



University of Nicosia, Cyprus
ARCH-523 Energy Efficient Buildings

Course Code	Course Title	Credits (ECTS)
ARCH-523	Energy Efficient Buildings	10
Department	Semester	Prerequisites
Architecture	spring	none
Type of Course	Field	Language of Instruction
Required for concentration: sustainable architecture	MA Architecture	English
Level of Course	Year of Study	Lecturer
2 nd cycle	1 st	Petros Lapithis
Mode of Delivery	Work Placement	Co-requisites
face-to-face	N/A	None
Objectives of the Course:		
<ul style="list-style-type: none">• to create resource-efficient structures that are comfortable and healthy.• minimising non-renewable resource use, while considering the need to create healthy environments.• Develop student's ability to assess environmental issues related to building performance.• To learn about energy efficiency, measurement and control as they affect the interior and exterior environment and to use this knowledge creatively in designing projects.• Develop the students capacity to integrate energy efficiency issues within an early stage of building design• To examine contemporary perspectives on the relationship between human behaviour, designed environments and energy efficiency.• To expose students to design factors affecting indoor comfort and explore concepts, structures and techniques that lie behind the realization of energy conscious design.• To provide a practical and scientific understanding of the impact of climate on building design and the use of energy efficient building design principles for building design and energy rating.		
Learning Outcomes:		
After completion of the course students are expected to be able to: <ul style="list-style-type: none">• create resource-efficient structures that are comfortable and healthy.• Identify issues of energy management, light, temperature, air quality and		

<p>psychological aspects of structures that affect health.</p> <ul style="list-style-type: none"> • use non-renewable resource use, while considering the need to create healthy environments. • envelope design, energy use and production, alternative energy sources and indoor/outdoor environmental quality. • To study, analyze and criticize the basic functions of energy efficiency as design element. • To learn about energy efficiency, measurement and control as they affect the interior and exterior environment and to use this knowledge creatively in designing projects. • Adequate knowledge of the physical problems and technologies and of the function of buildings so as to provide them with internal conditions of comfort and protection against the climate. • The exploration of building technology, through the use of energy efficient systems
<p>Course Contents:</p>
<ul style="list-style-type: none"> • resource-efficient structures that are comfortable and healthy. • energy management, light, temperature, air quality and psychological aspects of structures that affect health. • minimising non-renewable resource use, while considering the need to create healthy environments. • envelope design, energy use and production, alternative energy sources and indoor/outdoor environmental quality. • Energy efficiency control • Site visits to ongoing construction sites and completed buildings. Surveying, measuring, observing, on-site tutoring • Case-study of building technology. Systems/methods/performance/energy conservation/concepts, from selected published projects • Lectures and Readings • Shows a practical and scientific understanding of the impact of climate on building design and the use of energy efficient building design principles and software for building design and energy rating. • Advanced problems in design dealing with complex and environmental problems emphasizing the planning of large scale institutional and public buildings.
<p>Learning activities and Teaching Methods:</p>
<ul style="list-style-type: none"> • Practical Exercises and Assignments • Projects • discussions with class participation • Lectures • studio presentations • studio tutorials • Site visits
<p>Assessment Methods:</p>

- Problem analysis
- research
- conceptual development,
- project development
- Quality of the final product and presentation.
- Knowledge of chosen thesis topic.
- Mid-Term
- Final Project In-class student presentation
- final exam

Recommended Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
Waybe Forster, Dean Hawkes	Energy Efficient Buildings: Architecture, Engineering, and Environment	W. W. Norton & Company	2002	0393730921
Klaus Daniels	Advanced Building Systems	Birkhauser	2003	3-7643-6723-7
Andrea Deplazes	Constructing Architecture, Materials Processes Structures	Birkhauser	2005	10:3-7643-7189-7
Berge, B	The Ecology of Building Materials	Architectural Press UK	2000	
Cotton-Winslow,	Environmental design: Architecture and technology	PBC International NY	1995	
The European Commission	A Green Vitruvius	James & James	2001	