



Course Syllabus

Course Code	Course Title	ECTS Credits
CEE-452	Steel Structures II	5
Prerequisites	Department	Semester
CEE-352	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 Marios Kyriakides	4 th
Mode of Delivery	Work Placement	Corequisites
Face-to-face	N/A	None

Course Objectives:

The main objectives of the course are to:

- develop an in-depth understanding of advanced steel structural principles;
- provide enhanced knowledge about connection design;
- introduce students to the fundamental principles of the design of steel frame structures;
- provide a foundation for composite design.

Learning Outcomes:

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

- efficiently design bolted and welded connections of steel members;
- design steel framing systems and connections of a building;
- design bracing systems for wind and seismic loading;
- understand the basic principles of composite structures design.

Course Content:

- Advanced connection design.
- Beam-to-column joints. Beam-to-beam joints. Column-base joints.
- Types of bracing systems.
- Applications of steel structures: complex trusses, braced frames, space frames.
- Members under compression and bi-axial bending.
- Lateral and lateral torsional buckling of structural components.
- Introduction to design of composite structures.

Learning Activities and Teaching Methods:

Lectures, in-class examples and exercises, and homework assignments.

Assessment Methods:

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

Required Textbooks / Readings:

Title	Author(s)	Publisher	Year	ISBN
The Behaviour and Design of Steel Structures to EC3, 4 th Edition	N.S. Trahair, M.A. Bradford, D. Nethercot, L. Gardner	CRC Press	2007	978-0415418669

Recommended Textbooks / Readings:

Title	Author(s)	Publisher	Year	ISBN
Design of Steel Structures to Eurocodes	Ioannis Vayas, John Ermopoulos, George Ioannides	Springer International Publishing AG	2018	978-3319954738
Steel Designers' Manual, 7 th Edition	Buick Davison & Graham W. Owens	Wiley-Blackwell	2012	978-1405189408

Theory and practice of steel structures: Design to Eurocodes with Introduction to U.S. Standards	Vincenzo Nunziata, Andy Richardson (ed.)	LAP LAMBERT	2013	978- 3848448777
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