

Tárgytematika / Course Description **Road construction materials**

EKNM_KETA040

Tárgyfelelős neve /

Teacher's name: Nagy Richárd

Félév / Semester: 2024/25/2

Beszámolási forma /

Assesment: Vizsga

Tárgy heti óraszám /

Teaching hours(week): 2/1/0

Tárgy féléves óraszám /

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

OKTATÁS CÉLJA / AIM OF THE COURSE

Recognise design methods which require further theoretical knowledge and deeper engineering skill with new technologies, tests, diagnostic methods. Empirical and fundamental properties of bitumen and bituminous mixes. Advanced testing methods of pavement materials. Mechanical analysis of road pavements. Newest innovation technologies in pavement engineering. Enhancing knowledge acquired in BsC course to skills and perfection level. Enhancing abilities for applying new methods, innovation technologies and capabilities to perform research work.

TANTÁRGY TARTALMA / DESCRIPTION

1. Types of road pavements.
2. Principles of mechanistic-empirical pavement structural design of asphalt and concrete pavements.
3. Traffic loads. Design traffic. Environmental effects.
4. Subgrade bearing capacity. Capping layers, frost protection layers.
5. SHRP Superpave: bitumen and asphalt mixes.
6. Fundamental and empirical properties of asphalt mixes.

7. Types and characterization of pavements layers. Innovation technologies.
8. Characterisation of pavement condition, distress models.
9. Structural design of asphalt pavements. Long lasting (perpetual) pavements.
10. Bearing capacity evaluation, backcalculation.
11. Processing of pavement test data.
12. Design of portland cement concrete pavements.
13. Concrete block pavements.
14. Low volume roads.

SZÁMONKÉRÉSI ÉS ÉRTÉKELÉSI RENDSZERE / ASSESSMENT'S METHOD

I. homework: 1) processing different test data; 2) pavement design example;

II. two test scripts;

III. exam.

KÖTELEZŐ IRODALOM / OBLIGATORY MATERIAL

Selected publications from international journals of pavement engineering;

PPT files of lectures;

assignment descriptions;

given internet sites;

AJÁNLOTT IRODALOM / RECOMMENDED MATERIAL