

## Tárgytematika / Course Description

### Geodesy

**EKNB\_KETA052****Tárgyfelelős neve /****Teacher's name:** Dr. Füleki Péter**Félév / Semester:** 2021/22/2**Beszámolási forma /****Assesment:** Vizsga**Tárgy heti óraszám /****Teaching hours(week):** 1/2/1**Tárgy féléves óraszám /****Teaching hours(sem.):** 0/0/0

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### OKTATÁS CÉLJA / AIM OF THE COURSE

Geodesy surveys are necessary for planning and set-out tasks before and during construction.

This course provides an overview of the land surveying techniques and focuses on the angle measurements and leveling. The labs provide hands-on experience in conventional and modern surveying instruments. Students as a team will work on a surveying project.

Students will be able to choose the right method to solve different geodesy tasks and gain experience in surveying instruments. (Leveling instrument, Total station, GPS)

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### TANTÁRGY TARTALMA / DESCRIPTION

- 1) Geodesy definitions, general information
- 2) Coordinate systems, geodesy projections
- 3) Geodesy networks
- 4) Angle measurements and the use of the theodolite
- 5) Angle measurements calculations
- 6) High measurements: Trigonometry leveling
- 7) High measurements: Geometry leveling
- 8) Measurement errors
- 9) GNSS - Global Navigation Satellite System
- 10) Modern survey methods: Laser scanner (LIDAR)
- 11) Photogrammetry
- 12) Construction surveys

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

Marks are from 1 (worst) to 5 (best).

- 0-50%: 1
- 51-65%: 2
- 66-75%: 3
- 76-85%: 4
- 86-100%: 5

Points will be given for:

- Home assignments (45p)
- Lab (10p)
- Written exam (45p)

100 points is total.

For taking the exam: 28 out of 55 points have to be gathered during the semester.

### **Offered marks:**

In case of with excellent mid-term performance, you can avoid the exam. For rich the offered mark: 55 out of 42 (76%) points have to be gathered during the semester and lab.

### **Lab**

That is the laboratory course for one credit.

End of the seminars you must participate at two day-long Land surveying practice, it will be organised during the examination period. The exact date is regarding the coronavirus and depending on the instructions of Hungarian Government.

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## **KÖTELEZŐ IRODALOM / OBLIGATORY MATERIAL**

Charles D. Ghilani; Paul R. Wolf: Elementary Surveying

Teaching materials: SZE Learning system: <https://szelearning.sze.hu/>