UNIVERSITY of NICOSIA

Course Syllabus

Course Code	Course Title	ECTS Credits
CEE-352	Steel Structures I	6
Prerequisites	**Department**	**Semester**
MENG-270, CEE-220	Engineering	Spring
Type of Course	**Field**	**Language of Instruction**
Required	Civil & Environmental Engineering	English
Level of Course	**Lecturer(s)**	**Year of Study**
1st Cycle	Dr Marios Kyriakides	3rd
Mode of Delivery	**Work Placement**	**Corequisites**
Face-to-face	N/A	None

Course Objectives:

The main objectives of the course are to:

- inform students of the important features inherent in both the mechanical behaviour of structural steel and steel technology;
- introduce the behaviour and design of steel structural members according to the limit state design concept;
- discuss the behaviour and design of tension members, compression members and beam-column members;
- introduce students to the principles of connection design;
- provide basic knowledge about the non-linear behaviour and failure mode of steel structural members;
- provide an understanding of the relationship between structural analysis and design provisions.

Learning Outcomes:

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

- demonstrate understanding of the basic mechanical properties of steel as a structural material;
- classify the various steel sections;
- design individual steel members (tension members, beams, columns) under various

loading conditions;
- evaluate the capacity of certain steel members;
- design basic joint connections.

Course Content:

- Steel technology. Steel as a structural material. Mechanical properties.
- Design principles and provisions according to European and international standards.
- Ultimate and serviceability limit states and safety factors.
- Steel section types and classification.
- Design of steel members under tension, compression, buckling, shear, and torsion.
- Elastic and plastic analysis and design principles.
- Basic connection design with bolts and welds.

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, 4th 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, 7th 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