

<i>Name of Course</i>	<b>Thin-walled structures</b>
<i>Course code</i>	<b>MSM413ANEP</b>
<i>Weekly hours: lect/pract/lab</i>	<b>0 / 0 / 2</b>
<i>Number of Credits</i>	<b>3</b>
<i>Program</i>	<b>Structural Engineering MSc./ obligatory</b>
<i>Evaluation</i>	<b>semester grade with signature</b>
<i>Semester</i>	<b>fall semester</b>
<i>Prerequisites</i>	<b>MSM411ANEP Stability of structures</b>
<i>Department</i>	<b>Department of Civil Engineering</b>
<i>Responsible and lecturers</i>	<b>Dr. Attila FÜLÖP associate professor</b>

## OBJECTIVES

The goal of the semester is that the students should learn about the general basic information about thin-walled structures. Typical solutions of thin-walled steel structures, material and strength properties, codified design

## CONTENTS

**General Course Description and Main Content:** The definition and types of thin-walled structures, specialities of the structural behaviour. Production of cold-formed and welded thin-walled steel structures. Structural sections, corrosion protection, connections. Structural modelling and analyses methods. Design theory of cold formed structural sections and stiffened / unstiffened welded plates. Practical design according to Eurocode 3 parts 1-3, 1-5 and 1-7, strength and stability investigations.

### Schedule:

1. The definition and types of thin-walled structures, specialities of the structural behaviour.
2. Production of cold-formed and welded thin-walled steel structures.
3. Structural sections, corrosion protection, connections.
4. Structural modelling and analyses methods.
5. Design theory of cold formed structural sections and stiffened / unstiffened welded plates.
6. Practical design according to Eurocode 3 parts 1-3, 1-5 and 1-7, strength and stability investigations.

## 7. Case studies.

### EVALUATION AND GRADING

**Attendance:** Attending is required all classes. In case of unexcused absence from more than 30% of the total number of lesson will be grounds for failing the class. To be in class at the beginning time and stay until the scheduled end of the lesson is required, tardiness of more than 20 minutes will be counted as an absence. In the case of an illness or family emergency, the student must present a valid excuse, such as a doctor's note.

**Signature / Grading:** The grading is based on the semester homework project 95% and attendance 5%. Details is discussed on the laboratory course.

#### **Grading Scale:**

- 0 – 50 % failed (1)
- 51 – 62 % passed (2)
- 63 – 75% satisfactory (3)
- 76 – 87 % good (4)
- 88 – 100 % excellent (5)

### READINGS AND REFERENCE MATERIALS

1. EN 1993-1-3 (2006) (English): Eurocode 3: Design of steel structures - Part 1-3: General rules - Supplementary rules for cold-formed members and sheeting
2. EN 1993-1-5 (2006) (English): Eurocode 3: Design of steel structures - Part 1-5: General rules - Plated structural elements
3. EN 1993-1-7 (2007) (English): Eurocode 3: Design of steel structures - Part 1-7: Strength and stability of planar plated structures subject to out of plane loading
4. SweedSteel Metecno design tables and samples
5. Lindab design tables and samples

SCHEDULE

	TEACHING PERIOD, TEACHING WEEKS															EXAM PERIOD				
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	1.	2.	3.	4.	5.
2021/2022. I. SEMESTER																				
Number of Lecture and Practice																				
Laboratory		1	2	2	3	3	4		4	5	5	6	6	7	7					
Homework project out / submission		x													x					
Signature and midsemester grade															sig n.					
Planned exam time																				

9<sup>th</sup> September 2021.

**Dr. Attila FÜLÖP**

responsible lecturer