

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



Indonesian Tectonic
Geophysics
MFG 3115/ 2 credits

Supervisory Team:

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**GADJAH MADA UNIVERSITY
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 3115	<i>Tectonics of Indonesia a</i>	<i>T</i> : 2	<i>P: -</i>	<i>Odd</i>	<i>Mandatory</i>	MFG 2101 (KL Geology)
Course Brief Description	<p>Understanding the tectonic conditions of an area is one of the keys to understanding the history and processes that occur on a dynamic earth. In addition, tectonic conditions have important implications in disaster mitigation and in the exploration of natural resources. Indonesia is a country with a very complex tectonic setting. Some of the world's tectonic features are even only found in Indonesia. In this lecture, many basic tectonic concepts will be studied which are associated with natural phenomena such as volcanoes, earthquakes, hydrocarbon formation to potential disasters stored as a result of tectonic conditions earlier. The material in outline in this lecture, among others: Overview of plate tectonics theory; Special tectonic features; Regional tectonics of Indonesia; Local tectonics of Indonesia: Western Sunda arc, eastern Sunda arc, Banda arc, Sulawesi, Maluku Sea and surrounding areas, Irian/Papua New Guinea; Case studies: Sumba Island, Banggai-Sula Islands, etc.</p>					
Graduate Learning Outcomes (CPL) Charged to MK	CPL-1	Good Attitude: Graduates are honest, disciplined, curious, critical, confident, independent, emotionally mature, cooperative, and trustworthy. Uphold norms, values, morals, religion, general ethics and professional ethics, and actively play a role in the global movement of sustainable development and behave professionally.				
	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 apply basic science (mathematics, physics, chemistry, biology, geology), and geophysics in general and their relationship with other sciences such as geology, geodesy,				

		computing and information technology in understanding tectonic issues broadly. [CPL-1 and CPL-2]														
	CPMK-2	Students are able to apply geological and geophysical approaches (especially seismology, geomagnetic, and gravity) in the interpretation of the formation of tectonic conditions and current tectonic conditions, as well as the implications of these conditions on natural resource exploration, disaster mitigation, geomaritime, and geotourism. [CPL-1 and CPL-3]														
CPL mapping with CPMK	<table border="1"> <thead> <tr> <th></th> <th>CPMK1</th> <th>CPMK2</th> </tr> </thead> <tbody> <tr> <td>CPL-1</td> <td>10</td> <td>10</td> </tr> <tr> <td>CPL-2</td> <td>40</td> <td></td> </tr> <tr> <td>CPL-3</td> <td></td> <td>40</td> </tr> </tbody> </table>					CPMK1	CPMK2	CPL-1	10	10	CPL-2	40		CPL-3		40
	CPMK1	CPMK2														
CPL-1	10	10														
CPL-2	40															
CPL-3		40														
The Relationship of CPMK with Learning Materials and Forms, as well as Time Allocation		Learning Materials	Forms of Learning	Time Allocation												
	CPMK1	History and Formation of Plate Tectonics Theory and RPKPS Explanation	SCL	2 Hours												
	CPMK1	Plate Boundaries and Global Tectonic Features	SCL	2 Hours												
	CPMK1	Overview of Indonesia's Tectonic Conditions	SCL	2 Hours												
	CPMK1	Western Sunda Arc: Sumatra	SCL	2 Hours												
	CPMK1	Western Sunda Arc: Java	SCL	2 Hours												
	CPMK1	Eastern Sunda Arc: Bali and Nusa Tenggara Islands	SCL	2 Hours												
	CPMK1	Plate Tectonics and Symptoms of Magmatism	SCL	2 Hours												
	UTS/Project Task Results/Case Analysis															
	CPMK2	Banda Arc Tectonics	SCL	2 Hours												
	CPMK2	Seismotectonics: A Case Study of the Banda Arc	SCL	2 Hours												
	CPMK2	Seismotectonics: A Case Study of the Maluku Sea and the Moluccan Islands	SCL	2 Hours												
	CPMK2	Tectonics of Sulawesi, Kalimantan and Banggai Sula	SCL	2 Hours												
	CPMK2	Tectonics of Irian Island (1)	SCL	2 Hours												
	CPMK2	Tectonics of Irian Island (2)	SCL	2 Hours												

	CPMK2	Implications of Indonesia's Tectonic Conditions (disasters, natural resources, geomaritime, geotourism) and Material	SCL	2 Hours	
UAS/ Project Task Results/ Case Analysis					
Learning Methods	SCL				
Student Learning Experience	Listen to lecturers' explanations, self-study, and do assignments				
Access Learning Media / LMS and Offline & Online Percentage	LCD projector, computer, screen, and whiteboard				
Assessment Methods and Alignment with CPMK	Assessment Techniques	Assessment Percentage	Criteria / Indicator	CPMK-1	CPMK-2
	Participatory Activities*)	20		10	10
	<i>Project Results/H Results Case Study/ PBL Results*)</i>	-			
	Cognitive				
	Assignmen	20		10	10
	Quiz	20		10	10
	UTS	20		20	
	UAS	20			20
	Total	100			
	*) can also be obtained from UTS or UAS which is the result of participatory activities or <i>project / case study</i> results. In accordance with IKU 7, the percentage of participatory activities and project results/case studies/PBL results is at least				
Reference List	<ol style="list-style-type: none"> 1. Barber, A.J., Crow, M.J. & Milsom, J.S. (eds) 2005. Sumatra: Geology, Resources and Tectonic Evolution. Geological Society, London, Memoirs, 31. 2. Hamilton W. (1979). Tectonics of the Indonesian Region, U. S. Geol. Surv. Prof. Paper, 1078. 3. McCaffrey, R., Active tectonics of the Eastern Sunda and Banda Arcs, 1981 https://doi.org/10.1029/JB093iB12p15163 				
Name of Lecturer	Dr.rer.nat.M.Nukman,ST.,M.Sc. Dr.rer.nat. Ade Anggraini, S.Si., M.Si.				

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