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

Energy Geophysics

MFG-4601/ 2 credits

Supervisory Team:

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**2021**

| **SEMESTER LEARNING PROGRAM AND ACTIVITY PLAN (RPKPS)** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Name** | **Weight (credit)** | | **Semester** | **Course Status** | | **Prerequisite Courses** |
| MFG-4601 | Energ | T: 2 | P:- | Odd | Choice | | Basic Physics 1 |

| **Course Brief Description** | Geophysics is an earth science for the exploration of energy resources, especially fossil energy and other mineral resources. After attending the Energy course, students are expected to have knowledge and understanding of energy, sources of all energy sources on planet earth, diversity of energy sources and the process of formation, understanding non-renewable energy sources, new and renewable energy sources. |
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| **Graduate Learning Outcomes (CPL) Charged to 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 |
| --- | --- | --- |

| **Course Learning Outcomes (CPMK)** | **After completing the learning of this course, students are expected to be able to:** | |
| --- | --- | --- |
| | **CPMK-1** | Students know the types of energy and the description of energy exploration [CPL-2] |

| **CPL mapping with CPMK** | | | **CPMK1** |
| --- | --- | --- | --- |
| | CPL-2 | | |

| **The Relationship of CPMK with Learning Materials and Forms, as well as Time Allocation** | | **Learning Materials** | **Forms of Learning** | **Time Allocation** |
| --- | --- | --- | --- | --- |
| | *CPMK-1* | Introduction and introduction to the definition, types, and demand for energy supply. | Presentations, discussions | 2 Hours |
| | *CPMK-1* | Non-renewable energy sources | Presentations, | 2 Hours |
| | *CPMK-1* | Coal energy sources | Presentations, | 2 Hours |
| | *CPMK-1* | Oil and gas energy sources | Presentations, discussions | 2 Hour |
| | *CPMK-1* | Nuclear energy sources | Presentations, | 2 Hours |
| | *CPMK-1* | Indonesia's non-renewable energy policy | Presentations, discussions | 2 Hour |
| | *CPMK-1* | Exploration and exploitation of non-renewable energy sources | Presentation | 2 Hour |
| | **UTS/Project Task Results/Case Analysis** | | | |
| | *CPMK-1* | Types of renewable energy sources | Presentations, | 2 Hours |
| | *CPMK-1* | Discovery and exploration of geothermal energy sources | Presentations, discussions | 4 Hour |

| | CPMK-1 | Discovery and exploration of solar energy sources | Presentations, discussions | 4 Hour |
|---|---|---|---|---|
| | CPMK-1 | Discovery and exploration of water energy sources | Presentations, discussions | 4 Hour |
| | **UAS/ Project Task Results/ Case Analysis** | | | |
| **Learning Methods** | Student centered Learning, Presentation | | | |
| **Student Learning Experience** | Students listen to the lecturer's explanation when the lecturer presents, then continues the discussion / question and answer. Students make presentations, lecturers become moderators and direct discussions. | | | |
| **Access Learning Media / LMS and Offline &; Online Percentage** | LCD, paper, Simaster and ELok (e-learning), 100% offline | | | |

**Assessment Methods and Alignment with CPMK**

| Assessment Techniques | Assessment Percentage | Criteria/Indicators | CPMK1 |
|---|---|---|---|
| **Participatory Activities\*)** | 20 | Participation Rubric | |
| **Project Results/ Case Study Results/ PBL Results\*)** | 40 | Rubric of assessment presentation of case | |
| **Cognitive** | | | |
| **UTS** | 20 | Answer key | |
| **UAS** | 20 | Answer key | |
| **Total** | 100 | | |

\*) can also be obtained from UTS or UAS which is the result of participatory activities or *project* / 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** | 1. Michael Wesley, 2007, 'Energy Security in Asia', Routledge Publishing, London.<br>2. Withgott, J., & Brennan, S. R. (2009). Essential environment: The science behind the stories (p. 480). Pearson. |
|---|---|
| **Name of Lecturer (*Team Teaching*)** | 1. Sintia Windhi Niasari<br>2. Theodosius Marwan Irnaka |

| **Authorization** | **Drafting Date** | **Course Coordinator** | **Coordinator of Expertise (if any)** | **Head of Study Program** |
|---|---|---|---|---|
| | *Aug 16, 2022* | Dr.rer.nat. Sintia Windhi Niasari. M.Eng. | Dr. rer.nat. Ade Anggraini, M.T. | Dr. Sudarmaji, MSi. |