



Course Syllabus

Course Code	Course Title	ECTS Credits
CEE-457	Timber Structures	5
Prerequisites	Department	Semester
CEE-320	Engineering	Fall/Spring
Type of Course	Field	Language of Instruction
Elective	Civil & Environmental Engineering	English
Level of Course	Lecturer(s)	Year of Study
1 st Cycle	Dr Loizos Papaloizou	4 th
Mode of Delivery	Work Placement	Corequisites
Face-to-face	N/A	None

Course Objectives:

The main objectives of the course are to:

- Introduce the nature and inherent characteristics of timber and its reconstituted and engineered products.
- Understand the basic structural behavior of timber structures under the common loading conditions.
- Provide a step-by-step approach to the design of the most commonly used timber elements and connections using solid timber, glued laminated timber or wood based structural products.

Learning Outcomes:

After completion of the course students are expected to:

- Apprehend the most important timber construction methods.
- Understand the mechanical properties and deformation properties of timber.
- Learn how to calculate the loads for a given simple timber structure and perform a static and dynamic analysis.
- Be able to understand and apply the basic design principals for timber structures according to the latest design codes.
- Learn how to design timber joints.

- Understand the effects of seismic loads on timber structures and recognize the major factors that are related to the severity of these effects.

Course Content:

- Types of timber and production process.
- The structure of timber. Defects in wood.
- Engineered wood products
- Strength grading of timber and strength classes
- Effects of moisture.
- Physical and mechanical properties. Common tests.
- Durability issues and preservation techniques.
- Introduction to Eurocode 5 requirements. Safety factors and design values.
- Classification of actions on timber structures. Design Limit states.
- Design of Members Subjected to Flexure. Bending. Shear. Torsion.
- Design of Members and Walls Subjected to Axial or Combined Axial and Flexural Actions
- Design of stability bracing, floor and wall diaphragms
- Design of Glued-Laminated Members
- Design of Joints. Types of connectors. Metal Dowel-type Connections.

Learning Activities and Teaching Methods:

Lectures, in-class examples and exercises

Assessment Methods:

Homework assignments, mid-term exam(s), final exam (comprehensive).

Required Textbooks / Readings:

Title	Author(s)	Publisher	Year	ISBN
Structural Timber Design to Eurocode 5	Jack Porteous, Abdy Kermani	Wiley-Blackwell	2013	978-0470675007

Recommended Textbooks / Readings:

Title	Author(s)	Publisher	Year	ISBN
Practical Design of Timber Structures to Eurocode 5	H.J. Larsen; V. Enjily	ICE Publishing	2009	978-0727736093
Design of Structural Timber to EC5	William M.C. McKenzie, Binsheng Zhang	Palgrave Macmillan	2007	978-1403941053