Course description

Department/Unit /	KGM / TOMA			**Academic Year**	2023/2024	
Title	Topographical Mapping			**Type of completion**	Exam	
Accredited/Credits	Yes, 5 Cred.			**Type of completion**	Combined	
Number of hours	Lecture 2 [Hours/Week] Seminar 2 [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	0 / -	0 / -	0 / -	**Min. (B+C) students**	1	
Timetable	Yes			**Repeated registration**	NO	
Language of instruction	Czech			**Semester taught**	Winter, Summer	
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 case of a previous evaluation 4 nebo nic.					
Periodicity	K					
Substituted course	KMA/TOMA					
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 the subject is to acquaint the students with following topics: Topographic maps - typical features. History of topographic mapping. State base and
thematic map series in medium scales. Methodology of topographic map evaluation.
Historical and up-to-date methods of planimetric and altimetric survey in topographic
mapping. Forms of terrain relief. Methods of updating topographic map(Base Map of the Czech
Republic) till 2000 and now. Fundamental Base of Geographic Data
(ZABAGED). Digital terrain model - methods of creating and its applications.
Cartographic processing and editing of state map series - conventional and digital
technologies.

Requirements on student

Credit is dependent on compilation of semester paper.
Oral examination only.

Content

Topographical mapping and interconnected subjects
Definition of a map, status of topographical maps
State map series in medium scales in the Czech Republic
Examples of topographical maps from abroad
Regulation of the Government No 430/2006 Coll.
Comparison of contents and features of domestic and foreign topographical maps - subjective point of view
Language of topographical map, Elements of topographical map, Catalogue of cartographic symbols
Catalogues of basic and military topographical maps
Operations with a map: reading, profile, inclination, hidden space
Review of cartographic projections used in topographical mapping in the Czech Republic
Cartographic evaluation of historical maps in the territory of Pilsen´s region

History of topographical mapping in examples
Computer compilation of the Basic map of the Czech Republic
Methods of topographical mapping (historical methods, contemporary methods)
Deriving of topographical maps
Mapping of planimetry, Fundamentals of planimetry
Technology of geodetic surveying
Technology of photogrammetric surveying
Mapping of hypsometry
Morphology of terrain shapes
Types of terrain and terrain surfaces
Methods of hypsometric representation
Geodetic surveying of hypsometry, Photogrammetric surveying of hypsometry
Computational and graphical operations
Automatized compilation of DTM
Preparation and solution of contour line test (Tachov locality)
Conventional methods of updating and renowal of topographical maps
ZABAGED conception, Creating and updating of ZABAGED
Cartographic processing of topographical maps
Reproduction and print of medium scale maps
Publishing of state map series (editorial plan)
Application of author´s right
Information system of surveying and mapping
Metadata on state map series
Computer processing of topographical maps
European and worldwide databases
National geoinformation infrastructure of the Czech Republic
Orthophoto imagery of the Czech Republic
Project of a new hypsometry of the Czech Republic
New trends in topographical mapping

Fields of study

Studentům jsou k dispozici pdf. verze prezentací z přednášek se všemi důležitými informacemi pro probírané téma, dále pak podklady ke cvičením.

Guarantors and lecturers

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

Literature

- **Recommended:** Veverka, Bohuslav. *Topografická a tematická kartografie 10*. Praha : Vydavatelství ČVUT, 2001. ISBN 80-01-02381-8.
- **Recommended:** John N. Hatzopoulos. *Topographic Mapping: Covering the Wider Field of Geospatial Information Science & Technology (GIS & T)*. Universal-Publishers, 2008. ISBN 9781581129861.

Time requirements

All forms of study

Activities	Time requirements for activity [h]
Undergraduate study programme term essay (20-40)	20
Preparation for an examination (30-60)	48
Contact hours	64

Total:	132

assessment methods

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

Oral exam

Individual presentation at a seminar

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

Oral exam

Individual presentation at a seminar

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

Oral exam

Individual presentation at a seminar

prerequisite

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

orientovat se v používaných kartografických zobrazeních

rozumět zákonitostem kartografických zkreslení

rozumět středovému promítání

orientovat se v geometrických transformacích

rozeznat základní geomorfologické útvary

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

konstruovat základní geometrické objekty v rovině

rozeznat barevné stupnice

určovat světové strany podle kompasu

určovat cesty v používaných mapách

používat rýsovací pomůcky

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

N/A

N/A

N/A

N/A

N/A

teaching methods

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

Lecture supplemented with a discussion

Interactive lecture

Multimedia supported teaching

Individual study

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

Practicum

Multimedia supported teaching

Task-based study method

Individual study

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

Lecture

Interactive lecture

Individual study

learning outcomes

Knowledge - knowledge resulting from the course:

rozeznat geomorfologické tvary

orientovat se v mechanismu produkce státních mapových děl středních měřítek

popsat postupy tvorby a aktualizace základních a tématických státních mapových děl středních měřítek

orientovat se v historickém vývoji tvorby topografických map

orientovat se v používaných termínech a postupech v oblasti topografického mapování

Skills - skills resulting from the course:

podílet se na tvorbě a aktualizaci mapových děl středních měřítek

zakreslit a charakterizovat geomorfologické tvary

určit z mapy prostorové souřadnice objektu, velikost útvarů, svahové poměry

řešit základní topografické analytické úlohy (sklon, viditelnost, orientaci svahů)

vyhotovit vrstevnicový plán v terénu

Competences - competences resulting from the course:

N/A

N/A

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.
Geomatics	Bachelor	Full-time	Geomatika	1	2022 akr	2023	Povinné předměty	A	2	ZS
Geomatics	Bachelor	Full-time	Geomatika	1	2023	2023	Povinné předměty	A	2	ZS
Geomatics	Bachelor	Full-time	Geomatics	1	2018	2023	Oborové předměty povinné	A	2	ZS