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

Geophysics Wave

Practicum

MFG1406/ 1 credit

Mentoring 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:** .....

SEMESTER LEARNING PROGRAM AND ACTIVITY PLAN (RPKPS)

Course Code	Course Name	Weight (credit)		Semester	Course Status	Prerequisite Courses
MFG1406	*Wave Practicum*	*T: 0*	*P:1*	*Complete*	*Mandatory*	

Course Brief Description	In this course will understand and practice the basic theories about sound waves, oscillations, electromagnetic waves, mechanical waves, wave interference, simple seismometers, wave attenuation, and a little about seismic refraction.	
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.
Course Learning Outcomes (CPMK)	**After completing the learning of this course, students are expected to be able to:**	
	CPMK-1	Understand and practice the basic principles of sound waves, electromagnetic, mechanical, and seismic
	CPMK-2	Understand and practice the basic principles of oscillations, simple seismometers, wave interference, and wave attenuation

CPL mapping with CPMK

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

The Relationship of CPMK with Learning Materials and Forms, as well as Time Allocation	*CPMK*	Learning Materials	Forms of Learning	Time Allocation
	CPMK – 1	Technical meeting	Material exposure + SCL + Discussion	2 Hours
	CPMK – 1	Sound Waves	Material exposure + SCL + PBL+ Discussion	2 Hours
	CPMK – 2	Oscillation	Material exposure + SCL + PBL+ Discussion	2 Hours

	CPMK – 1	Electromagnetic radiation	Material exposure + SCL + PBL+ Discussion	2 Hours
	CPMK – 1	Mechanical Waves	Material exposure +SCL+PBL+ Discussion	2 Hours
	UTS/Project Task Results/Case Analysis Results			
	CPMK – 2	Wave Interference	Material exposure +SCL+PBL+ Discussion	2 Hours
	CPMK – 2	Simple Seismometer	Material exposure +SCL+PBL+ Discussion	2 Hours
	CPMK – 2	*Wave Attenuation*	Material exposure +SCL+PBL+ Discussion	2 Hours
	CPMK – 1	*Seismic Refraction*	Material exposure +SCL+PBL+ Discussion	2 Hours
	CPMK – 1 and 2	Response	Material exposure +SCL+PBL+ Discussion	2 Hours
	UAS/ Project Task Results/ Case Analysis			

Learning Methods	In this course, there are 4 learning methods, namely presentations from lecturers and practicum assistants (lecturers), Student Based Learning, Problem Based Learning, *and discussions*
Student Learning Experience	Students actively discuss, listen and understand practicum materials provided by lecturers, process data, make practicum reports, and take response exams
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*)	**50%**	**Attendance, Activeness, Response, Pre Test and Post**	✓	✓			
***Project Results/*Case Study Results/PBL Results*)**	**50%**	**Practicum Report**	✓	✓			
Cognitive							
Practicum Report	**50%**		✓	✓			
Quiz	**30%**	**Pre test and post test results**					

	Response Exam	**20%**	**Exam Results**	✓	✓			
	Total	**100**						

Reference List	1. Hirose, A., and K.E. Longren, 1985: Introduction to wave phenomena, John Wiley & Sons. 2. Pain., H.J., 2005: The physics of vibrations and waves, J. Wiley &Sons. 3. Zahara M., 1994: Waves and optics, Education Personnel Development Project of PT, Directorate General of Higher Education, Ministry of Education and Culture.
Name of Lecturer (*Team Teaching*)	1. Dr. rer. Nat. Wiwit Suryanto, M.Si 2. Dr. rer. Nat. Herlan Darmawan, M.Sc

Authorization	**Drafting Date**	**Course Coordinator**	**Coordinator of Expertise (if any)**	**Head of Study Program**
	August 25 2022			 Dr.. Sudarmaji,MSi