FI361 Geological Geophysics

Module name:	Geological Geophysics	
Module level, if applicable:	Undergraduate	
Code:	FI361	
Sub-heading, if applicable:	-	
Classes, if applicable:	-	
Semester:	5th	
Module coordinator:	Nanang Dwi Ardi	
Lecturer(s):	Nanang Dwi Ardi	
Language:	Bahasa Indonesia	
Classification within the curriculum:	Elective course	
Type of Teaching	Contact hours per week during the semester	Class Size
1. Lecture (conceptual, contextual and problem-solving approaches through expository, discussions and presentation). 2. Structured activities (assignments based on conceptual, contextual and problem-solving approaches) 3. Self-study (reading literature)	2 hours 30 minutes	20
Workload:	Total workload is 136 hours (4.8 ECTS) per semester which consists of 150 minutes lectures and a week for geology field camp (1.2 ECTS), 180 minutes structured activities (1.5 ECTS), and 180 minutes self-study per week for 14 weeks (1.5 ECTS), 150 minutes for each exam (0.2 ECTS), and 360 minutes for each exam preparation (0.4 ECTS).	
Credit points:	4.8 ECTS	
Pre-requisites course(s):	FI121 Basic Physics I, FI122 Basic Physics II	
Course Learning Outcomes (CLO):	After taking this course the students have ability to: CLO1. Explain the technique of physical identification of the division of layers within the Earth based on geophysical studies CLO2. Explain the method of direct rock sampling identification in the field based on real rock outcrop data. CLO3. Explain the identification method of physical weathering and rock sedimentation processes CLO4. Explain the method of measuring the weather with the help of manual and automatic tools CLO5. Apply procedural knowledge and mathematics skills in	

<table>
<tr><td></td><td>solving problems of Many Electron atoms systematically and logically
CLO6. Explain simple techniques for potential mineral and energy resources in the surrounding environment through visual data and rock weather measurements assisted by manual and automatic tools
CLO7. Explain simple geological disaster mitigation procedures
CLO8. Explain topographic map techniques for interpreting physical geological data
CLO9. Describe geological map techniques for interpreting physical geological data.
CLO10. Explain the technique of geological maps and geological cross-sections to interpret geological data
CLO11. Explain geological engineering and geophysical instrumentation in cases in the environment</td></tr>
<tr><td>Content:</td><td>Rock identification, Weathering, Time of Geology, Rock Deformation, Mineral and Energy Resources, Geological mitigation hazard, Topography and Geology mapping, Geology Exploration</td></tr>
<tr><td>Study/exam achievements:</td><td>The final mark will be weight as follow:
<table>
<tr><th>No</th><th>CLO</th><th>Assessment Object</th><th>Assessment Techniques</th><th>Weight</th></tr>
<tr><td>1</td><td>CLO1-CLO11</td><td>Subject specific competence:
a. Individual assignments
b. Discussion participation
c. Presentation
d. Mid Exam
e. Final Exam</td><td>

Written test
Performance
Performance
Written test
Written test</td><td>

10%
5%
25%
30%
30%</td></tr>
<tr><td colspan="4">Total</td><td>100%</td></tr>
</table></td></tr>
<tr><td>Forms of media:</td><td>Board, LCD Projector, Laptop/Computer, stream video conference, journal article, resistivity meter, hammer and compass set, rock samples</td></tr>
<tr><td>Literature:</td><td>1. Borrero, F et al. (2013). Earth Science; Geology, the Environment, and the Universe. Glencoe Science-National Geographic: McGraw-Hill
2. Waltham, T. (2009). The Foundation of Engineering Geology, 3rd Edition, Taylor & Francis Ltd
3. Busch, R.M (2015). Laboratory Manual in Physical Geology, 10th Edition, American Geosciences Institute. Pearson Education, Inc. United States of America
4. Griffiths, D. H., & King, R. F. (2014). Applied Geophysics for Geologists and Engineers. Elsevier Science.</td></tr>
</table>

PLO and CO mapping

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12
CLO1				√								
CLO2				√								
CLO3				√								
CLO4				√								
CLO5				√								
CLO6				√								
CLO7				√								
CLO8				√								
CLO9				√								
CLO10				√								
CLO11				√								