

Course description

Course abbreviation:	KGM/GENMB	Page:	1 / 3
Course name:	Geodesy B - Survey Camp		
Academic Year:	2023/2024	Printed:	03.06.2024 05:22

Department/Unit /	KGM / GENMB			Academic Year	2023/2024
Title	Geodesy B - Survey Camp			Type of completion	Pre-Exam Credit
Accredited/Credits	Yes, 4 Cred.			Type of completion	
Number of hours	Tutorial 4 [Hours/Week]				
Occ/max	Status A	Status B	Status C	Course credit prior to	NO
Summer semester	0 / -	0 / -	0 / -	Counted into average	NO
Winter semester	0 / -	0 / -	0 / -	Min. (B+C) students	1
Timetable	Yes			Repeated registration	NO
Language of instruction	Czech			Semester taught	Summer semester
Optional course	Yes			Internship duration	0
Evaluation scale	S\N				
No. of hours of on-premise					
Auto acc. of credit	Yes in the case of a previous evaluation 4 nebo nic.				
Periodicity	K				
Substituted course	KMA/GENMB				
Preclusive courses	N/A				
Prerequisite courses	N/A				
Informally recommended courses	N/A				
Courses depending on this Course	N/A				

Course objectives:

The aim of this course is, to explain the next topics:

Plane survey. Densification of horizontal ground control, project and observation of complementary net (angular measurement by electronic theodolites, distance measurement by electronic distance meters), traverses for plane survey.

Detailed plane survey by polar and orthogonal methods with the checking of measured data for a posteriori analysis of accuracy.

Simultaneous measurement of position and elevation of detailed horizontal ground control points with the analysis of accuracy.

Detailed measurement of heights by tachymetry (stadia, with the use of electronic distance meters, block tachymetry).

Precise levelling and measuring the elevation of points of detailed levelling net.

Global Navigation Satellite System (GNSS), new conception of basic ground control. Measuring of network of stations by static method.

Requirements on student

The solving of primal problems of:

- 1) Terrain reconnaissance
- 2) Geodetic monument
- 3) Polygonal traverse
- 4) Angle measuring
- 5) GNSS (static method, RTK and RTK lay out)
- 6) Polar method
- 7) Tachymetry
- 8) Precise levelling
- 9) Trigonometry, three-dimensional coordinates
- 10) Orthogonal method

Content

Terrain Reconnaissance. Polygonal traverse. Detailed measurement of heights by polar and orthogonal method, tacheometry. Coordinates computation of geodetic points. Precise levelling, technic levelling. Global Navigation Satellite System (GNSS).

Fields of study

Guarantors and lecturers

- **Guarantors:** Ing. Martina Kepka Vichrová, Ph.D. (100%)
- **Tutorial lecturer:** Ing. Pavel Hájek, Ph.D. (100%), Ing. Martina Kepka Vichrová, Ph.D. (100%)

Literature

- **Recommended:** Jandourek J. *Geodézie IV (Úprava měřených veličin před výpočty, Geodetická úloha a její.*
- **Recommended:** Ratiborský J. *Geodezie 10.* ČVUT Praha, 2000.
- **Recommended:** Skořepa Z. *Geodezie 10,20. (Návody na cvičení).* ČVUT Praha, 1999.
- **Recommended:** Blažek, Radim; Skořepa, Zdeněk. *Geodezie 30 : výškopis.* Praha : Vydavatelství ČVUT, 1999. ISBN 80-01-01598-X.
- **Recommended:** Dušek R., Vlasák J. *Geodezie 40 (Příklady a návody na cvičení).* ČVUT Praha, 1998.
- **Recommended:** Jandourek, Jan. *Geodézie 50 : vyrovnání účelových geodetických sítí v E2 a v E3.* Praha : Vydavatelství ČVUT, 2000. ISBN 80-01-02171-8.
- **Recommended:** Böhm J., Radouch V., Hampacher M. *Výrovnávací počet.* SNTL Praha, 1964.
- **Recommended:** Cimbálník M., Mervart L. *Vyšší geodézie 1 (skriptum).* Ediční středisko ČVUT Praha, 1997.
- **Recommended:** Mervart L., Cimbálník M. *Vyšší geodézie 2 (skriptum).* Ediční středisko ČVUT, 1997.

Time requirements

All forms of study

Activities	Time requirements for activity [h]
Team project (50/number of students)	20
Practical training (number of hours)	80
Preparation for laboratory testing; outcome analysis (1-8)	50
Total:	150

assessment methods

Skills - skills achieved by taking this course are verified by the following means:

Skills demonstration during practicum
Individual presentation at a seminar
Project

Competences - competence achieved by taking this course are verified by the following means:

Skills demonstration during practicum
Individual presentation at a seminar
Project

prerequisite

Knowledge - students are expected to possess the following knowledge before the course commences to finish it successfully:

popsat strukturu a možnosti budování výškových a polohových bodových polí na území ČR
aplikovat a rozumět významu ustanovení právních předpisů, vyhlášek a norem oboru zeměměřičství

popsat přímé a nepřímé metody sběru geodat

vysvětlit zásady a principy statistického hodnocení souboru velkého počtu měřených dat

Skills - students are expected to possess the following skills before the course commences to finish it successfully:

pracovat s geodetickým vybavením sloužícím pro sběr geodat

Competences - students are expected to possess the following competences before the course commences to finish it successfully:

N/A

N/A

teaching methods

Skills - the following training methods are used to achieve the required skills:

Field trip

Skills demonstration

Individual study

Group discussion

Multimedia supported teaching

Competences - the following training methods are used to achieve the required competences:

Skills demonstration

learning outcomes

Skills - skills resulting from the course:

to make project for densification of horizontal ground control and observation of complementary net

to survey planimetry and hypsometry using geodetic apparatuses and instruments after standards and rules in operation

to measure and calculate position and elevation of detailed horizontal ground control points with the analysis of accuracy

Competences - competences resulting from the course:

N/A

N/A

N/A

Course is included in study programmes:

Study Programme	Type of	Form of	Branch	Stage	St. plan v.	Year	Block	Status	R.year	R.
Civil Engineering	Bachelor	Full-time	Land-use Planning	1	2017	2023	Povinné předměty	A	2	LS
Civil Engineering	Bachelor	Full-time	Land-use Planning	1	2020	2023	Povinné předměty	A	2	LS