COURSE OUTLINE

1. Study programme information

1.1 Higher education institution	West University of Timisoara
1.2 Faculty / Department	Chemistry, Biology, Geography / Geography
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				Geostatistics			
2.2 Course convenor/ Lecturer				Lector dr. Șandric Ionuț			
2.3 Teaching assistant				Lector dr. Șandric Ionuț			
2.4 Year of study		2.5 Semester		2.6 Type of assessment		2.7 Course type	

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					15
Further research in libraries, on electronic platforms and in the field					25
Preparing seminars/ laboratories, homework, research papers, portfolios, and essays					25
Tutoring					15
Examinations					14
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	• Basic knowledge of statistics
4.2 based on competencies	• Basic knowledge of GIS software

5. Conditions (if applicable)

5.1 for the course	• Compulsory presence at half of the meetings
5.2 for the seminar/laboratory	• Compulsory presence at half of the meetings

6. Accumulated specific competencies

Peofessional competencies	• knowledge of the basics of Geostatistics • knowledge of 2D interpolation methods • knowledge of 3D interpolation methods
Transversal competencies	• understanding of ethics in academic conduct (correct citations, avoiding plagiarism) • developing team working abilities • developing communication skills to present relevant results in the field of geosciences

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

7.1 General objective	• Apply optimal interpolation methods
7.2 Specific objectives	• formulate a title and design a research project based on the use of geostatistics data in the field of geosciences (problem, hypothesis, objectives, methodology) • search, acquire and import relevant geostatistics datasets for the proposed project • generate 2D surfaces using geostatistics methods

8. Content

8.1 Lecture	**Teaching methods**	**Observations**
Introduction in Geostatistics	Lectures	
Visualization of geostatistics datasets	Lectures	
Interpolation methods - deterministic	Lectures	
Interpolation methods - probabilistic	Lectures	
Kriging interpolation methods	Lectures	
3D interpolation methods	Lectures	

Bibliography

- Isaaks E., Srivastava R. (1989), Introduction to Applied Geostatistics, Ed. Oxford
- Scrădeanu D., Popa R., 2001, Geostatistică aplicată, Bucureşti (2001)
- Christakos G., Bogaert P., Serre M. (2001), Temporal GIS, Springer
- Hengl T. (2009) A Practical Guide to Geostatistical Mapping
- https://learn.arcgis.com

8.2 Seminar / laboratory	**Teaching methods**	**Observations**
• Introduction in Geostatistics	Hands-on exercises	
• Datasets used in Geostatistics	Hands-on exercises	
• Deterministic interpolation methods	Hands-on exercises	
• Probabilistic interpolation methods	Hands-on exercises	
• Semivariogram	Hands-on exercises	
• Various kriging interpolation methods	Hands-on exercises	
• 3D interpolation methods	Hands-on exercises	

Bibliography

- Isaaks E., Srivastava R. (1989), Introduction to Applied Geostatistics, Ed. Oxford
- Scrădeanu D., Popa R., 2001, Geostatistică aplicată, Bucureşti (2001)
- Christakos G., Bogaert P., Serre M. (2001), Temporal GIS, Springer
- Hengl T. (2009) A Practical Guide to Geostatistical Mapping
- https://learn.arcgis.com

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 acquire, integrate, process and analyze different types of geospatial data using 2D and 3D interpolations. The course will offer several software solutions (commercial and open-source) used by companies in the field of applied Geostatistics.

10. Assessment

Type of activity	10.1 Assessment criteria	10.2 Assessment methods	10.3 Weight in the final mark
10.4 Lecture	Knowledge and understanding of concepts in Geostatistics	Oral exam	30%
10.5 Seminar / laboratory	Geostatistics project	Written report	20%
	Final project in Geostatistics	Presentation of results generated in the research project (oral evaluation)	50%
10.6 Minimum performance standard			
• grade 5 as a mean of evaluation percentage from the above mentioned compulsory activities			

Data completării — Semnătura titularului de curs — Semnătura titularului de seminar

15.09.2021

Data avizării în catedră/departament — Semnătura şefului catedrei/departamentului