COURSE OUTLINE

1. Study programme information

1.1 Higher education institution	Universitatea de Vest din Timişoara
1.2 Faculty / Department	Chimie, Biologie, Geografie / Departamentul de Geografie
1.3 Sub-department	Geografie
1.4 Field of study	Geography
1.5 Level of study	Master's degree
1.6 Study programme / Qualification	Geographic Information Systems

2. Course information

2.1 Course title			**Digital cartography**			
2.2 Course convenor/ Lecturer			Lect. Univ. Dr. Alina Satmari			
2.3 Teaching assistant			Lect. Univ. Dr. Alina Satmari			
2.4 Year of study	1	2.5 Semester	2	2.6 Type of assessment	E	2.7 Course type	DS/DOP

3. Total estimated time (hours of didactic activities per semester)

3.1 Number of hours per week	3	of which: 3.2 lecture	1	3.3 practical activity	2
3.4 Total hours in the curriculum	42	of which: 3.5 lecture	14	3.6 practical activity	28

Time distribution:	hours
Studying textbooks, course materials, bibliography and notes	23
Further research in libraries, on electronic platforms and in the field	23
Preparing seminars/ laboratories, homework, research papers, portfolios and essays	30
Tutoring	4
Examinations	3
Other activities ……………………………………	

3.7 Total hours of individual study	**83**
3.8 Total hours per semester	**125**
3.9 Number of credits	**5**

4. Prerequisites (if applicable)

4.1 based on curriculum	
4.2 based on competencies	

5. Conditions (if applicable)

5.1 for the course	- Computer / laptop for the teacher and students - internet access; access to the E-learning UVT platform. - white board, video projector
5.2 for the practical activity	- complete fulfilment of tasks of laboratory work and projects - Computer / laptop for the teacher and students; - internet access; access to the Elearning UVT platform; - white board, video projector

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6. Objectives of the discipline - expected learning outcomes to the formation of which contribute to the completion and promotion of the discipline

Knowledges	• Knowledge of concepts in digital cartography (between digital space and digital information) • Theoretical knowledge and techniques on digital design • Theoretical knowledge and techniques on graphical semiology and map projections • Understanding the role of *3d space* in digital cartography • Understanding the role of *dynamics* in digital cartography • Understanding the role of *time* in digital cartography
Skills	• Operational skills in specific software • Operational skills in ArcGIS, GeoDA • Create suitable cartographic representation of different natural phenomena
Responsibility and autonomy	• The ability to correctly/effectively identify and plan tasks specific to a particular GIS project. • The application of effective and responsible work strategies, based on the principles, norms and values of the code of professional ethics. • Application of effective work techniques in a multidisciplinary team, ethical attitude, respect for diversity and multiculturalism, acceptance of diversity of opinion • Self-assessment of the need for continuous professional training for the purpose of insertion and adaptability to the requirements of the labor market • Capitalizing on the results obtained to analyses, studies and GIS projects

7. **Content**

7.1 Lecture	Teaching methods	Observations
Why good design matters – new challenges in *digital cartography*	Lecture, Interactive presentations, heuristic, conversation, problematization and hands-on examples	1 hour
Online graphical processing of base maps		1 hour
Spatial data – special drivers		1 hour
The freedom of digital layouts: zooming & linking		1 hour
Map projections in digital cartography or how to lie with maps		1 hour
Graphical semiology – theoretical and practical framework		2 hours
Features – the hearth of maps		1 hour
What colour are you today? – chromatics meaning		1 hour
Fonts & the power of words		1 hour
Interactive Atlases (eg. cartograms)		1 hour
Place & Representation (the 3d city)		1 hour
Mapping fluid spaces (dynamic maps)		1 hour
Digital cartography for media		1 hour

• **Bibliography**
• Kraak M-J, Ormeling F, 2010, *Cartography. Visualization of Spatial Data*, Pearson, 249 p;
• Krygier, J, Wood D, 2011, *Making maps: a visual guide to map design for GIS*, The Guilford Press, New York, 280 p;
• Slokum T.A., Mc.Master R.B., Kessler F.C., Howard H.H. 2009 *Thematic cartography and Geographic Visualization*, Prentice Hall
• Monmonier M, 1996, *How to lie with maps*, University of Chicago Press, Chicago, 207 p;
• Peterson GN, 2009, *GIS Cartography. A Guide to Effective Map Design*, Taylor & Farancis Group, 224 p;
• Robinson AH (coord.) 1995, *Elements of cartography*, Wiley & Sons, 674 p;
• http://gitta.info/LayoutDesign
• Course and practical activity materials, presentations and references posted on Elearning UVT Platform

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• 7.2 Practical activity	Teaching methods	Observations
Base maps	Hands-on exercises, case studies, scientific explanation, and demonstration.	2 hours
Layouts		4 hours
Map projection		2 hours
Symbology		4 hours
Colours		4 hours
Fonts		2 hours
Cartograms		4 hours
3D representations		2 hours
Dynamic maps		2 hours
Final project		2 hours

Bibliography
- Literature will be selected individually, according to research interests of the students.
- Course and practical activity materials, presentations and references posted on Elearning UVT Platform (https://elearning.e-uvt.ro/)

8. **Corroborating course content with the expectations held by the representatives of the epistemic community, professional associations and typical employers in the field of the study programme.**

The content of the discipline was developed in accordance with the curriculum and meets the didactic and scientific requirements corresponding to similar specializations in other university centers. This course will offer the theoretical framework and specific hands-on abilities for large spatial data-sets manipulation and assessment. Cartographic techniques are necessary skills to start-up any scientific projects. The software used in the practical applications are among the most modern and frequently used in specialized institutions. Such applied training makes students compatible with the job market in the field of geographic information systems, or research activity.

9. **Assessment**

Type of activity	9.1 Assessment criteria	9.2 Assessment methods	9.3 Weight in the final mark
9.4 Lecture	Interactivity, active participation	Oral evaluation	20%
9.5 Practical activity	The degree to which students conduct an exploratory spatial data analysis. Structure and contents of the practical project.	Evaluation of: Correctness of cartographic representations	80%
9.6 Minimum performance standard			
• Minimum mark 5 at course evaluation. • Minimum mark 5 at practical activities.			

Date

12.02.2024

Course convenor's signature

Lect. Dr. Alina Satmari

Date of approval in the department

Head of department's signature

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