

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



Geophysics of Petroleum

Geology

MFG 4617/ 2 credits

Mentoring Team:

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Dr. Ir. Jarot Setyowiyoto, IPU, ASEAN Eng

**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:

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SEMESTER LEARNING PROGRAM AND ACTIVITY PLAN (RPKPS)

Course Code	Course Name	Weight (credit)		Semester	Course Status	Prerequisite Courses																		
MFG 4617	Petroleum Geology	T: 2	P: -	Odd	Choice	Seismic Method 2																		
Course Brief Description	<p>This course studies the origin of petroleum, the presence of petroleum which includes: source rocks, reservoirs, cap rocks, trap structures, migration, accumulation, and maturation of oil and gas. Also introduced to the properties of oil and gas, petroleum exploration and its development, oil basins in Indonesia, oil drilling, well logging, geological prospecting of oil and gas. In the middle of the semester, a field trip will be held.</p> <p>After attending this lecture, students are expected to know the history of the formation, trapping, evaluation of oil and gas reservoir formation, and understand and apply their role comprehensively in oil and gas exploration.</p>																							
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	Able to explain petroleum systems and play concepts																						
	CPMK-2	Able to explain the petroleum system and play concept in an oil and gas exploration in Indonesia																						
	CPMK-3	Able to make building a time risk char simple and connect with play concepts.																						
	CPMK-4	Able to build an exploration concept in a basin in Indonesia based on surface and subsurface data																						
	CPMK-5	Able to prospect for oil and gas																						
CPL Mapping with CPMK	<table border="1"> <thead> <tr> <th></th> <th>CPMK1</th> <th>CPMK2</th> <th>CPMK3</th> <th>CPMK4</th> <th>CPMK5</th> </tr> </thead> <tbody> <tr> <td>CPL-2</td> <td>V</td> <td>V</td> <td></td> <td></td> <td></td> </tr> <tr> <td>CPL-3</td> <td></td> <td></td> <td>V</td> <td>V</td> <td>V</td> </tr> </tbody> </table>							CPMK1	CPMK2	CPMK3	CPMK4	CPMK5	CPL-2	V	V				CPL-3			V	V	V
	CPMK1	CPMK2	CPMK3	CPMK4	CPMK5																			
CPL-2	V	V																						
CPL-3			V	V	V																			
CPM K link with	CPMK	Learning Materials			Forms of Learning	Time Allocation																		
	CPMK-1	The origin of petroleum			TCL - SCL mixed	2 Hours																		

Material and Form of Learning, as well as Time Allocation	<i>CPMK-2</i>	Source Rock			TCL - SCL mixed	2 Hours	
	<i>CPMK-2</i>	reservoir rocks			TCL - SCL mixed	2 Hours	
	<i>CPMK-2</i>	Cap rocks			TCL - SCL mixed	2 Hours	
	<i>CPMK-2</i>	Trap Structures			TCL - SCL mixed	2 Hours	
	<i>CPMK-2</i>	Migration			TCL - SCL mixed	2 Hours	
	<i>CPMK-2</i>	Accumulation			TCL - SCL mixed	2 Hours	
	UTS/Project Task Results/Case Analysis Results						
	<i>CPMK-3</i>	oil and gas maturation			TCL - SCL mixed	2 Hours	
	<i>CPMK-3</i>	Properties of oil and gas			TCL - SCL mixed	2 Hours	
	<i>CPMK-4</i>	Petroleum exploration and its development			TCL - SCL mixed	2 Hours	
	<i>CPMK-4</i>	oil basins in Indonesia			TCL - SCL mixed	2 Hours	
	<i>CPMK-4</i>	oil drilling, well logging			TCL - SCL mixed	2 Hours	
	<i>CPMK-5</i>	geological prospecting of oil and gas.			TCL - SCL mixed	2 Hours	
	UAS/ Project Task Results/ Case Analysis						
Learning Methods	TCL - SCL mixed						
Student Learning Experience	Study, discussion						
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/ Indicators	CPMK-1	CPMK-2	CPMK-3	CPMK-4
	Participatory Activities*)	10		v	v		
	Project Results / Case Study / PBL Results *)	40		v	v	v	v
	Cognitive						
	Assignment	10		v	v		
	Quiz	5		v	v		
	UTS	15		v	v	v	
	UAS	20			v	v	v
	Total	100					

	*) can also be obtained from UTS or UAS which is the result of participatory activities or <i>project</i> / 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	<ol style="list-style-type: none"> 1. Chapman, R.E., 1976, Petroleum Geology, Second Reprint, Elsevier Scr. Publishing Co., New York. 2. Lowell, J.D., 1985, Structural Styles in Petroleum Geology, Oil and Gas Consultant International Inc., Pebul., Tulsa, Oklahoma. 3. Mopdy, G.B., 1961, Handbook of Petroleum Geology, Mc Graw Hill Book Co., New York. 4. Pirson, S.J., 1963, Handbook of Well Log Analysis and Oil and Gas Gas Formation Evaluation, Prentice Hall Inc., Engle wood Clifts, New York. 			
Name of Lecturer (Team Teaching)	Dr. Ir. Sugeng Sapto Surjono, IPU, ASEAN Eng Dr. Ir. Jarot Setyowiyoto, IPU, ASEAN Eng			
Authorization	Drafting Date	Course Coordinator	Coordinator of Expertise (if applicable)	Head of Study Program
	16 October 2020	 Dr. Ir. Sugeng Sapto Surjono, IPU, ASEAN Eng		 Dr. Sudarmaji, MSi