<b>Field</b>	<b>Language of Instruction</b>
Required	Architecture	English
<b>Level of Course</b>	<b>Lecturer(s)</b>	<b>Year of Study</b>
1 <sup>st</sup> Cycle	Dr Petros Lapithis	2 <sup>nd</sup>
<b>Mode of Delivery</b>	<b>Work Placement</b>	<b>Corequisites</b>
Face-to-face	N/A	-

### Course Objectives:

The main objectives of the course are to:

- Introduce students to the principles of natural light and its interaction with visual perception and aesthetics.
- Study, analyze and criticize the basic functions of lighting as a design element.
- Define colour, light sources, measurement and control as they affect the interior and exterior environment and to use this knowledge creatively in designing projects.
- Encourage students to explore how the luminous aspects of space may control subjective mood and convey symbolic values.
- Comprehend the value of light, as an essential element of design. Rethink its role in design
- Use this knowledge creatively in designing projects.
- Expose students to design factors affecting indoor comfort and explore concepts, structures and techniques that lie behind the realization of energy conscious design.

### Learning Outcomes:

After completion of the course students are expected to be able to:

1. Illustrate the principles of natural light and its interaction with visual perception and aesthetics.
2. Analyze and criticize the basic functions of lighting as design element.
3. Predict how the luminous aspects of space can control subjective mood and convey symbolic values.

4. Solve the physical particularities with appropriate technological applications towards functional resolutions so as to condition for comfort and climatic response.
5. Develop architectural designs that satisfy both aesthetic and technical requirements

**Course Content:**

- Sunlight prediction techniques. Daylighting simulation. Redirection of daylight techniques (such as light shelves, mirror louvers, prismatic glazing, etc).
- Bioclimatic Design: An introduction to the bioclimatic design
- Passive Solar Heating: Domestic and small scale buildings.
- Passive Cooling Design: Prevention of overheating, Passive cooling strategies and techniques.
- Natural ventilation systems – basic design requirements (extract ventilation, whole building ventilation, purge ventilation, integration with other aspects of building design)
- Control of summer overheating (cooling potential of natural ventilation – calculations, thermal performance of building fabric, solar control, internal gains, comfort expectations)
- Driving forces for natural ventilation – wind (wind speed and its direction relative to the building, shape of the building, wind turbulence), combined wind and stack effect (basics)

**Learning Activities and Teaching Methods:**

Lectures, Studio Presentations, Studio Tutorials, Practical Exercises and Assignments, Projects

**Assessment Methods:**

Research assignment 1  
 Research assignment 2  
 Project Assignment- Midterm  
 Project Assignment- Final  
 Attendance and Participation

**Required Textbooks / Readings:**

Title	Author(s)	Publisher	Year	ISBN
Bioclimatic Architecture in Cyprus	Lapithis Petros	PCA press, Nicosia	2018	978-9963-9789-8-4

**Recommended Textbooks / Readings:**

<b>Title</b>	<b>Author(s)</b>	<b>Publisher</b>	<b>Year</b>	<b>ISBN</b>
Designing with light: the creative touch	King, C.	Rizzoli, New York	1997	0866365826
The Architecture of Light	Russell, S	Conceptnine	2008	0980061709
Stillness and Light : The Silent Eloquence of Shaker Architecture.,	Plummer, H.	Bloomington, IN Indiana University Press.	2009	9780253353627