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

Geophysics Volcano Physics
Practicum
MFG3112/ 1 credit

Mentoring Team:

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	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
MFG3112	*Volcano Physics Practicum*	*T: 2*	*P: 1*	*Even*	*Choice*	

Course Brief Description	After attending this practicum, students can carry out measurement, processing, analysis, and interpretation of volcanic physics data. Students also study the observation of morphological changes in volcanic bodies spatio-temporal through satellite data	
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 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.
	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.
Course Learning Outcomes (CPMK)	**After completing the learning of this course, students are expected to be able to:**	
	CPMK-1	Students are able to monitor the dynamics of morphological changes of active volcanoes in Indonesia based on temporal satellite data.
	CPMK-2	Students are able to measure geophysical data, processing, and analysis for volcanic physics data.
CPL mapping with CPMK		

	CPMK1	CPMK2		
CPL-1	✓	✓		
CPL-2	✓	✓		
CPL-3	✓	✓		

		CPL-4	✓	✓		
The Relationship of CPMK with Learning Materials and Forms, as well as Time Allocation		**Learning Materials**		**Forms of Learning**	**Time Allocation**
	CPMK 1	Introduction to volcano monitoring based on satellite data		Material exposure + SCL + Discussion	2 Hours
	CPMK 1	Presentation of problem based learning monitoring of active volcano changes in Indonesia 1		Material exposure + SCL + Discussion	2 Hours
	CPMK 1	Presentation of problem-based learning monitoring of active volcano changes in Indonesia 2		Material exposure + SCL + Discussion	2 Hours
	CPMK 1	Presentation of problem-based learning monitoring of active volcano changes in Indonesia 3		Material exposure + SCL + Discussion	2 Hours
	CPMK 1	Presentation of problem based learning monitoring of active volcano changes in Indonesia 4		Material exposure + SCL + Discussion	2 Hours
	UTS/Project Task Results/Case Analysis Results				
	CPMK 2	Monitoring of volcanic activity based on the Gravity method		Material exposure + SCL + Discussion	2 Hours
	CPMK 2	Monitoring of volcanic activity based on GPS method		Material exposure +SCL+PBL+ Discussion	2 Hours
	CPMK 2	*Field session visit to Merapi observation post*		Material exposure +SCL+PBL+ Discussion	2 Hours
	CPMK 2	*Fieldtrip to Active volcano 1*		Material exposure + SCL + Discussion	2 Hours
	CPMK 2	*Fieldtrip to Active volcano 1*		Material exposure + SCL + Discussion	2 Hours
	UAS/ Project Task Results/ Case Analysis				
Learning Methods	In this course, there are 4 learning methods, namely presentations from lecturers, Student Based Learning, Problem Based Learning, and discussions				
Student Learning Experience	Students actively discuss, listen and understand lecture materials given by lecturers, looking for literacy when student-based and *problem-based learning*.				
Access Learning Media / LMS and Offline &; Online Percentage	100% offline				

Assessment Methods and Alignment with CPMK	**Assessment Techniques**	**Assessment Percentage**	**Criteria/ Indicators**	**CPMK-1**	**CPMK-2**			
	Participatory Activities*)							
	***Project Results*/Case Study Results/PBL Results*)**	**100%**	**Practicum Report**	✓	✓			
	Cognitive							
	Practicum Report	**100%**						
	Quiz							
	Response Exam							
	Total	**100**						

Reference List	1. Francis, Wadge, Mark, Satellite Monitoring of Volcanoes, Springer. 2. Reports, scientific papers from volcanic physics research at Geophysical Lab. FMIPA-UGM and BPPTK Office, Yogyakarta.
Name of Lecturer (*Team Teaching*)	1. Drs. Imam Suyanto, M.Si 2. Dr. rer. Nat. Mochamad Nukman, M.Sc

Authorization	**Drafting Date**	**Course Coordinator**	**Coordinator of Expertise (if any)**	**Head of Study Program**
	August 25 2020	*Drs. Imam Suyanto, M.Si*		 Dr.. Sudarmaji,MSi