

## COURSE SYLLABUS SEMESTER FALL 2019/2020

<i>Name of Course</i>	<i>Steel-Concrete Composite Structures</i>
<i>Course Code</i>	<b>MSB391AN</b>
<i>Allotment of hours per week</i>	<b>2/1/0</b>
<i>Number of credits</i>	<b>2</b>
<i>Program</i>	<b>Civil Engineering (BSc)</b>
<i>Evaluation</i>	<b>Course mark</b>
<i>Semester</i>	<b>7th</b>
<i>Prerequisites</i>	<b>Reinforced Concrete Structures 1, Steel Structures 1</b>
<i>Department</i>	<b>Civil Engineering</b>
<i>Instructor</i>	<b>András Dormány</b>

### INTRODUCTION, GENERAL COURSE DESCRIPTION

The aim of the course is to present the types of composite structures, working mechanism of it and the construction methods. The students have to learn the desing methods according to Eurocode.

### LEARNING OBJECTIVES

The working mechanism of composite structures. Load bearing capacity of steel-compoite structures in case of partial and full interaction. Longitudinal shear and shear connections. Effects of slip on stresses and deflection. Design of simply supported beam and slab. Design of multi-supported beams and slabs. Composite columns and frames. Serviceability Limit States.

*Schedule:*

Lecture:

1. Types of Steel-concerete composite structres
2. Plastic analysis of simply supported composite structures
3. Plastic analysis of multy-supported composite structures, interaction of bending and shear
4. Plastic analysis of multy-supported beams and bridges
5. Stability os composite structures
6. Longitudinal shear, full and partial interaction
7. Desing of shear connection
8. Serviceability Limit States

9. Composite columns I
10. Composite columns II
11. FEM modelling of composite structures
12. Consultation

Practice:

1. Effect of shrinkage and creep in Steel-concrete composite structures
2. Calculation of simply supported beam
3. Design of shear connection
4. Full and partial interaction
5. Serviceability Limit States
6. FEM modelling of Composite structures
7. Consultation

## ATTENDANCE AND GRADING

*Attendance: according to Study Code.*

*Grading: Students have to accomplish the semester assignment.*

Evaluation in percents	Numeric grade
89%-100%	5
76%-88%	4
64%-75%	3
51%-63%	2
0-50%	1

## READING AND REFERENCE MATERIALS

- [1.] R.P. Johnson: Composite Structures of Steel and Concrete, third edition, 2004  
ISBN 1-4051-0035-4

SCHEDULE

		STUDY PERIOD, WEEKS															EXAM PERIOD						
SEMESTER FALL 2019/2020		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	1.	2.	3.	4.	5.		
<b>Lecture number</b>		1	2	3	4	5	6	7	8		9	10	11	12	13								
<b>Practice number</b>			1		2		3		4		5		6		7								
<b>Semester assignment</b>	<b>publishing</b>								X														
	<b>submission</b>															X							
<b>Create of course mark</b>																	A/ FJ						

2019.09.02

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