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

Methane Hydrate
Exploration Geophysics
MFG 4647/ 2 credits

Mentoring Team:

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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 4647	*Methane Hydrate Exploration*	*T: 2*	*P:*	*Odd*	*Choice*	*Minimum 60 credits*

Course Brief Description	After attending the course, students are expected to know: gas hydrate or methane hydrate caves as a source of clean energy, gas hydrate exploration, using geophysical methods for gas hydrate exploration, using seismic methods for gas hydrate exploration, calculating the volume of gas hydrates.	
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-3	**Operational and comprehensive skills**: Graduates are able to apply all geophysical methods (seismic, gravitational, magnetic, electrical, electromagnetic, and thermic methods) 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.
Course Learning Outcomes (CPMK)	**After completing the learning of this course, students are expected to be able to:**	
	CPMK-1	Students are able to master the concept of forming methane hydrate stability.
	CPMK-2	Students are able to understand the presence of methane hydrate stratigraphically and the character of seismic anomalies.

CPL Mapping with CPMK

	CPMK1	CPMK2
CPL-3		
CPL-4		

CPMK link with Material and Form of Learning, as well as Time Allocation		Learning Materials	Forms of Learning	Time Allocation
	CPMK-1	Introduction to clean energy needs; gas hydrates	TCL - SCL mixed	2 Hours
	CPMK-1	gas hydrate stability conditions,	TCL - SCL mixed	2 Hours
	CPMK-1	Geological indications of gas hydrates	TCL - SCL mixed	2 Hours
	CPMK-1	geophysical indication of gas hydrates,	TCL - SCL mixed	2 Hours
	UTS/Project Task Results/Case Analysis Results			
	CPMK-2	geophysical survey and data analysis,	TCL - SCL mixed	2 Hours
	CPMK-2	identification for Gas Hydrate Quantification	TCL - SCL mixed	2 Hours
	CPMK-2	Developer of geophysical methods for gas hydrate	TCL - SCL mixed	2 Hours

	UAS/ Project Task Results/ Case Analysis			
Learning Methods	TCL - SCL mixed			
Student Learning Experience	Study, discussion, Q&A			
Access to Learning Media an/ LMS and Offline &; Online Percentage	Slides and reference books			

Assessment Methods and Alignment with CPMK

Assessment Techniques	Assessment Percentage	Criteria/ Indicator	CPMK-1	CPMK-2
Participatory Activities[*])				
***Project* Results / Case Study / PBL Results** [*)]				
Cognitive				
Assignment	**40**			
Quiz				
UTS	**30**			
UAS	**30**			
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. Eleanor C. Willoughby, and Satinder Chopra Edited by: Michael Riedel, 2010, Geophysical Characterization of Gas Hydrates , Society of Exploration Geophysicists
2. Sanjeev Rajput, Naresh Kumar Thakur, 2011, Exploration of Gas Hydrates: Geophysical Techniques, Springer-Verlag Berlin Heidelberg
3. Ayhan Demirbas, 2010, Methane Gas Hydrate, Springer-Verlag London

Name of Lecturer	

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