



Bachelor Program in Geophysics

Faculty of Mathematics and Natural Sciences
HASANUDDIN UNIVERSITY

25. Seismic Data Interpretation

Module Name	:	Seismic Data Interpretation
Module Level	:	Bachelor
Code, if applicable	:	23H06131603
Subtitle, if applicable	:	-
Courses, if applicable	:	Seismic Data Interpretation
Semester(s) in which the module is taught	:	V (Fifth Semester)
Module coordinator(s)	:	Sabrianto Aswad, S.Si., MT
Lecturer(s)	:	Ir. Bambang Hari Mei Soeprapto, M.Si., Sabrianto Aswad, S.Si., MT
Language	:	Bahasa (Indonesian language)
Relation to curriculum	:	Elective course in the third year for Bachelor Degree in Geophysics
Type of teaching, contact hours	:	This course is delivered through Lectures (i.e., Project/Case-based learning), complemented by structured assignments (paper review, project/case evaluation) and independent study. Contact hours consist of 150 minutes lectures per week, plus 180 minutes per week for each of the following: structured assignments and independent study
Workload	:	Total workload is 135 hours per semester, consisting of 38 hours for lectures, and 48.5 hours each for structured assignments and independent study
Credit points	:	3 SKS (4.8 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 analyze seismic waves and their relationship to aspects of earth science and exploration; CLO 2. Students are able to identify regional geological potential in Indonesia and hydrocarbon and geotechnical exploration processes. The following is the mapping of the ILO and the CLO of this course:



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				ILO 4	ILO 6	ILO 8	ILO 12																														
		CLO 1	✓	✓																																	
		CLO 2				✓	✓																														
Content	:	1. Seismic Data Types and Resolution 2. Basic Concepts of Well Log Data and Tie-In 3. Structural Interpretation from Seismic Data 4. Applications of Seismic Attributes 5. Principles of Seismic Stratigraphy 6. Amplitude Versus Offset (AVO) 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><thead><tr><th>Percentage of Achievement</th><th>Grade</th><th>Conversion Value</th></tr></thead><tbody><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></tbody></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																																			
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40 - < 50	D	1.00																																			
< 40	E	0.00																																			
Exams and assessment formats		Assessment in this course is conducted entirely through case studies, designed to evaluate both theoretical understanding and practical application of CLO 1 and CLO 2. This work is developed over several weeks under instructor guidance, culminating in a written report and an oral presentation of results.																																			



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Reading list	1. Main References: 1. Bacon, M., Simm, R. and Redshaw, T., 2003, 3-D Seismic Interpretation, Cambridge University Press, Cambridge 2. Brown A. R. (2004) Interpretation of three-dimensional seismic data: SEG and AAPG 3. Ozdogan Yilmaz and Stephen M. Doherty, 2000, Seismic Data Analysis: Processing, Inversion, and Interpretation of Seismic Data, SEG, Tulsa Additional References: 1. Yilmaz, O., Seismic Data Processing, Society of Exploration Geophysics, 1987 2. Sheriff, R.E. & Geldart, L.P. Exploration Seismology. 1987 Hefferan, K. & O'Brien, J. 2010. Earth Materials. Wiley-Blackwell.
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