

## Module Handbook

Module Name:	<b>Inorganic Chemistry I</b>
Module Level:	Bachelor
Abbreviation, if applicable:	KII 201
Sub-heading, if applicable:	-
Courses included in the module, if applicable:	-
Semester/term:	3 <sup>th</sup> / Second Years
Module coordinator(s):	Dr. Hartati, M.Si
Lecturer(s):	Harsasi Setyawati, S.Si, M.Si; Ahmadi Jaya Permana, S.Si, M.Si
Language:	Bahasa Indonesia
Classification within the curriculum	Compulsory Course / <del>Elective Studies</del>
Teaching format / class hours per week during semester:	3 hours lectures (50 min / hour)
Workload:	3 hours lectures, 3 hour structured activities, 3 hours individual study, 13 week per semester, and total 117 hours per semester ~ 3.9 ECTS *
Credit Points:	3 SCU
Requirements:	General Chemistry II
Learning goals/competencies:	<p><b>General Competence(knowledge) :</b>            Are able to analyze the nature, structure and bonding in the compound / molecule reactions as well as the basic principles and non-metallic elements.</p> <p><b>Specific Competence :</b></p> <ol style="list-style-type: none"> <li>1. Able to explain the scope of Inorganic Chemistry.</li> <li>2. Ability to determine the configuration of electrons in atoms by atomic number, type and period of the elements by its electron configuration.</li> <li>3. Able to calculate the energy of the crystal lattice ionic compounds, bond angles based hybridization</li> <li>4. Being able to decipher the formation of covalent compounds based octet theory, the formation of covalent compounds based on the valence bond theory, the formation of covalent compounds by hybridization, the formation of covalent compounds by VSEPR theory, the formation of covalent compounds by molecular orbital theory, the formation of covalent compounds based on the theory of the crystal field. van der Waals bonding, metal bonding and hydrogen bonding on the compound. basic reactions on inorganic compounds, the nature and use of the elements hydrogen and hidridanya. the nature and</li> <li>5. the use of boron and hidridanya, properties of the element carbon, silicon and oxide, the nature of nitrogen, phosphorus and arsenic and its compounds, properties of oxygen, sulfur, selenium, tellurium, polonium and compounds, properties of halogens, oxyacids and compounds among halogen, properties of noble gases.</li> </ol>
Content:	On this subject will be discussed on the scope of Inorganic Chemistry.

	The atomic structure and classification of the elements in the periodic system. The structure and bonding in the molecule and the compound. Reactions base, including acid-base reactions, redox, precipitation, gas formation, and the formation of coordination. Nature and utilization of non-metallic materials, including hydrogen and hydride compound group elements 13 to 18, ie oxygen, sulfur, selenium, tellurium and polonium; nitrogen, phosphorus and arsenic; carbon, silicon and oxide; boron and hidridanya; halogen, oxy-halogen acids and compounds antarhalogen; noble gas.
Attribut soft skill	Discipline, Confidence, Good communication skill
Study/exam achievements:	Students are considered to be competent and pass if at least get 55  <b>The final value</b> is calculated as follows: 20% + 10% duty soft skill + middle exam (UTS) 35% + final exams (UAS) 35%  Table Value Graduation A: 100> NA≥75 AB: 74,9≥NA≥70 B: 69,9≥NA≥65 B: 64,9≥NA≥60 C: 59,9≥NA≥55 D: 54,9≥NA≥40 E: 39,9≥NA
Forms of Media:	Slides and LCD projectors, whiteboards
Lecturing methods	Lectures and discussion
Literature:	<ol style="list-style-type: none"> <li>1. Miessler, G.L., Fischer, P.J., and Tarr, D.A., 2014, Inorganic Chemistry 5th ed, Prentice Hall, International Inc., New Jersey</li> <li>2. Huheey, J. E., Keiter, E. A. and Keiter, R. L., 1993, Inorganic Chemistry, Principles of Structure and Reactivity, 4th ed., Harper and Publisher, New York</li> <li>3. Cotton, F.A,Wilkinson,G.,and Gaus,P.L.,1987,Basic Inorganic Chemistry, 3 th ed., John Wiley and Sons, New York</li> <li>4. Prakash,S, Tuli, Basu and Madan, 1980, Advanced inorganic Chemistry, 15th ed, Chand &amp; Company Ltd., Ram Nagar, New Delhi.</li> <li>5. Madan, R.D., and prakash,S., 1997, Modern Inorganic Chemistry, S. Chand and Company Ltd, Ram Nagar, New Delhi. Cotton, F.A., Wilkinson, G., and Gaus, P.L., 1989, ( terjemahan oleh Sahati Suharto) Kimia Anorganik Dasar, UI Press, Jakarta</li> </ol>
Notes:	*Total ECTS = {(total hours workload x 50 min ) / 60 min } / 25 hours <b>Each ECTS is equals with 25 hours</b>