

## Tárgytematika / Course Description

### Transport infrastructure 3

EKNB\_KETA027

Tárgyfelelős neve /

Teacher's name: Dr. Fischer Szabolcs

Félév / Semester: 2022/23/1

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

Transfer of theoretical knowledge related to the railway substructure, the design of superstructures, the behavior of rail joints (fishplated joints), and CWR tracks. Acquisition of route planning knowledge through the independent preparation of a 'permission level' plan for a railway section.

### TANTÁRGY TARTALMA / DESCRIPTION

Week #1	<p><b>Lecture: Properties and characteristic of railway transport. Technical and basic concepts of railways. Railway resistances and traction force.</b></p> <p><b>Tutorial: Announcement of semester homework (railway plan authorization level), making design base map.</b></p>
Week #2	<p><b>Lecture: Horizontal planning of railways. Railway curvature-transition and superelevation-transition geometries. Planning of railway three-card arches and inflexion curves. Long sectional and cross-sectional planning.</b></p> <p><b>Tutorial: Consultation – geodetic tracing data calculation, railway track axis planning.</b></p>
Week #3	<p><b>Lecture: Set-up of railway superstructure, track systems, loading forces of tracks.</b></p> <p><b>Tutorial: Consultation – checking the horizontal geometry.</b></p>
Week #4	<p><b>Practice: Rails.</b></p> <p><b>Tutorial: Consultation – Long sectional planning.</b></p>
Week #5	<p><b>Lecture: Sleepers.</b></p> <p><b>Tutorial: Consultation – checking the long section geometry.</b></p>

Week #10

Lecture: Highway-railway grade crossings.  
Tutorial: Consultation – technical documentation.

Week #11

Lecture: Railway track dilatation.  
Tutorial: Consultation.

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## SZÁMONKÉRÉSI ÉS ÉRTÉKELÉSI RENDSZERE / ASSESMENT'S METHOD

Assessment methods

**Semester homework:** deadline of submitting is the last day of termtime, at 23:55, on elearning.sze.hu webpage. The final semester homework grade can be five grades: i.e. 1 to 5.  
**Mid-term exam:** Written mid-term exam during termtime at given time and place. The valid mid-term exam questions are placed at subject's elearning.sze.hu webpage. Duration at mid-term exam 60 minutes, during this time 3 questions should be answered. The mark is calculated according to mean value of the three "part grades", but in case of successful exam neither "part grade" is allowed to be 1 (gig), because it means that the exam degree is 1 (gig) too. The final mid-term exam grade can be five grades: i.e. 1 to 5. There is only one additional chance to rewrite mid-term exam.

In case of any grades (semester homework or mid-term exam) are 1 or no grade, student is not given termtime end signature.

**Exam:** Student have to have termtime end signature to be able to write exam. Written exam during exam period at given time and place. The valid exam questions are placed at subject's elearning.sze.hu webpage. Duration at exam 60 minutes, during this time 3 questions should be answered. The mark is calculated according to mean value of the three "part grades", but in case of successful exam neither "part grade" is allowed to be 1 (gig), because it means that the exam degree is 1 (gig) too. The final exam grade can be five grades: i.e. 1 to 5.

**Final grade:** average of homework, mid-term exam and exam grades, it can be five grades: i.e. 1 to 5. In case of exam's grade is 1, final grade is 1 too. There are two additional chances to rewrite

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## KÖTELEZŐ IRODALOM / OBLIGATORY MATERIAL

Compulsory reading

Fischer Sz., Eller B., Kada Z., Németh A.: Railway construction, Universitas-Győr Nonprofit Kft., Győr, 2015  
PPT presentations, standards, regulations, etc.  
Own hand-written notes.