PROGRAM PLAN AND SEMESTER LEARNING ACTIVITIES (RPKPS) SCHOOL YEAR 2021/2022

Geophysics

Geophysical Analysis Method I

MFG 2106/ 3 credits

Mentoring Team:

UNIVERSITAS GADJAH MADA FACULTY OF MATHEMATICS AND NATURAL SCIENCES

2021

	Gadjah Mada University Faculty of Mathematics and Natural Sciences Department of Physics / S1 Geophysics Study Program Academic Year 2021/2022	**Document Code:** .....

SEMESTER LEARNING PROGRAM AND ACTIVITY PLAN (RPKPS)

Course Code	Course Name	Weight (credit)		Semester	Course Status	Prerequisite Courses
MFG 4645	*Seismic Attributes*	*T:2*	*P:*	*Odd*	*Choice*	*Minimum 60 credits*

Course Brief Description	After attending the course, students are expected to; know and calculate various types of seismic instruments, analyze pre/post-stack 2D/3D seismic attributes, use seismic attributes for hydrocarbon exploration and exploitation (oil and gas).	
Graduate Learning Outcomes (CPL) Charged n in MK	***CPL-2***	**Mastery of general knowledge:** Graduates are able to apply basic science (mathematics, physics, chemistry, biology, geology), and geophysics in general and their relationship with other sciences such as geology, geodesy, geochemistry, geography, computing and information technology.
	CPL-4	**Application and analysis skills**: Graduates are able to carry out and manage a geophysical survey which includes scientific steps in the acquisition, processing and interpretation of data for the exploration of natural resources both for energy (e.g. oil and gas, coal, for energy exploration (e.g. oil and gas, coal, geothermal), mining materials (eg: iron, copper, gold, silver, tin) as well as groundwater and disaster mitigation.
	CPL-5	**Synthesis and Evaluation Skills:** Graduates are able to interpret geophysical data in the form of solving advanced and reverse problems (inverse problems) in an integrated manner that have ambiguous characters, carry out interpretation by making models and / or solving simple forward and reverse problems and are skilled in the use of computers both for the purposes of solving geophysical problems and for communication and internet access.
Course Learning Outcomes (CPMK)	**After completing the learning of this course, students are expected to be able to:**	
	CPMK-1	Able to know various seismic attributes and how to calculate them
	CPMK-2	Able to manage pre/post-stack seismic data into workstations and calculate their seismic attributes
	CPMK-3	Able to evaluate and analyze attribute results into a geological framework

CPL Mapping with CPMK

	CPMK1	CPMK2	CPMK3
CPL-2	X		
CPL-4		X	
CPL-5			X

CPMK link with		Learning Materials	Forms of Learning	Time Allocation
	CPMK 1	Process Review of seismic poststack data	TCL - SCL mixed	2 Hours

Material and Form of Learning, as well as Time Allocation	CPMK 1	Introduction Seismic attributes	TCL - SCL mixed	2 Hours
	CPMK 1	History of seismic attributes in petroleum exploration	TCL - SCL mixed	2 Hours
	CPMK 1	Map attributes and interval attributes	TCL - SCL mixed	2 Hours
	CPMK 1	Complex seismic tras analysis	TCL - SCL mixed	2 Hours
	CPMK 1	Structural and stratigraphic attributes	TCL - SCL mixed	2 Hours
	CPMK 1	Attribute of discontinuity	TCL - SCL mixed	2 Hours
	UTS/Project Task Results/Case Analysis Results			
	CPMK 2 and CPMK 3	Project group task of attribute analysis in post-stack 3D seismic data	TCL - SCL mixed	14 Hours
	UAS/ Project Task Results/ Case Analysis			
Learning Methods	TCL - SCL mixed, and project based learning			
Student Learning Experience	Reviewing, discussing, questioning, processing data, reviewing attribute seismic data			
Access to Learning Media an/ LMS and Offline &; Online Percentage	Slides, related websites and reference books			

Assessment Methods and Alignment with CPMK	**Assessment Techniques**	**Assessment Percentage**	**Criteria/ Indicator**	**CPMK-1**	**CPMK-2**	**CPMK-3**
	Participatory Activities*)					
	***Project* Results / Case Study / PBL Results *)**	**50%**			**25%**	**25%**
	Cognitive					
	Assignment					

	Quiz	**10%**		**10%**		
	UTS	**40%**		**40%**		
	UAS					
	Total	**100**				

*) can also be obtained from UTS or UAS which is the result of participatory activities or *project* / case study results. In accordance with IKU 7, **the percentage of** participatory activities and project results/case studies/PBL results is at least 50%.

Reference List

1. Satinder Chopra, Kurt J. Marfurt, 2007, Seismic Attributes for
2. Prospect Identification and Reservoir Characterization, Society of Exploration Geophysicists
3. Rob Simm, CMike Bacon, 2014, Seismic Amplitude: An Interpreter's Handbook, Cambridge University Press.
4. S. P. Maurya•N. P. Singh•K. H. Singh, 2019, Seismic Inversion Methods: A Practical Approach, Springer GeophysicsISBN 978-3-030-45661-0.

Name of Lecturer (*Team Teaching*)

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Authorization	**Drafting Date**	**Course Coordinator**	**Coordinator of Expertise (if applicable)**	**Head of Study Program**
	2020			Dr.. Sudarmaji,MSi