

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



Geophysics Geophysical
Instrumentation
MFG 4719/2 credits

Mentoring Team:

**UNIVERSITAS GADJAH
MADA FACULTY OF
MATHEMATICS AND
NATURAL SCIENCES
2020**



Gadjah Mada University
 Faculty of Mathematics and Natural Sciences
 Department of Physics / S1 Geophysics Study Program
 Even Semester 2020

Document Code:

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SEMESTER LEARNING PROGRAM AND ACTIVITY PLAN (RPKPS)

| Course Code | Course Name | Weight | Semester | Course Status | Prerequisite Courses |
|-------------|-----------------------------|---------------------|----------|---------------|----------------------|
| MFG 4719 | Geophysical Instrumentation | T : 1 P : - 2 | Even | Choice | Electronics |

Course Brief Description
 After attending lectures and passing the exam of this course, students are expected to understand:
 1. understand how Geophysical tools work,
 2. calibration ways,
 3. correct and safe use of tools,
 4. minor repairs, as well as
 5. Routine maintenance of geophysical tools and their auxiliaries.


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|---|--------------|---|
| Graduate Learning Outcomes (CPL) Charged n in MK | 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. |

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| Course Learning Outcomes (CPMK) | After completing the learning of this course, students are expected to be able to: | |
| | CPMK-1 | Understand the basic techniques of geophysical measurement / acquisition in general |
| | CPMK-2 | Calibrating geophysical equipment |
| | CPMK-3 | Understand how geophysical equipment works and do a little maintenance on it |
| | CPMK-4 | Able to convey ideas / descriptions related to the topic of instrumentation well can smoothly |

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|------------------------------|-------|--------------|--------------|--------------|--------------|
| CPL Mapping with CPMK | | | | | |
| | | CPMK1 | CPMK2 | CPMK3 | CPMK4 |
| | CPL-2 | ✓ | | | |
| | CPL-3 | | ✓ | ✓ | ✓ |

| CPMK link with Material and Form Learners, as well | Learning Materials | | Forms of Learning | Time Allocation |
|---|---------------------------|--|--------------------------|------------------------|
| | CPMK-1 | Introduction | TCL - SCL mixed | 2 Hours |
| | CPMK-1 | Measurement and acquisition 1: Sensor Measurement and acquisition | TCL - SCL mixed | 2 Hours |

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|---|---|------------------------------|-----------------------------|-----------------|---------------|---------------|---------------|--|
| as Time Allocation | <i>CPMK-1</i> | 2: System and ADC | | TCL - SCL mixed | 2 Hours | | | |
| | <i>CPMK-1</i> | Errors in the instrument | | TCL - SCL mixed | 2 Hours | | | |
| | <i>CPMK-2</i> | Equipment sensor calibration | | TCL - SCL mixed | 2 Hours | | | |
| | <i>CPMK-3</i> | Sensor | | TCL - SCL mixed | 4 Hours | | | |
| | UTS/Project Task Results/Case Analysis Results | | | | | | | |
| | <i>CPMK-3</i> <i>CPMK-4</i> | Group presentations | | TCL - SCL mixed | 14 Hours | | | |
| | UAS/ Project Task Results/ Case Analysis | | | | | | | |
| Learning Methods | TCL - SCL mixed | | | | | | | |
| Student Learning Experience | Study, discussion, Q&A | | | | | | | |
| Access to Learning Media an/ LMS and Offline & Online Percentage | Slides and reference books | | | | | | | |
| Assessment Methods and Alignment with CPMK | Assessment Techniques | Assessment Percentage | Criteria/ Indicators | CPMK-1 | CPMK-2 | CPMK-3 | CPMK-4 | |
| | Participatory Activities^{*)} | 10 | | | | | | |
| | Project Results / Case Study / PBL Results^{*)} | 5 | | | | | | |
| | Cognitive | | | | | | | |
| | Assignment | | | | | | | |
| | Quiz | | | | | | | |
| | UTS | 50 | | | | | | |
| | UAS | 35 | | | | | | |
| | Total | 100 | | | | | | |
| | *) 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, the percentage of participatory activities and project results/case studies/PBL results is at least 50%. | | | | | | | |
| Reference List | <ol style="list-style-type: none"> 1. Wolf, E.A. and Mercanti, E.P. 1973, GeoscienceInstru-mentation-JohnWiley&Sons 2. Geophysical tools manuals | | | | | | | |

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