



UNIVERSITAS NEGERI YOGYAKARTA
 FACULTY OF MATHEMATICS AND NATURAL SCIENCES
 DEPARTMENT OF CHEMISTRY
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Bachelor of Science in Chemistry

MODULE HANDBOOK

Module name:	Non-metal Inorganic Chemistry										
Module level if applicable:	Undergraduate										
Code:	KIM6409										
Sub-heading if applicable:	-										
Classes if applicable:	2										
Semester:	2 rd										
Module coordinator:	Prof. AK. Prodjosantoso, Ph.D										
Lecturer(s):	1. Prof. AK. Prodjosantoso, Ph.D 2. Dr. Cahyorini Kusumawardani 3. Dr. Kun Sri Budiasih 4. Dr. Dyah Purwwaningsih 5. M. Pranjoto Utomo, M.Si.										
Language:	Bahasa Indonesia and English										
Classification within the curriculum:	Compulsory Subject										
Teaching format / class hours per week during the semester:	<ul style="list-style-type: none"> • Lectures: 150 minutes lectures, 180 structured activities and 180 individual study per week • Laboratory work: 170 minutes includes the laboratory work and it's reporting per week 										
Workload:	Total workload of the activity is 181,33 hours per semester which consists of 150 minutes lectures, 180 structured activities and 180 individual study and also 170 minutes laboratory work with it's reporting per week for 16 weeks										
Credit points:	4 SKS (7 ECTS) with the details of 3 SKS (5 ECTS) lectures and 1 SKS (2 ECTS)										
Prerequisites course(s):	General Chemistry										
Course Outcome:	<p>After taking this course, the students are expected to be able to:</p> <table border="1" style="width: 100%;"> <tr> <td>CO1</td> <td>Show religiosity and humanity</td> </tr> <tr> <td>CO2</td> <td>Adapt and responsible to finish the job</td> </tr> <tr> <td>CO5</td> <td>Use any strategies and techniques of chemistry research to solve the problems and chemistry research.</td> </tr> <tr> <td>CO7</td> <td>Adapt and responsible to finish the job</td> </tr> <tr> <td>CO9</td> <td>Integrate mathematics and sciences concept to solve chemistry problems.</td> </tr> </table>	CO1	Show religiosity and humanity	CO2	Adapt and responsible to finish the job	CO5	Use any strategies and techniques of chemistry research to solve the problems and chemistry research.	CO7	Adapt and responsible to finish the job	CO9	Integrate mathematics and sciences concept to solve chemistry problems.
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Content:	<p>This course covers theories and practices which include:</p> <ol style="list-style-type: none"> 1. Atomic structure of hydrogen 2. Element periodicity 3. Molecular structure (ionic and covalent bonds, formal charge, Lewis structure and hybridization) 4. Acid base concepts (Arrhenius, Bronsted –Lowry, Lewis, HSAB) and its applications 5. Chemical reactions (reduction-oxidation reaction, 										

	electrode potential, Latimer and Frost diagrams) 6. Main group of non-metals elements																												
Course Outcome:	<p>Attitude assessment is carried out at each meeting by observation and/or self-assessment techniques using the assumption that basically every student has a good attitude. The student is marked very good or not good attitude if they show it significantly compared to other students in general. The result of attitude assessment is not taken into account in the final grades, but as one of the requirements to pass the course. Students will pass from this course if at least have a good attitude. The final mark will be weight as follow:</p> <table border="1"> <thead> <tr> <th>CO</th> <th>Assessment Object</th> <th>Assessment Technique</th> <th>Weight</th> </tr> </thead> <tbody> <tr> <td>CO1,</td> <td>a. Mid-term Exam</td> <td>Written test</td> <td>25%</td> </tr> <tr> <td>CO2,</td> <td>b. Final Exam</td> <td>Written test</td> <td>37.5%</td> </tr> <tr> <td>CO5,</td> <td>c. Pretest, posttest,</td> <td>Written test</td> <td>37.5%</td> </tr> <tr> <td>CO7,</td> <td>lab. work,</td> <td></td> <td></td> </tr> <tr> <td>CO9</td> <td>worksheet</td> <td></td> <td></td> </tr> <tr> <td colspan="3">Total</td> <td>100%</td> </tr> </tbody> </table>	CO	Assessment Object	Assessment Technique	Weight	CO1,	a. Mid-term Exam	Written test	25%	CO2,	b. Final Exam	Written test	37.5%	CO5,	c. Pretest, posttest,	Written test	37.5%	CO7,	lab. work,			CO9	worksheet			Total			100%
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Forms of media:	Board, LCD Projector, Laptop/Computer, Tools and Chemicals for labwork																												
References:	<p>K Sugiyarto, Retno Dwi Suyanti & Hari S. (2015). Kimia Anorganik Non-Logam. UNY-Press</p> <p>Miessler, G.L., Fischer, P.J. dan Tarr, D.A. (2006), <i>Inorganic Chemistry</i>, Pearson</p> <p>Housecroft, C.A. and Sharpe, A.G. (2007), <i>Inorganic Chemistry</i>, Prentice Hall</p> <p>Lee, J.D., (1998), <i>Concise Inorganic Chemistry</i>, John Wiley</p> <p>Huheey, J (2008), <i>Inorganic Chemistry: Principles of Structure and Reactivity</i>, Pearson</p>																												

PLO and CO mapping

CO	PLO										
	Attitude	Generic Skill			Knowledge				Specific Skill		
	PL01	PL02	PL03	PL04	PL05	PL06	PL07	PL08	PL09	PL010	
C01	√										
C02		√									
C03					√						
C04							√				
C05									√		
C06									√		