

Course unit title:	Building Technology and Pathology		
Course unit code:	CE220		
Type of course unit:	Compulsory		
Level of course unit:	Bachelor (1st Cycle)		
Year of study:	2		
Semester when the unit is delivered:	4 (Spring)		
Number of ECTS credits allocated :	5		
Name of lecturer(s):	Dr. Petros Christou		
Learning outcomes of the course unit:	<ol style="list-style-type: none"> 1. Present the concepts of physical laws as they apply to structures 2. Explain the application of loads and the development of internal forces and stresses 3. Define the behaviour of structural elements and their role in the structural systems 4. Analyse the differences between various structural systems based on their structural form 5. Introduce the concepts of equilibrium, stability and stiffness 6. Explain the behaviour of light structures and their applications 		
Mode of delivery:	Face-to-face		
Prerequisites:		Co-requisites:	None
Recommended optional program components:			
Course contents:	<p><u>Structural Physics:</u></p> <ul style="list-style-type: none"> • Introduction to natural laws and definition of equilibrium, stability and inertia • Material properties, elastic and brittle elements • Explain the application of loads and the development of reactions and stresses <p><u>Structural Elements:</u></p> <ul style="list-style-type: none"> • One dimensional elements (beams, trusses, columns) • Two dimensional elements (slabs) • Walls (partitions, load bearing, voids on walls) • Foundations • Connections • Stairs <p><u>Structural Systems:</u></p> <ul style="list-style-type: none"> • Post and Beam • Frames • Arches • Vaults • Domes • Explain the differences between two dimensional and three dimensional behaviour <p><u>Building Construction:</u></p> <ul style="list-style-type: none"> • Expansion Joints • Roof and wall insulation • Failures (large deflection, cracking) <p><u>Light Structures:</u></p> <ul style="list-style-type: none"> • Timber structures • Steel structures • Composite structures 		
Recommended and/or required			

reading:	
Textbooks:	Pete Silver, Will McLean, Introduction to Architectural Technology , 2 nd Ed., Laurence King Publishing; 2008.
References:	<ol style="list-style-type: none"> 1. J. Gordon, Structures or why things don't fall down, Da Capo Press, 1978 2. N. Hawkes, McMillan P.G., Structure the way things are built, Oxford, 1993 3. Toulaitos, P., Θέματα Οικοδομικής, Εκδόσεις ΕΜΠ, 1999
Planned learning activities and teaching methods: The course will be presented through theoretical lectures in class. The lectures will present to the student the course content and allow for questions. Part of the material will be presented using visual aids. The aim is to familiarize the student with the different and faster pace of presentation and also allow the instructor to present related material (photographs etc.) that would otherwise be very difficult to do. The learning process will be enhanced with the requirement from the student to complete a project which will be part of their assessment. Besides from the notes taken by students in class, all of the course material will be made available through the class website and also through the eLearning platform.	
Assessment methods and criteria:	<ul style="list-style-type: none"> • Course work: 50% • Final Exam: 50%
Language of instruction:	English
Work placement(s):	No