

## MODULE HANDBOOK

Module Name	Basic Chemistry II	
Module level	Bachelor	
Abbreviation, if applicable	8420403122	
Sub-heading, if applicable	-	
Course included in the module, if applicable	-	
Semester/term	2 <sup>nd</sup> /First Year	
Module coordinator(s)	Dr. Utiya Azizah, M.Pd.	
Lecturer(s)	<b>Dr. Utiya Azizah, M.Pd.; Dr. Sukarmin, M.Pd.; Dr. Nuniek Herdyastuti, M.Si.; Dian Novita, S.T., M.Pd.; Dr. Maria Monica Sianita B., M.Si.; Dr. Hj. Rinaringsih, M.Pd; Dr. Mitarlis, S.Pd., M.Si</b>	
Language	Indonesian	
Classification within the curriculum	Compulsory Course	
Teaching format/class hours per week during the semester:	3 hours lecturers (50 min per hours)	
Workload:	Total workload 126 hours per semester which consists of 3 hours lecture, 3 hours structured activities, 3 hours 3 hours 3 hours 3 hours individual activities, and 14 weeks per a semester (4.2 ECTS)	
Credit points:	3 SCU	
Prerequisites course(s):	-	
Targeted learning outcomes:	CLO 1	Students have the ability to utilize learning resources and ICT to support mastery of concepts and theories of all topics in Basic Chemistry II.
	CLO 2	Students have the ability to make decision about the relationship between concepts on Basic Chemistry II and laboratory practice with Chemistry in daily life.
	CLO 3	Students have knowledge of the reaction rate, chemical equilibrium, redox and electrochemistry, colloidal system, nuclear chemistry and radioactivity, chemical elements, green chemistry and chemicals in daily life,
	CLO 4	Students have responsible attitude in doing laboratory practice honestly.
Content:	<b>Rate of reaction:</b> Kinetics Law, Factors that affect the rate of reaction, activation energy, order of reaction, collision theory, and mechanism of reaction.	

	<p><b>Chemical equilibrium:</b> Dynamic equilibrium, Equilibrium Law, Le Chatelier Principles, application of equilibrium concepts in industry.</p> <p><b>Redox and electrochemistry:</b> concepts of redox, equivalency of redox reaction, electrochemistry, DGL cell and Nernst equation, electrolysis and its quantitative aspect, corrosion.</p> <p><b>Colloid system:</b> definition, dispersion system, classification of colloid based on their properties, colloid making and their usage in daily life.</p> <p><b>Nuclear chemistry:</b> stability of nuclear, radioactive decay, nuclear reaction.</p> <p><b>Chemical elements:</b> metals, non-metals, and transition elements, principles of metals processing.</p> <p><b>Green Chemistry:</b> definition and characteristics, principles that support green chemistry.</p> <p><b>Chemistry in daily life:</b> chemicals in household, chemicals in food, addictive agent and psychotropic drugs.</p>
Study / exam achievements:	<p>Students are considered to be competent and pass if at least get 55</p> <p>Final score is calculated as follows: 20% participation + 30% assignment + 20% middle exam (UTS) &amp; 30% final exam (UAS)</p> <p>Table index of graduation</p> <ul style="list-style-type: none"> <li>• A = 4 (85 - 100)</li> <li>• A- = 3,75 (80 - 85)</li> <li>• B+ = 3,5 (75 - 80)</li> <li>• B = 3 (70 - 75)</li> <li>• B- = 2,75 (65 - 75)</li> <li>• C+ = 2,5 (60 - 65)</li> <li>• C = 2 (55 - 60)</li> <li>• D = 1 (40 - 55)</li> <li>• E = 0 (0 - 40)</li> </ul>
Media:	Computer, LCD, White board
Learning Methods	Individuals assignment, group assignment, discussion, presentation, and practicum
Literature:	<ol style="list-style-type: none"> <li>1. Tim Kimia Dasar. 2017. <i>Kimia Dasar I</i>. Surabaya: Unesa University Press.</li> <li>2. Brady and Humiston. 2004. <i>General Chemistry, Principles and Structures</i>. New York: John Willey and Sons.</li> <li>3. Chang, Raymond. 2005. <i>General Chemistry The Essential Concepts Third Edition</i>. USA: McGraw Hill.</li> <li>4. Achmad, Hiskia dan Tupamahu. 1990. <i>Penuntun Belajar Struktur Atom, Struktur Molekul, Sistem Periodik</i>. Bandung: ITB.</li> <li>5. Achmad, Hiskia dan Tupamahu. 1991. <i>Stoikiometri dan Energetika Kimia</i>, Bandung, PT Citra Aditya Bakti.</li> </ol>

	6. Ahmad, Hiskia. 1990. <i>Kimia Larutan</i> . Bandung: Jurusan Kimia FMIPA ITB
Note:	<p>Basic Chemistry II cover the activities on theory, practice, and presentation.</p> <p>Total ECTS = ((total hours workload x 50 min)/60 min)/25 hours</p> <p>Each ECTS is equals wits 25 hours</p>