

## Tárgytematika / Course Description

### Road pavements and materials

**EKNB\_KETA010**

**Tárgyfelelős neve /**

**Teacher's name:** Nagy Richárd

**Félév / Semester:** 2024/25/2

**Beszámolási forma /**

**Assesment:** Vizsga

**Tárgy heti óraszám /**

**Teaching hours(week):** 2/0/1

**Tárgy féléves óraszám /**

**Teaching hours(sem.):** 0/0/0

### OKTATÁS CÉLJA / AIM OF THE COURSE

The students will learn the design of pavement structures, the design and production technology of the various materials and mixtures required for their construction. They will hear about laboratory and field testing methods for materials and finished pavements, and the basics of grading. They will learn about dimensioning and design of pavement structures, road construction technologies and production processes.

### TANTÁRGY TARTALMA / DESCRIPTION

Week 1	Types and construction of pavement structures for low-traffic roads.
Week 2	Material parameters in the dimensioning model dimensioning criteria.
Week 3	Design and dimensioning of pavement structure tile pavements. Reinforcement design.
Week 4	Granular base layers. Dimensioning of capping layers.
Week 5	Technology and construction of hydraulic bound lean concrete base courses.
Week 6	Aggregates, binders. Types of asphalt, their base materials.

Week 7	Base and pavement layers: function, characteristics, requirements.
Week 8	Quality assurance. Road construction testing systems.
Week 9	Asphalt production. Production technology, delivery, installation.
Week 10	Use of modified binders. Use of special and special pavement rehabilitation.
Week 11	Application of thin layers. Properties of thin layer construction.
Week 12	Stress absorbing membrane layer.
Week 13	Application of emulsions. Emulsion asphalt mixtures.
Week 14	Reuse of road construction materials. On-site recycling.
Week 15	Concrete pavement design, materials. Concrete testing. Construction of stone pavements.

### SZÁMONKÉRÉSI ÉS ÉRTÉKELÉSI RENDSZERE / ASSESSMENT'S METHOD

Total number of lessons:3		Requirements for participation in the session	
Number of lecture hours:2		Participation in the session is <b>compulsory</b>	<b>compulsory for all laboratory exercises</b>
Number of hours for curricular exercises:1/2		Participation in the session is <b>compulsory</b>	<b>study trip obligatory</b>
Number of hours of laboratory practical: 1/2		Certification and make-up in case of absence from the session	

				Total number of absences: max. 3 occasions			
				of which one occasion uncertified			
				of which two occasion certified			

**Inquiry of knowledge**

Mid-semester		End of semester
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	Total number: 4	
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Submission of laboratory exercises, preparation of a semester project and lecture notes ongoing. Last week of March: pencil version of term plan to be ready	Date(s) will be given in the NEPTUN system	submission of semester project, submission of protocols, completion of mid-term exam notes
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Mid-term exam: 2		Type: laboratory reports, mid-term exams, semester work, preparation of lecture notes	Signature:	yes	
				Practical grade:	yes
			yes		

**Topics: 1. Exam: syllabus 1-8. 2. final exam: points 9-15 of the syllabus, semester project: asphalt production**

**Preparation of laboratory protocols.**

**Possibility of substitution in case of justified absence and possibilities of correction: one substitution for laboratory examination**

Mid-term exam	5 grades	Evaluation, how grades are	Signature		Exam
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<b>semester project</b>	5 grades	<b>signature condition: attendance of classes, study trip</b>	2 grades		5 grades
<b>Laboratory exercises</b>	5 grades	<b>Successful completion of 2 mid-term exam, submission of a mid-term project</b>			oral
<b>Lecture notes</b>	5 grades	<b>completion of laboratory exercises, submission of reports</b>			written
<b>Mid-term exams</b>	NEPTUN	<b>submission of lecture notes</b>			
<b>lecture note submission</b>	at last lecture				
<b>submission of laboratory protocols</b>	at last lecture	<b>Type of assessment, mark scheme: combined</b>			
<b>submission of semester project</b>	at last lecture	<b>mid-term exams=30%, semester project=20%, Semester exam=50%</b>			

Number and type of compulsory, individual or group assignments: 1 individual semester project, 5 individual laboratory mid-term exams assignments

### **KÖTELEZŐ IRODALOM / OBLIGATORY MATERIAL**

Related PIARC technical documents: [www.piarc.org](http://www.piarc.org)

### **AJÁNLOTT IRODALOM / RECOMMENDED MATERIAL**

