



Bachelor Program in Geophysics

Faculty of Mathematics and Natural Sciences
HASANUDDIN UNIVERSITY

15. Geostatistics

Module Name	:	Geostatistics
Module Level	:	Bachelor
Code, if applicable	:	23H06120602
Subtitle, if applicable	:	-
Courses, if applicable	:	Geostatistics
Semester(s) in which the module is taught	:	III (Third Semester)
Module coordinator(s)	:	Prof. Dr. Halmar Halide, M.Sc.
Lecturer(s)	:	Prof. Dr. Halmar Halide, M.Sc.
Language	:	Bahasa (Indonesian language)
Relation to curriculum	:	Compulsory course in the second year for Bachelor Degree in Geophysics
Type of teaching, contact hours	:	This course is delivered through Lectures (i.e., Case-based learning), complemented by structured assignments (paper review, project/case evaluation) and independent study. Contact hours consist of 100 minutes lectures per week, plus 120 minutes per week for each of the following: structured assignments and independent study
Workload	:	Total workload is 90 hours per semester, consisting of 28 hours for lectures, and 31 hours each for structured assignments and independent study
Credit points	:	2 SKS (3.2 ECTS)
Requirements according to the examination regulations	:	Students are eligible to attend the examination if their absences are less than 20% of the lectures
Recommended prerequisites	:	-
Module objectives/intended learning outcomes	:	After completion of this module, students will be able to: CLO 1. Able to process data, apply statistical inference methods and apply correlation analysis to detect the existence of natural resources and mitigate disasters; CLO 2. Able to carry out spatial analysis for natural resource zoning and disaster mitigation. The following is the mapping of the ILO and the CLO of this course:



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				ILO 5	ILO 8	ILO 11	ILO 14																														
		CLO 1	✓	✓																																	
		CLO 2				✓	✓																														
Content	:	- correlation and regression; - spatial data analysis.																																			
Study and examination requirements		Participants are marked based on their performance in theory: Case Study (100%). Students are marked based on their percentage of points obtained and based on the following grade scale: <table><tr><th>Percentage of Achievement</th><th>Grade</th><th>Conversion Value</th></tr><tr><td>85 – 100</td><td>A</td><td>4.00</td></tr><tr><td>80 - <85</td><td>A-</td><td>3.75</td></tr><tr><td>75 - < 80</td><td>B+</td><td>3.5</td></tr><tr><td>70 - < 75</td><td>B</td><td>3.0</td></tr><tr><td>65 - < 70</td><td>B-</td><td>2.75</td></tr><tr><td>60 - < 65</td><td>C+</td><td>2.5</td></tr><tr><td>50 - < 60</td><td>C</td><td>2.00</td></tr><tr><td>40 - < 50</td><td>D</td><td>1.00</td></tr><tr><td>< 40</td><td>E</td><td>0.00</td></tr></table>						Percentage of Achievement	Grade	Conversion Value	85 – 100	A	4.00	80 - <85	A-	3.75	75 - < 80	B+	3.5	70 - < 75	B	3.0	65 - < 70	B-	2.75	60 - < 65	C+	2.5	50 - < 60	C	2.00	40 - < 50	D	1.00	< 40	E	0.00
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50 - < 60	C	2.00																																			
40 - < 50	D	1.00																																			
< 40	E	0.00																																			
Exams and assessment formats	:	Assessment in this course is entirely case-study based. Students are provided with real or simulated cases, which they analyze in depth by processing and interpreting data, preparing a written report, and presenting their findings. The case studies are evaluated by the lecturer, with feedback given for revisions. Final assessment is determined by the quality of the analysis, accuracy of problem-solving, and the completeness of the revised report.																																			
Reading list		Main References: 1. Caers, J. (2005). Petroleum Geostatistics. Society of Petroleum Engineers.																																			



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	2. Isaaks, E. H., and R. Mohan Srivastava (1990). An introduction to applied geostatistics. Oxford: Oxford Univ Press. 3. MCKILLUP, S. and M. D. Dyar, 2010. Geostatistics Explained - An Introductory Guide for Earth Scientists. Cambridge: Cambridge. 4. Montero, J-M., Gema Fernández-Avilés, Jorge Mateu (2015). Spatial and spatio-temporal geostatic modeling and kriging. & Nbsp; New Jersey: John Wiley & amp; Sons. Additional References: 1. Wakernagel, H. (2013). Multivariate Geostatistics: An Introduction with Application. New York: Springer-Verlag.
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