



Course Syllabus

Course Code	Course Title	ECTS Credits
CEE-151	Building Construction Principles	5
Prerequisites	Department	Semester
None	Engineering	Fall, Spring
Type of Course	Field	Language of Instruction
Required	Civil & Environmental Engineering	English
Level of Course	Lecturer(s)	Year of Study
1 st Cycle	Dr Antonia Sophocleous-Lemonari	1 st
Mode of Delivery	Work Placement	Corequisites
Face-to-face	N/A	None

Course Objectives:

The main objectives of the course are to:

- Develop an understanding of residential structures commonly constructed.
- Provide the principles of planning in solving specific construction problems.
- Identify and demonstrate hand and power tools.
- Identify and classify building materials.
- Layout building lines using a set of plans, and tools.
- Introduce bill of materials and estimate cost of construction.
- Construct a structure following a set of plans.

Learning Outcomes:

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

- Identify types of residential structures commonly constructed in the area.
- Apply the principles of planning in solving specific construction problems.
- Identify and demonstrate correct use of hand and power tools.
- Identify and classify building materials.
- Layout building lines using a set of plans and tools.
- Derive a bill of materials and estimate cost of construction.

- Construct a small structure following a set of plans such as a shed, playhouse or small cabin.

Course Content:

- Introduction: general considerations and analysis of the Building Construction context.
- Organization elements of the building worksite. Demolition of existing constructions, excavations-earthworks, specialized machinery for building construction, scaffolds.
- Safety, hygiene and health protection at work.
- Building foundations: types, morphological characteristics. Ground water control, waterproofing of building elements in contact with the ground.
- Bearing structure of buildings: Types, materials, building components.
- Reinforced concrete, elements of the reinforced concrete regulation, wooden or metal forms for in situ concrete cast.
- Stairs. Elements, types, design, construction, support.
- Masonry. Types, materials, thermal, noise and moisture protection.
- Fenestration. Types and functions, criteria of selection, materials for frame and glazing, thermal and optical properties, components, solar protection, shutters, details.
- Roofs. Inclined roofs, types and morphologies, wooden, metal and reinforced concrete roofs, structural elements. Thermal and moisture protection of pitched roofs. Roof design, details. Flat roofs, types and morphologies, materials, thermal and moisture protection, design, details.

Learning Activities and Teaching Methods:

Lectures, Projects, discussion.

Assessment Methods:

Homework, Project assignments, mid-term exam, final exam.

Required Textbooks / Readings:

Title	Author(s)	Publisher	Year	ISBN
Building Construction Illustrated. Patterns, Systems and Design	Francis D.K. Ching B.S. Onouye and D. Zoubelbouhler	John Wiley & Sons Inc	2009	9780470187852
Advanced Construction Technology	Roy Chudley Roger Greeno	Prentice Hall	2006	100495295655

Recommended Textbooks / Readings:

Title	Author(s)	Publisher	Year	ISBN
Fundamental Building Construction	A. Charlett	Taylor & Francis	2007	0203966090