COURSE OUTLINE

1. Study programme information

1.1 Higher education institution	Universitatea de Vest din Timişoara
1.2 Faculty / Department	Chimie-Biologie-Geografie/Geografie
1.3 Sub-department	
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				Geomorphometry			
2.2 Course convenor/ Lecturer				Prof. Dr. Lucian DRĂGUŢ			
2.3 Teaching assistant				Prof. Dr. Lucian DRĂGUŢ			
2.4 Year of study	II	2.5 Semester	I	2.6 Type of assessment	E	2.7 Course type	DI

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

3.1 Number of hours per week	4	of which: 3.2 lecture	2	3.3 seminar/laboratory	2
3.4 Total hours in the curriculum	56	of which: 3.5 lecture	28	3.6 seminar/laboratory	28
Time distribution:					**hours**
Studying textbooks, course materials, bibliography and notes					20
Further research in libraries, on electronic platforms and in the field					20
Preparing seminars/ laboratories, homework, research papers, portfolios and essays					30
Tutoring					20
Examinations					4
Other activities ……					
3.7 Total hours of individual study	**94**				
3.8 Total hours per semester	**150**				
3.9 Number of credits	**6**				

4. Prerequisites (if applicable)

4.1 based on curriculum	·
4.2 based on competencies	·

5. Conditions (if applicable)

5.1 for the course	·
5.2 for the seminar/laboratory	·

6. Accumulated specific competencies

Professional competencies	• Knowledge of concepts in geomorphometry • Understanding Digital Elevation Models (DEMs) and their processing • Understanding the differences between general and specific geomorphometry • Knowledge on computing the basic geomorphometric variables • Knowledge on analysis and classification of geomorphometric objects • Understanding the impact of DEM errors on geomorphometric analysis • Understanding the importance of algorithms and differences they can lead to • Understanding the role of scale in analysis • Operational skills in ArcGIS, SAGA GIS, LandSerf, and eCognition
Transversal competencies	• Understanding of ethics in academic conduct (correct citations, avoiding plagiarism, avoiding fabrication) • Developing team working abilities.

7. Course objectives (as resulting from the accumulated specific competencies)

7.1 General objective	Students are able to professionally analyze a Digital Elevation Model.
7.2 Specific objectives	

8. Content

8.1 Lecture	**Teaching methods**	**Observations**
1. Geomorphometry: general framework 2. Mathematical and digital models of the land surface 3. DEM production methods and sources 4. Preparation of DEMs for geomorphometric analysis 5. Error propagation in geomorphometry 6. Basic land-surface variables 7. Scale in geomorphometric analysis 8. Geomorphometric objects and their classification 9. Software packages used in geomorphometry 10. Applications of geomorphometric analysis in geography and related fields.	Lectures combined interactively with hands-on exercises.	
Bibliography Hengl, T., Reuter, H.I. (Eds.) (2009), *Geomorphometry. Concepts, Software, Applications.* Elsevier.		
8.2 Seminar / laboratory	**Teaching methods**	**Observations**
1. Acquisition of SRTM DEMs and their visual analysis 2. TIN representation and comparison with gridded models 3. Identification and removal of errors in	Hands-on exercises.	

DEMs 4. Derivation of basic land-surface variables using different algorithms and quantitative comparison of the results 5. Statistical analysis of land-surface variables 6. Conducting geomorphometric analysis at various scales and comparing the results 7. Derivation of stream network and basins 8. Segmentation and classification of DEMs 9. Team project		
Bibliography Literature will be selected individually, according to research interests of the students.		

9. 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

Course content will offer the students the necessary skills to start-up research projects leading to MSc Theses. Some projects are expected to end-up in journal publications. Skills acquired here and developed further will enable students starting a PhD program.

10. Assessment

Type of activity	10.1 Assessment criteria	10.2 Assessment methods	10.3 Weight in the final mark
10.4 Lecture			0 %
10.5 Seminar / laboratory	The degree to which students are able to conduct geomorphometric analysis.		100 %
10.6 Minimum performance standard			
.			

Date Course convenor's signature Teaching assistant's signature

13.09.2022

Date of approval in the department Head of department's signature