

Module Descriptions

Module designation	Elemental Chemistry
Semester(s) in which the module is taught	7th semester/ 3th year
Person responsible for the module	Prof. Dr. Achmad Lutfi, M.Pd.
Language	Bahasa Indonesia (Regular Class) Bahasa Inggris (Internasional Class)
Relation to curriculum	Compulsory course
Teaching methods	Case Method 3 workhours per week (3 x 170 minutes per week)
Workload (incl. contact hours, self-study hours)	1 CU for a bachelor's degree equals 170 minutes (50 minutes face-to-face, 60 minutes structured, 60 minutes independent learning) per week × 14 weeks, excluding mid and end-term exams. = 39.67 work hours per semester = 1.587 ECTS.
Credit points	3 Credit Units (CU) = 4.761 ECTS
Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	<ol style="list-style-type: none"> 1. Students are able to analyze the abundance, properties, benefits, and periodic trends of main and transition group elements logically, critically, systematically, and creatively through discussions, case studies, and class presentations, using coherent arguments and supported by relevant scientific sources. 2. Students are able to analyze theoretical concepts regarding atomic structure, reaction dynamics, bond energies, and the basic principles of analysis, synthesis, and characterization of main and transition group elements based on literature and observations from practical work with a minimum accuracy of 75%, according to the assessment criteria. 3. Students are able to apply OHS principles, operate laboratory equipment, and conduct practical work on the identification and utilization of elements and their compounds appropriately during practical work, consistently adhering to safety procedures and without fatal errors. 4. Students are able to design and implement mini-research, prepare scientific reports, and communicate the results of studies and practical work orally and in writing, utilizing information technology through project assignments and final presentations, with a minimum quality rating of "Good" according to the assessment rubric. 5. Analyze the application of elemental chemistry concepts in industrial processes through field visits and prepare systematic observation reports.

Content	A study of the abundance, properties, methods of obtaining, benefits, and identification of elements and their compounds from the main and transition groups (first, second, and third series, block D). Learning is conducted through discussions, presentations, practical work, and project assignments, enabling students to think critically and creatively, understand theoretical concepts, apply OHS principles and the use of laboratory instruments, and convey ideas orally and in writing using information technology.
Examination forms	Essay and Oral Presentation
Study and examination requirements	<p>Study and Examination Requirements/Assessment:</p> <ol style="list-style-type: none"> 1. Individual assignments (case analysis reports) 2. Group case studies and discussions 3. Documentation and presentation of case study findings <p>Assessment Recap (Case Study-Oriented):</p> <ol style="list-style-type: none"> 1. Participatory Activities/Case Study Analysis: 52.5% 2. Project: 3% 3. Portfolio: 7,5% 4. Practical: 21% 5. Test: 16% <p>Total: 100%</p>
Reading list	<ol style="list-style-type: none"> 1. Lee, J.D. 1991. Concise Inorganic Chemistry. Four Edition. London: Chapman & Hall. 2. Madan, R.D. 1997. Modern Inorganic Chemistry. New Delhi: S. Chand and Company LDT. 3. Sugiarto, B. dkk. 1997. Kimia Anorganik. Surabaya: Unipress IKIP Surabaya. 4. Perry, Dale L. 2011. Handbook of Inorganic Compounds, Second Edition (Hardcover) – May 18, 2011. ISBN-13: 000-1439814619 ISBN-10: 14398146