

MODULE HANDBOOK

Module Name	Transition Elements of Chemistry
Module level	Bachelor
Abbreviation, if applicable	3074213052
Sub-headings, if applicable	-
Course included in the module, if applicable	-
Semester / term	6 th / Third Year
Module coordinator (s)	Dr. Amaria, M.Si.
Lecturer (s)	Dr. Amaria, M.Si .; Prof. Dr. Sari Edi C., M.Si .; Dr. Muchlis, S.Pd., M.Pd .; Kusumawati D, S.Pd. M.Pd .; Rusly Hidayah, S.Si., M.Pd.
Language	Indonesian
Classification within the Curriculum	Compulsory Course
Format / class teaching hours per week during the semester:	2 hours lecturers (50 min per hours)
Workload:	2 x 50 minutes lectures, 2 x 60 minutes structured activity, 2 x 60 minutes individual activity, 14 weeks per semester, 79,33 total hours per semester ~ 3.18 ECTS**
Credit points:	2 CU x 1.59 = 3.18 ECTS
Prerequisites course (s):	-
Targeted learning outcomes:	<p>CLO 1 Students have the ability to utilize learning resources and ICT to support mastery of concepts and theories of inorganic chemistry</p> <p>CLO 2 Students have knowledge about the basic concept of metal extraction, properties of physical and chemistry, of transition's element and compound of first, second, and third block d</p> <p>CLO 3 Students make decision related concept of periodic table properties, properties of physical and chemistry, of transition's element and compound of first, second, and third block d</p> <p>CLO 4 Students have an honest and responsible attitude in study inorganic chemistry concept.</p>
Content:	<p>1. Principles of metals extraction;</p> <p>2. Introduction of transition metals: 1. Properties of transition metals, 2. Size of atom and ion, 3. Ionization energy; 4. Magnetic properties, 5. Catalytic properties, 6. Stability of oxidation state level, 7. Reactivity, 8. Stability of complex. Complex compound and color</p> <p>3. Scandium and titanium groups: 1. General properties of scandium group, 2. Oxide and scandium group compounds, 3. extraction, properties, and using of</p>

	<p>scandium group, 4. General properties of titanium group, 5. Oxide and titanium group compounds, 3. extraction, properties, and using of titanium group,</p> <p>4. Vanadium group: 1. General properties of vanadium group, 2. Oxide and scandium group compounds, 3. extraction, properties, and using of scandium group</p> <p>5. Chromium group: 1. General properties of chromium group, 2. Oxide and chromium group compounds, 3. extraction, properties, and using of chromium group</p> <p>6. Manganese group: 1. General properties of manganese group, 2. Oxide and manganese group compounds, 3. extraction, properties, and using of manganese group</p> <p>7. Iron group: 1. General property of iron group, 2. Oxide and iron group compounds, 3. extraction, properties, and using of iron group</p> <p>8. Cobalt group: 1. General properties of cobalt group, 2. Oxide and cobalt group compounds, 3. extraction, properties, and using of cobalt group</p> <p>9. Nickel group: 1. General properties of nickel group, 2. Oxide and nickel group compounds, 3. extraction, properties, and using of nickel group</p> <p>10. Copper group: 1. General properties of copper group, 2. Oxide and copper group compounds, 3. extraction, properties, and using of copper group</p> <p>11. Zinc group: 1. General properties of zinc group, 2. Oxide and zinc group compounds, 3. extraction, properties, and using of zinc group.</p>										
Study / exam achievements:	<p>Students are considered to complete the course and pass if they obtain at least 40% of maximum final grade. The final grade (NA) is calculated based on the following ratio:</p> <table border="1" data-bbox="618 1289 1414 1528"> <thead> <tr> <th>Assessment Components</th> <th>Percentage of contribution</th> </tr> </thead> <tbody> <tr> <td>Participation</td> <td>20%</td> </tr> <tr> <td>Assignment</td> <td>30%</td> </tr> <tr> <td>Mid-semester test</td> <td>20%</td> </tr> <tr> <td>Final semester test</td> <td>30%</td> </tr> </tbody> </table>	Assessment Components	Percentage of contribution	Participation	20%	Assignment	30%	Mid-semester test	20%	Final semester test	30%
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Final semester test	30%										
Media:	Computer, LCD, White board										
Learning Methods	Individuals assignment, group assignment, discussion, and presentation.										
Literature:	<p>1. Dina Kartika Maharani, et al. 2017. Transitional Inorganic Chemistry. Surabaya: Unesa University Press</p> <p>2. Madan, RD, 1997. Modern Inorganic Chemistry. New Delhi .: S. Chand and Company Ltd</p> <p>3. Manku, GS, 1980. Inorganic Chemistry. India: Tata Mc Graw Hill Book Co.</p>										

	4. Lee, JD 1991. Concise Inorganic Chemistry. Fourth Edition. London: Chapman & Hall
Notes:	*1 CU in learning process = three periods consist of: (a) scheduled instruction in a classroom or laboratory (50 minutes); (b) structured activity (60 minutes); and (c) individual activity (60 minutes) according to the Regulation of Indonesia Ministry of Research, Technology, and Higher Education No. 44 Year 2015 jo. The Regulation of Indonesia Ministry of Research, Technology, and Higher Education No. 50 Year 2018.
	**1 CU = 1,59 ECTS according to Rector Decree Of Universitas Negeri Surabaya No. 598/Un38/Hk/Ak/2019