Basic surveying

Detailed Course Program

2022/23/2. semester – Lecturers: Abir Khaldi (AK), Bence Ambrus (BA)

Week	No.	Day	Date	Lecturer	Topic
1	1	Wen	1 Mar	AK	Introduction. What is surveying? Angles, distances and area
	2	Fri	3 Mar	AK	Basics of geometry, similar triangles, right angle triangles, roundings
2	3	Wen	8 Mar	AK	Basic trigonometrical functions in right triangle and in unit circle
	4	Fri	10 Mar	AK	Trigonometrical applications
3	5	Wen	15 Mar	–	Public holiday (15 March)
	6	Fri	17 Mar	AK	Trigonometric heighting using surveying instruments
4	7	Wen	22 Mar	AK	Simple coordinate geometric computations (equation of a line, intersection of lines, circle, etc.)
	8	Fri	24 Mar	AK	Horizontal coordinate systems (Cartesian, polar, mathematical, geodetic). Conversion between polar and rectangular coordinates.
5	9	Wen	29 Mar	AK	Fundamental tasks of plane surveying
	10	Fri	31 Mar	AK	Practice of fundamental tasks, area calculation.
6	**11**	**Wen**	**5 Apr**	**AK**	**1st control test: basic geometry, trigonometry, coordinate geometry**
	12	Fri	7 Apr	–	Public holiday (Good Friday)
7	13	Wen	12 Apr	–	University holiday (Spring break)
	14	Fri	14 Apr	AK	Leveling observations. Determination of height differences and distances
8	15	Wen	19 Apr	AK	Leveling observations 2. Mapping with level instrument.
	16	Fri	21 Apr	BA	**Homework assignment**, Start working on sample homework (measured points).

9	17	Wen	26 Apr	BA	Calculation of detailed point coordinates using distance and angle measurements. Calculation of area and heights.
	18	Fri	28 Apr	-	Faculty holiday (Vásárhelyi day)
10	19	Wen	3 May	BA	Sketching of the detail points, drawing angles and distances using a ruler and a protactor.
	20	Fri	5 May	–	Timetable change, Monday classes.
11	21	Wen	10 May	BA	Geometrical optics I.
	22	Fri	12 May	BA	Geometrical optics II.
12	23	Wen	17 May	BA	Geometrical optics III.
	24	Fri	19 May	BA	Circular motion, dynamics I., **Homework deadline**
13	25	Wen	24 May	BA	Circular motion, dynamics II.
	26	Fri	26 Jun	BA	Gravitation, the Earth's gravity, interpretation of heights I.
14	27	Wen	31 May	BA	Gravitation, the Earth's gravity, interpretation of heights II.
	28	**Fri**	**2 Jun**	**BA**	**2nd control test: optics, gravitation, electromagnetic waves**

Spring holiday: from 10 April until 12 April, Faculty holiday (Vásárhelyi Day) without education: 28 of April.

Subject assessments (max. 60 points):

- 2 control tests (20 points each), 5 Apr 2023 and 2 June 2023
- 1 homework (20 points), deadline: 19 May 2023

There is no minimum point threshold for any of the control tests or the homework exercise. In order to pass the subject, the student has to achieve at least 50% of the total achievable points (min. 30 points).