



Diponegoro University
Faculty of Science and Mathematics
Undergraduate Program Of Chemistry

Module designation	Geochemistry (Geo)
Semester(s) in which the module is taught	3
Person responsible for the module	Pardoyo, M.Si
Language	Indonesian
Relation to curriculum	Compulsory /elective/ specialisation
Teaching methods	Lecture
Workload (incl. contact hours, self-study hours)	Face to Face = 1x(2 x50") Self Study + Structured tasks = 1x(2 x60"+ 2 x60")
Credit points	2
Required and recommended prerequisites for joining the module	KU

<p>Module objectives/intended learning outcomes</p>	<p>(S6) Work together and have social sensitivity and concern for society and the environment</p> <p>(S9) Demonstrates an attitude of being responsible for work in his field of expertise independently</p> <p>(S10) Internalize the spirit of independence, struggle, and entrepreneurship</p> <p>(KU1) Able to apply logical, critical, systematic, and innovative thinking in the development or implementation of science and technology that pays attention to and uses humanities values by their field of expertise</p> <p>(KU5) Able to make decisions regularly in the context of solving problems in their area of expertise, based on the results of analysis of information and data</p> <p>(KK1) Able to produce appropriate conclusions based on the identification, analysis, isolation, transformation, and synthesis of chemicals that have been carried out</p> <p>(PP1) Mastering the theoretical concepts of structure, properties, changes, kinetics, and energetics of molecules and chemical systems, identification, separation, characterization, transformation, synthesis of micromolecular chemicals, and their application</p>
<p>Content</p>	<ol style="list-style-type: none"> 1. Introduction: <ol style="list-style-type: none"> a. Earth's internal structure a. Abundance and origin of the elements b. Geochemical isotopes 2. Formation and crystallization of magma: <ol style="list-style-type: none"> a. Thermodynamics and chemistry of Crystals 3. Formation and crystallization of magma: <ol style="list-style-type: none"> a. Thermodynamics and crystal chemistry (continued) 4. Formation and crystallization of magma: <ol style="list-style-type: none"> b. Magma and igneous rock 5. Sedimentation and diagenesis: <ol style="list-style-type: none"> a. Inorganic geochemistry (sedimentation, carbonate, phosphate, iron, etc.) 6. Sedimentation and diagenesis: <ol style="list-style-type: none"> b. Organic geochemistry (Coal, petroleum) 7. Sedimentation and diagenesis: <ol style="list-style-type: none"> c. Organic geochemistry (Coal, petroleum) Advanced 8. Weathering and soil: <ol style="list-style-type: none"> a. Weathering process 9. Weathering and soil: <ol style="list-style-type: none"> b. Soil and its formation 10. Metamorphosis and geochemical cycles: <ol style="list-style-type: none"> a. Metamorphosis b. Geochemical Cycle 11. Types of accidents in mining and Types of handling accidents in mining

Exams and assessment formats	Mid-Semester Exam and Final Exam
Study and examination requirements	Participatory Activities -10% Project Results -30% Cognitive/Task Knowledge -5% Quiz -5% Mid-semester -25% Final exams -25%
Reading list	<ol style="list-style-type: none"> 1. Mason, B. dan Moore, C.B., 1982, "Principle of Geochemistry", John Wiley & Sons, New York 2. Rose W. Arthur, Hawkes, H.E., Webb, J.S., 1979, " Geochemistry in Mineral Exploration", Academic Press 3. Krauskopf, K.B., Bird, D.K., 1995, Introduction to Geochemistry,"edisi ke-3, McGraw Hill, Inc. Singapore