

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



Petrological Geophysics

MFG 4703/ 2 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

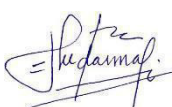
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**SEMESTER LEARNING PROGRAM AND ACTIVITY PLAN (RPKPS)**

Course Code	Course Name	Weight (credit)		Semester	Course Status	Prerequisite Courses									
MFG 4703	Petrology	T: 2	P: -	Even	Choice	-									
<b>Course Brief Description</b>	This course aims to provide basic knowledge about the rocks that make up the earth (occurrence, physical properties and expanse), which are objects of geophysical measurement. After taking this lecture, students are expected to have an understanding in lithological interpretation of geophysical measurement results.														
<b>Graduate Learning Outcomes (CPL) Charged n in MK</b>	<b>CPL-2</b>	<b>Mastery of general knowledge:</b> 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.													
	<b>CPL-3</b>	<b>Operational and comprehensive skills:</b> 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.													
<b>Course Learning Outcomes (CPMK)</b>	<b>After completing the learning of this course, students are expected to be able to:</b>														
	<b>CPMK-1</b>	Students are able to understand the process of formation of the main minerals that make up rocks, and the formation of igneous rocks, and													
	<b>CPMK-2</b>	Students are able to understand the process of formation of carbonate rocks and metamorphic rocks and understand the physical properties of igneous, metamorphic, sedimentary, and carbonate rocks													
<b>CPL Mapping with CPMK</b>	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>CPMK1</th> <th>CPMK2</th> </tr> </thead> <tbody> <tr> <td>CPL-2</td> <td></td> <td></td> </tr> <tr> <td>CPL-3</td> <td></td> <td></td> </tr> </tbody> </table>							CPMK1	CPMK2	CPL-2			CPL-3		
	CPMK1	CPMK2													
CPL-2															
CPL-3															
<b>CPMK link with Material and Form of Learning, as well as Time Allocation</b>	<b>Learning Materials</b>			<b>Forms of Learning</b>	<b>Time Allocation</b>										
	<b>CPMK-1</b>	Rocks and minerals = Igneous Rocks : magma and its composition, Bowen Reaction series, fractionation of magma,		TCL - SCL mixed	2 Hours										
	<b>CPMK-1</b>	Intrusion extrusion-dike-vein, Volcano formation, magm kitchen structure		TCL - SCL mixed	2 Hours										

	<i>CPMK-1</i>	texture and composition Rock frozen acidintermediate-base	TCL - SCL mixed	2 Hours
	<i>CPMK-1</i>	pyroclastic rocks	TCL - SCL mixed	2 Hours
	<i>CPMK-1</i>	introduction and description of igneous rock examples.	TCL - SCL mixed	2 Hours
	<i>CPMK-1</i>	Sedimentary rocks: rock cycle, weathering,	TCL - SCL mixed	2 Hours
	<i>CPMK-1</i>	sedimentation process, sedimentation environment,	TCL - SCL mixed	2 Hours
<b>UTS/Project Task Results/Case Analysis Results</b>				
	<i>CPMK-2</i>	grain size scale, lithification and diagenesis	TCL - SCL mixed	2 Hours
	<i>CPMK-2</i>	clastic and non-clastic sediments, and carbonaceous rocks	TCL - SCL mixed	2 Hours
	<i>CPMK-2</i>	structure Sediment and introduction and description of sedimentary rock samples.	TCL - SCL mixed	2 Hours
	<i>CPMK-2</i>	Metamorphic rocks: metamorphosis, classification of metamorphic rocks,	TCL - SCL mixed	2 Hours
	<i>CPMK-2</i>	Metamorphic minerals	TCL - SCL mixed	
	<i>CPMK-2</i>	texture Rock Metamorphic contact and regional metamorphics,	TCL - SCL mixed	2 Hours
	<i>CPMK-2</i>	and introduction and description of examples of metamorphic rocks.	TCL - SCL mixed	2 Hours
<b>UAS/ Project Task Results/ Case Analysis</b>				
<b>Learning Methods</b>	TCL - SCL mixed			
<b>Student Learning Experience</b>	Study, discussion, Q&A			
<b>Access to Learning Media an/ LMS</b>	Slides and reference books			

<b>and Offline &amp; Online Percentage</b>						
<b>Assessment Methods and Alignment with CPMK</b>	<b>Assessment Techniques</b>	<b>Assessment Percentage</b>	<b>Criteria/ Indicator</b>	<b>CPMK-1</b>	<b>CPMK-2</b>	
	<b>Participatory Activities<sup>*</sup></b>					
	<b>Project Results / Case Study / PBL Results<sup>*)</sup></b>					
	<b>Cognitive</b>					
	<b>Assignment</b>	<b>40</b>				
	<b>Quiz</b>	<b>-</b>				
	<b>UTS</b>	<b>30</b>				
	<b>UAS</b>	<b>30</b>				
	<b>Total</b>	<b>100</b>				
	*) 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, <b>the percentage of participatory activities and project results/case studies/PBL results is at least 50%.</b>					
<b>Reference List</b>	<ol style="list-style-type: none"> <li>1. Blatt, H. &amp; Ehlers, E.G., 1982, Petrology Igneous, Sedimentary, and Metamorphic, W.H. Freeman &amp; Co.</li> <li>2. Huang, W.T., 1962, Petrology, Mc Graw Hill Book Co., NewYork.</li> <li>3. Hydman, D.W., 1972, Petrology of Igneous and Metamorphic Rock, McGraw Hill Book Co., New York.</li> <li>4. Jackson, K.C., 1970, Text Book of Lithology, Mc Graw Hill Inc., New York.</li> <li>5. Pettijohn, F.J., 1962, Sedimentary Rocks, 2nd, Oxford &amp; IBH Pub. Co., New Delhi.</li> </ol>					
<b>Name of Lecturer (Team Teaching)</b>						
<b>Authorization</b>	<b>Drafting Date</b>	<b>Course Coordinator</b>		<b>Coordinate or Field of Expertise (If Any)</b>	<b>Head of Study Program</b>	
	2020				 Dr.. Sudarmaji, M Si	