



University of Nicosia, Cyprus

<b>Course Code</b> ARCH -312	<b>Course Title</b> Construction II (Timber/Steel)	<b>ECTS Credits</b> 4
<b>Department</b> Architecture	<b>Semester</b> Spring	<b>Prerequisites</b> ARCH -311
<b>Type of Course</b> Required	<b>Field</b> Architecture	<b>Language of Instruction</b> English
<b>Level of Course</b> 1 <sup>st</sup> Cycle	<b>Year of Study</b> 3rd	<b>Lecturer(s)</b> Markella Menikou
<b>Mode of Delivery</b> face-to-face	<b>Work Placement</b> N/A	<b>Co-requisites</b> ARCH -302

**Objectives of the Course:**

- To introduce students to the application of a knowledge base that clearly differentiates architecture from other processes of cultural production.
- To present technical and functional aspects of the construction of timber/steel through advanced studies.
- To develop a foundational knowledge of the manufacturing processes and properties of timber and steel as applied in building construction.
- To introduce the principles of timber and steel structures and their behaviour in load carrying.
- To encourage students to appreciate the historic significance of technological development in architecture and how materials, techniques in structure, construction and environmental modification are integrated in the generation and realisation of architectural designs.
- To introduce the principles underlying performance criteria in construction, identify reference texts to build knowledge and understanding and explore contemporary case studies to test analytic capability and develop a 'language of construction'.
- To introduce students to the construction and structural principles of Timber and Steel, both as principal systems of primary structure as well as infill materials.
- To engage students in on-site construction-site observations through specific visits to building sites during different phases of construction, and of different building projects evidencing a range of building-construction methods.
- To inspire students to engage in experimental/ alternative use of materials through a solid understanding of the basic/ traditional applications
- To introduce students to the fundamentals of construction Detail-Drawing as a tool for studying and devising construction applications.

**Learning Outcomes:**

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

- Identify the basic material characteristics and properties of timber and steel.
- Demonstrate an awareness of the principles, possibilities and limits of these materials as load carrying structures.
- Examine sustainability and principles of environmental modification applied in timber and steel construction.
- Interpret the terminology used in timber and steel construction, and the performance criteria applied to construction.
- Develop the ability to read construction drawings in the context of both 'instrumental' and 'experiential' performance.
- Demonstrate the ability to undertake research and analysis from directed reading and published precedent that supports the acquisition of technological knowledge.
- Discuss construction conditions in relation to both aesthetic and technical requirements.

**Course Contents:**

- Principles underlying performance criteria in building construction
- Materials and processes
- Structural systems in timber and steel/terminology/ Preliminary sizing
- Timber frame and fire / Steel frame and fire
- Lightweight construction / dematerialisation
- Water Penetration Resistance / Time: weathering / wear
- Dimensional co-ordination: manufacturing tolerances/ precision of fit/ standardisation/ modularisation / repetition
- Handling: component dimensions / manufacture>transportation>assembly
- Prefabrication/ The process of construction and the concept of Buildability
- Rules for detail & degree of conversion
- Cost factors, legislative Framework & Building Regulations

**Learning activities and Teaching Methods:**

Lectures, directed readings, case studies analysis, desk-crits, group discussions, presentations

**Assessment Methods:**

Projects, Models, Sketchbook, Mid-Term exam, Final exam

**Required Textbooks/Reading:**

Authors	Title	Publisher	Year	ISBN
Andrea Deplazes	Constructing Architecture, Materials Processes Structures (2 <sup>nd</sup> Edition)	Birkhauser	2008	3764386304

**Recommended Textbooks/Reading:**

Authors	Title	Publisher	Year	ISBN
Francis Ching	Building Construction Illustrated(4 <sup>th</sup> edition)	Wiley	2008	0470087811
Edward Allen	Fundamentals of Building Construction: Materials and Methods (5 <sup>th</sup> edition)	Wiley	2008	047007468X
Derek Osbourn & Roger Greeno	Mitchell's - Introduction to Building ( 3rd edition),	Longman Group, UK	2002	0582473039

