



Bachelor Program in Geophysics

Faculty of Mathematics and Natural Sciences

HASANUDDIN UNIVERSITY

15. Geospatial Analysis

Module Name	:	Geospatial Analysis						
Module Level	:	Bachelor						
Code, if applicable	:	23H06130602						
Subtitle, if applicable	:	-						
Courses, if applicable	:	Geophysics Study Program						
Semester(s) in which the module is taught	:	V (Fifth Semester)						
Module coordinator(s)	:	Dr. Samsu Arif, M.Si.						
Lecturer(s)	:	Dr. Samsu Arif, M.Si. Aswar Syafnur, S.Si., M.Eng.						
Language	:	Bahasa (Indonesian language)						
Relation to curriculum	:	Elective courses in the third year of the Bachelor of Geophysics program						
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.Students are able to implement spatial analysis using GIS tools into the design of spatial problem-solving and as support in decision-making. The following is the mapping of the ILO and the CLO of this course: <table><tr><td></td><td>ILO 7</td><td>ILO 10</td><td>ILO 13</td></tr></table>				ILO 7	ILO 10	ILO 13
	ILO 7	ILO 10	ILO 13					



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		CLO 1	✓	✓	✓																														
Content	:	1. Introduction to Geographic Information Systems (GIS) 2. Advanced Spatial Analysis Techniques 3. GIS Applications in Disaster Mitigation 4. GIS for Urban and Environmental Planning 5. GIS for Land Suitability Analysis 6. GIS for Resource and Population Mapping 7. Introduction to WebGIS 8. Development of Simple WebGIS Projects 9. Case Studies in Spatial Problem Solving																																	
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
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																																	
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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																																	



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	assessment is determined by the quality of the analysis, accuracy of problem-solving, and the completeness of the revised report.
Reading list	1. Main References: 1. Aronoff, S. 1990. Geographic Information System : A Management Perspective. WDL Publication. Ottawa 2. Burrough, P.A. 1989. Principles of Geographic Information System For Land Resources Assessment. MONOGRAPHS ON Soiland Resources Survey No.12 Clarendon Press. Oxford. 3. Fischer, M.M. and Nijkamp, (eds). 1993. Geographic Information Syetem, Spatial Modelling and Policy Evalution. Verlag .Berlin 4. Monmonier, M.S. 1982. Computer Assisted Cartograpy- Principle and Prospects 5. Bolstad, Paul. 2019. GIS Fundamental: A First Text on GIS. XanEdu Publishing Inc. USA. 6. Star. J. and Estes, J.E. 1990. Geographic Information System : An Introdution. Prentice Hall, Englewood Cliff. New Jersey Additional References: 1. S. G. Makridakis, S. C. Wheelwright , and Rob J Hyndman, 1998. Forecasting: Methods and Applications, 3rd Edition, John Wiley & Sons
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