

**COURSE SYLLABUS
SEMESTER AUTUMN 2022/2023**

<i>Name of Course</i>	Road pavements and railway structures
<i>Course Code</i>	MSB233AN
<i>Allotment of Hours per Week</i>	2 lectures
<i>Number of Credits</i>	3
<i>Program</i>	Civil Engineer BSc
<i>School</i>	full-time
<i>Evaluation</i>	mid-term grade
<i>Semester</i>	Autumn 7th
<i>Prerequisites</i>	-
<i>Department</i>	Civil Engineering
<i>Instructors</i>	<u>Eller Balázs</u>

INTRODUCTION, GENERAL COUSE DESCRIPTION

Obtaining basic knowledge of survey and measurement tasks of transport facilities (road, railway)

LEARNING OBJECTIVES

Short description:

Types, composition and functions of road pavement structures, their climatic and traffic loading, deterioration features. Theoretical and practical pavement structure design methods, analytic road pavement structure design. Road pavement structural design software. Design of the strengthening of existing road pavement structures. Earthworks for road pavement structures. Characterization of the condition of existing road structures. New structure design. Strengthening of the asphalt pavement. Base layers, pavement bases. Asphalt mixes for road construction. Analysis of asphalt mixes. Asphalt and concrete pavements, and their maintenance tasks. Stone pavements, the idea of preventive maintenance, surface dressings, recycling and re-use innovative technologies.

The dynamics of the railways. The elements of the superstructure: rail, sleeper, fastenings, ballast. The strengthening of the structure by protection layer. Level crossings, and extraordinary types of superstructures. The structural design of turnouts. The structure of the welded tracks. Superstructures of high speed railways.

ATTENDANCE AND GRADING

Attendance:

Participation on the lectures.

Signature / Semester Rating Condition:

Participation on the lectures.

Exam: none

Composition of final grade:

There are two tests from the material of the lectures.

Evaluation

Test 1. – 25 pts

Test 2. – 25 pts

Grades:

%	Grades
85-100	5
70-84,5	4
55-69,5	3
40-54,5	2
0-39,5	1

READINGS AND REFERENCE MATERIALS

- [1] The notes of the lectures.
- [2] Wolfgang Kühn: Fundamentals of Road Design, WIT Press, 2013, p. 327, ISBN 978-1-84564-097-2
- [3] J. S. Munday: Railway Track Engineering, Tata McGraw-Hill Education, 2010, p. 630, ISBN 978-0-07-068012-8
- [4] Sz. Fischer, B. Eller., Z. Kada, A. Németh: Railway construction, University of Győr, 2015,

SCHEDULE

		TERM OD STUDY, WEEKS OF EDUCATION															EXAM PERIOD					
SEMESTER SPRING 2019/2020		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	1.	2.	3.	4.	5.	
Lecture topics Nr.		x	x	x	x	x	x	planned field trip	x		x	x	x	x	x	x						
Practice/Lab Nr.																						
Closed thesis																						
Home work	outgoing																					
	submission deadlines																					
Records	submission deadlines																					
Others	e.g. reports																					
	Test									x							x					
Signature / Mid-term grade																	s/gr			Signature, mid-tern grade cannot be replaced		
Scheduled dates for exams																						

September 4th, 2022

Eller Balázs

Instructors