

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



Geophysics

Geophysical Analysis Method

Practicum MFG-2107/ 1 credits

Mentoring Team:

Geophysical Analysis Method Practicum

**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


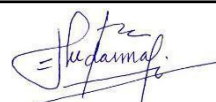
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SEMESTER LEARNING PROGRAM AND ACTIVITY PLAN (RPKPS)

Course Code	Course Name	Weight (credit)		Semester	Course Status	Prerequisite Courses																				
MFG-2107	<i>Geophysical Analysis Methods Practicum</i>	T: -	P: 1	Odd	Mandatory	MFG-2106*)																				
Course Brief Description	<p>Geophysical Analysis Method Practicum (MFG-2107) is a compulsory subject in the geophysics study program that teaches discrete/digital system analysis and discrete/digital data processing. This course aims to:</p> <ol style="list-style-type: none"> 1. The practice of displaying loading, generating and displaying digital signal data 2. Practice formulates difference equations and impulse responses 3. The practice of conducting convolutions with signals and digital systems 4. Practice applying the Z transform 5. Practice implementing discrete fourier transform (DFT) 6. Practice implementing FFT 7. Practice designing FIR filters 8. Practice designing IIR filers 																									
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-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-5	Synthesis and Evaluation Skills : Graduates are able to interpret geophysical data in the form of solving advanced and reverse problems (inverse problems) in an integrated manner that have ambiguous characters, carry out interpretation by making models and / or solving simple forward and reverse problems and are skilled in the use of computers both for the purposes of solving geophysical problems and for communication and internet access																								
Course Learning Outcomes (CPMK)	After completing the learning of this course, students are expected to be able to:																									
	CPMK-1	Cultivate a good and professional attitude when participating in practicum events [CPL-1]																								
	CPMK-2	The practice of displaying data and formulating models of physical systems from the field of geophysics [CPL-3]																								
	CPMK-3	The practice of processing and interpreting data in the frequency domain [CPL-5]																								
	CPMK-4	Practice formulating and applying analog and digital filters[CPL-5]																								
CPL mapping with CPMK	<table border="1"> <thead> <tr> <th></th> <th>CPMK1</th> <th>CPMK2</th> <th>CPMK3</th> <th>CPMK4</th> </tr> </thead> <tbody> <tr> <td>CPL-1</td> <td>√</td> <td></td> <td></td> <td></td> </tr> <tr> <td>CPL-3</td> <td></td> <td>√</td> <td></td> <td></td> </tr> <tr> <td>CPL-5</td> <td></td> <td></td> <td>√</td> <td>√</td> </tr> </tbody> </table>							CPMK1	CPMK2	CPMK3	CPMK4	CPL-1	√				CPL-3		√			CPL-5			√	√
	CPMK1	CPMK2	CPMK3	CPMK4																						
CPL-1	√																									
CPL-3		√																								
CPL-5			√	√																						

The Relationship of CPMK with Learning Materials and Forms, as well as Time Allocation		Learning Materials		Forms of Learning			Time Allocation			
	<i>CPMK-2</i>	The practice of displaying, loading, generating and displaying analog and digital signal data		Project based learning mixed			2 Hours			
	<i>CPMK-2</i>	Practice formulates difference equations and impulse responses		Project based learning mixed			2 hours			
	<i>CPMK-2</i>	The practice of conducting convolutions with signals and		Project based learning mixed			2 Hour			
	<i>CPMK-3</i>	Practice applying the Z transform		Project based learning mixed			2 Hour			
	<i>CPMK-3</i>	Practice implementing discrete fourier transform (DFT)		Project based learning mixed			2 Hour			
	UTS/Project Task Results/Case Analysis									
	<i>CPMK-4</i>	Practice implementing FFT		Project based learning mixed			2 Hour			
	<i>CPMK-4</i>	Practice designing FIR filters		Project based learning mixed			2 Hour			
	<i>CPMK-4</i>	Practice designing IIR filers		Project based learning mixed			2 Hour			
UAS/ Project Task Results/ Case Analysis										
Learning Methods	Student centered Learning									
Student Learning Experience	Class discussions, practical design and processing of data with computers									
Access Learning Media / LMS and Offline &; Online Percentage	CD, paper, pyton, Laptop, Zoom Meeting and Google meet									
Assessment Methods and Alignment with CPMK	Assessment Techniques	Assessment Percentage	Criteria/ Indicators	CPMK 1	CPMK 2	CPMK 3	CPMK 4	CPMK5	CPMK6	
	Participatory Activities^{*)}	10	Liveliness	√						
	<i>Project Results/Case Study Results/PBL Results^{*)}</i>	40	Project results		√	√	√	√	√	
	Cognitive									
	Assignment	40	Task Grad		√	√	√	√	√	
	Quiz	10	Liveliness		√	√	√	√	√	
	UTS									
	UAS									
	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 50%.									

Reference List	1. Adams, M.D., 2013, Continuous-Time Signals and Systems, University of Victoria, Canada 2. Chaparro, L.F, 2010, Signals and systems using MATLAB , Academic Press Publication, USA				
Name of Lecturer (Team Teaching)	Dr. SUDARMAJI, MSi				
Authorization	Drafting Date	Course Coordinator	Coordinator of Expertise (if any)		Head of Study Program
	<i>August 10 2022</i>	 Dr. Sudarmaji, MSi.	Dr. rer.nat. Ade Anggraini, M.T.		 Dr. Sudarmaji, MSi.