# Course description

Course abbreviation:	KGM/AVTG2		1 0			Page:	1/3
Course name: Academic Year:	Computer App 2023/2024	olications in Geo	odesy 2		Printed:	13.07.2025	10:30
Department/Unit /	KGM / AVTC	12			Academic Year	2023/2024	
Title	Computer Applications in Geodesy 2				Type of completion	Exam	
Accredited/Credits	Yes, 5 Cred.				Type of completion	Combined	
Number of hours	Lecture 1 [Ho	Lecture 1 [Hours/Week] Seminar 3 [Hours/Week]					
Occ/max	Status A	Status B	Status C		Course credit prior to	Yes	
Summer semester	0 / -	0 / -	0 / -		Counted into average	YES	
Winter semester	1 / -	0 / -	0 / -		Min. (B+C) students	1	
Timetable	Yes				Repeated registration	NO	
Language of instruction	Czech				Semester taught	Winter, Su	mmer
Optional course	Yes				Internship duration	0	
Evaluation scale	1 2 3 4				Ev. sc. – cred.	S N	
No. of hours of on-premise							
Auto acc. of credit	Yes in the cas	Yes in the case of a previous evaluation 4 nebo nic.					
Periodicity	every year	every year					
Specification periodicity							
Substituted course	KMA/AVTG2	2					
Preclusive courses	N/A						
Prerequisite courses	N/A						
Informally recomm	nended courses	N/A					
Courses depending on this Course		N/A					

## Course objectives:

Digital map in vector format. Digital cadastral map (DKM), a set of geospatial information, a set of descriptive information. Maintenance of DKM. Practical examples of the graphical environment. Knowledge from this course are required in the course KMA / TGI.

#### Requirements on student

Processing of measured data. Visualization and distribution of created geodata through web services.

#### Content

- ? CAD data model and GIS data model. CAD based data processing in the software Kokes - formats \*. VYK, \*. vtx, and other vector formats.
- ? Draft of data model for large scale map.
- ? Practical processing of large scale maps.
- ? Topology and object map, with connection of attribute data.
- ? Creation of geodetic data for ground control points.
- ? Digital terrain model and generation of contour lines.
- ? ? ? ? CAD and GIS data conversion. .
- Reference coordinate systems in GIS.
- Basics of distribution of geodata using Web mapping services.
- Server and client software for the sharing of geodata in a web environment

# Fields of study

Studentům je k dispozici kurz v Google Classroom se všemi podstatnými informacemi a materiály.

## Guarantors and lecturers

•	Guarantors:	Ing. Pavel Hájek, Ph.D.
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- Lecturer: Ing. Pavel Hájek, Ph.D. (100%)
- Tutorial lecturer: Ing. Pavel Hájek, Ph.D. (100%)

## Literature

Peng, Zhong-Ren; Tsou, Ming-Hsiang. Internet GIS : distributed geographic information services for
the internet nad wireless networks. [Hoboken] : John Wiley & Sons, Inc., 2003. ISBN 0-471-35923-8.
Kokeš příručka uživatele. Praha GEPRO.
Huml M., Michal J. Mapování 10. Vydavatelství ČVUT, Praha, 2000.
Vybrané specifikace OGC - http://www.opengeospatial.org/ >

# Time requirements

#### All forms of study

Activities	Time requirements for activity [h]
Contact hours	65
Practical training (number of hours)	5
Undergraduate study programme term essay (20-40)	20
Preparation for comprehensive test (10-40)	10
Preparation for an examination (30-60)	30
Preparation for laboratory testing; outcome analysis (1-8)	8
Total:	138

#### assessment methods

Knowledge - knowledge achieved by taking this course are verified by the following means:

Combined exam

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

Individual presentation at a seminar

Seminar work

Skills demonstration during practicum

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

Finding out the level and amount of acquired knowledge and skills

#### teaching methods

## Knowledge - the following training methods are used to achieve the required knowledge:

Cooperative instruction

Lecture with visual aids

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

Practicum

Project-based instruction

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

Implement the information obtained to solve specific practical tasks

#### learning outcomes

#### Knowledge - knowledge resulting from the course:

Creating a topologically correct digital map in vector form

Creation of a digital terrain model and its possibilities of expression

Export of CAD data model to GIS data model

Web map services and their use

Creation of three-dimensional geometry of an object

Introduction to the concept of Building Information Management

#### Skills - skills resulting from the course:

practically use available software for spatial data processing

process the measured data in the form of a digital map

create a data model for CAD

convert data model for CAD to GIS

#### Competences - competences resulting from the course:

Plan a time and cost independent solution of the given problem

#### 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	А	3	ZS
Civil Engineering	Bachelor	Full-time	Land-use Planning	1 2020	2023	Povinné předměty	А	3	ZS
Geomatics	Bachelor	Full-time	Geomatika	1 2022 akr	2023	Povinné předměty	А	3	ZS
Geomatics	Bachelor	Full-time	Geomatika	1 2023	2023	Povinné předměty	А	3	ZS
Geomatics	Bachelor	Full-time	Geomatics	1 2018	2023	Oborové předměty povinné	Α	3	ZS