SYLLABUS AND COURSE REQUIREMENTS
2018/2019. II. SEMESTER

Title	**Basics of Structural Design**
Course code	**MSB378ANEP**
Weekly hours: lect/pract/lab	**1 / 1 / 0**
Credit points	**2**
Curriculum(s)/ type	**Civil Engineering BSc./ obligatory**
School	**English**
Requirement	**midsemester grade**
Registration semester	**spring semester**
Pre-requirement(s)	**---**
Gestor Department(s)	**Department of Civil Engineering**
Responsible and lecturers	**Dr. Attila FÜLÖP**

INTRODUCTION, LEARNING OUTCOMES

The goal of the semester is that the students should learn the theoretical background of the structural design, the basic knowledges of probability theories and the structure of the codified design through on the EuroCode Design Code system.

CONTENT

General Course Description and Main Content: Brief Syllabus: Structural design theory. Methodology of the engineering design. Structural, material and load modelling. Strength design, approximate and exact calculations. Summary of the structural mechanics. Statically determined and undetermined structures. EN 1990 (2002) (English): Eurocode - Basis of structural design. The Eurocode design code system. General assumptions, objectives, major concepts. Basic knowledges of the probabilistic design. Probability variables, main values, variance, quantile, etc. Limit state design concept, design situations, actions, combination of actions, verification of limit states. Actions on structures - General actions - Densities, self-weight, imposed loads for buildings. Actions on structures - General actions - Snow loads. Actions on structures - General actions - Wind actions. Actions on structures - Traffic loads on bridges. Actions on structures - Actions induced by cranes and machinery

Lecture and Practice:

1. Introduction
2. Structural design theory. Methodology of the engineering design.
3. Structural, material and load modelling. Strength design, approximate and exact calculations.
4. Summary of the structural mechanics. Statically determined and undetermined structures.

5. EN 1990 (2002) (English): Eurocode - Basis of structural design. The Eurocode design code system. General assumptions, objectives, major concepts.
6. Basic knowledges of the probabilistic design. Probability variables, main values, variance, quantile, etc.
7. Limit state design concept, design situations, actions, combination of actions, verification of limit states.
8. Actions on structures - General actions - Densities, self-weight, imposed loads for buildings
9. Actions on structures - General actions - Snow loads
10. Actions on structures - General actions - Wind actions
11. Actions on structures - Traffic loads on bridges
12. Actions on structures - Actions induced by cranes and machinery
13. Semester exam

EVALUATION AND GRADING

Attendance: Attending is required all classes. In case of unexcused absence from more than 30% of the total number of lessons 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 end semester exam 90% and attendance 10%. Details is discussed on the practice.

Grading Scale:

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

RECOMMENDED READINGS

[1st] Gulvanessian: Designers' Guide to EN 1990.
[2nd] EN 1990 (2002) (English): Eurocode - Basis of structural design
[3rd] EN 1991-1-1 (2002) (English): Eurocode 1: Actions on structures - Part 1-1: General actions - Densities, self-weight, imposed loads for buildings
[4th] EN 1991-1-3 (2003) (English): Eurocode 1: Actions on structures - Part 1-3: General actions - Snow loads
[5th] EN 1991-1-4 (2005) (English): Eurocode 1: Actions on structures - Part 1-4: General actions - Wind actions
[6th] EN 1991-2 (2003) (English): Eurocode 1: Actions on structures - Part 2: Traffic loads on bridges
[7th] EN 1991-3 (2006) (English): Eurocode 1: Actions on structures - Part 3: Actions induced by cranes and machinery
[8th] B2: The role of EN 1990: the key head Eurocode, http://eurocodes.jrc.ec.europa.eu

SCHEDULE

	TEACHING PERIOD, TEACHING WEEKS															EXAM PERIOD				
2018/2019. II. SEMESTER	**1.**	**2.**	**3.**	**4.**	**5.**	**6.**	**7.**	**8.**	**9.**	**10.**	**11.**	**12.**	**13.**	**14.**	**15.**	**1.**	**2.**	**3.**	**4.**	**5.**
Number of Lecture and Practice	1	2	3	4	5	6-7	8	9	10		11		12	13				Signature, midsemester grade can not be fulfil		
Exams														x	x					
Signature and midsemester grade															a /fj					
Planed exam time																				

4th February 2019.

Dr. Attila FÜLÖP

responsible lecturer