

Course unit title:	Architectural Technology VI		
Course unit code:	APX431		
Type of course unit:	Compulsory		
Level of course unit:	Diploma Degree of Architect - Engineer		
Year of study:	4		
Semester when the unit is delivered:	7 (Fall)		
Number of ECTS credits allocated :	5		
Name of lecturer(s):	Prof. Panayiotis Touliatos, Marios Pelekanos		
Learning outcomes of the course unit:	<ol style="list-style-type: none"> <li>1. Review the development of timber and steel structures in the ancient and modern times and the production of new materials. Recognize membrane and tensile structures.</li> <li>2. Identify timber and steel as building materials and their properties as basic building materials. Compare the natural material of wood and the industrially produced steel.</li> <li>3. Use wood and steel protection specifications based on new technologies.</li> <li>4. Review new material technologies like nanotechnology (“Self Cleaning”, “Air Purifying”, “Easy to Clean”, “Anti- Graffiti”, “Anti- Reflective” properties etc.) or textile manufacture for tensile structures.</li> <li>5. Analyze contemporary case studies in terms of use of the available technology of materials.</li> <li>6. Develop new design principles based on the available technology.</li> </ol>		
Mode of delivery:	Face-to-face		
Prerequisites:	APX131,APX133,APX231,APX233, APX332	Co-requisites:	None
Recommended optional program components:	None		
Course contents:	The findings of the constructural analysis of a historical building are used to identify the causes of its deterioration and damages and implement immediate measures for protection. The course deals also with the distinction of the construction phases of a historical structure, the methods and the necessity of monitoring actions and the design guidelines of an appropriate restoration proposal.		
Recommended and/or required reading:	<p>Gyula Sebestyen, <b>New Architecture and Technology</b>, Architectural Press, 2003, ISBN 0-7506-5164-4.</p> <p><b>“A Green Vitruvius, Principles and practice of sustainable architectural design”</b>, 1999, ISBN 978-1-873936-94-8.</p> <p>Sylvia Leydecker, <b>“Nano Materials in Architecture, Interior Architecture and Design”</b>, 2008, ISBN 978-3-7643-7994-0.</p> <p>Klaus- Michael Koch, <b>“Membrane Structures”</b>, 2004, ISBN 3-7913-3049-7.</p> <p>J. Gordon, <b>Structures of why things don’t fall down</b>, Da Capo Press, 1978</p> <p>N. Hawkes, MACmillan P.G., <b>Structures the way things are built</b>, Oxford, 1993</p>		

Textbooks:	<p>Hristos Athanasopoulos, <b>Building construction, design and technology</b>, Hristos Athanasopoulos Edition, 2003.</p> <p>N.Kalogeras, Ch.Kirpotin, G.Makris, I.Papaioannou, S.Rautopoulos, M.Tzitzas, P.Touliatos, <b>Architectural Technology</b>, Symmetria Editions, Athens, 1999.</p>
References:	<p>Mario Salvadori, <b>Why Buildings stand up- The strength of Architecture</b>, Norton and Co, 1990.</p> <p>W.Huntington-R. Mickadelt, <b>Building Construction Materials and Types of Construction</b>, J. Viley and Sons, 1981.</p> <p>Mario Salvadori, <b>The bearing structure in architecture</b>, Themeli Editions, Athens, 1981.</p>
Planned learning activities and teaching methods:	<p>The taught part of the course is delivered to the students by means of lectures and computer-aided presentations. Lecture notes and presentations are available through the web for students to use in combination with the relevant textbooks.</p> <p>Lectures are supplemented with project work carried out on an individual basis. Students are requested to design and produce construction details for a small light structure. During the semester, course instructors are making comments and corrections on the students' proposals, at every stage of the process.</p>
Assessment methods and criteria:	<ul style="list-style-type: none"> <li>• Project 70%</li> <li>• Final Examination 30%</li> </ul>
Language of instruction:	<p>Greek</p> <p>English offered for Erasmus Students</p>
Work placement(s):	