Module Handbook

Modul Name	General Chemistry I
Modul Level	Bachelor
Abbreviation, if applicable:	KID101
Sub-heading, if applicable:	-
Courses included in the module, if applicable:	-
Semester/term:	Odd (1st semester)
Module coordinator(s):	MKWU Teaching Staff
Lecturer(s):	MKWU Teaching Staff
Language:	Bahasa Indonesia
Classification within the curriculum	Compulsory Course / ~~Elective Studies~~
Teaching format / class hours per week during semester:	300 minutes/ week
Workload :	100 min lecture + 100 min structural assignment + 100 min self-assignment x 13 weeks; total 3900 min = 65 hours 65/25 = 2.6 ECTS
Credit point	2
Requirement	-
Learning goals/ competencies	**General competence :** Able to explain the basic concept of chemistry, includes organic and inorganic compounds properly **Specific competence:** 1. Able to distinguish the different atomic theory and explain the characteristic of subatomic particle; able to explain the number of protons, electrons, and neutron in atomic notation; and write the electrons configuration; able to explain the fundamentals of grouping elements; able to distinguish the elements characteristic in modern periodic system; able to determine place of elements in periodic system according to electron configuration 2. Able to explain the role of electron valency in chemical bond; able to explain the process of ionic bond, covalent and the configuration and gives the examples; able to explain the process of hydrogen bond and gives the example 3. Able to calculate the molality and the number of particle in a substance; able to calculate percent of elements in a substance and percent of substance in a chemical reaction; able to write the empirical formula and chemical formula of a substance from combustions process 4. Able to calculate the number of atom oxidation in ion and molecule; able to elaborate the old and modern concept of oxidation-reduction reaction and the substance of oxidizer and reductor; able to distinguish between exothermic and endothermic reactions 5. Able to calculate the the heat of reactions 6. Able to calculate the equilibrium constant and the influenced factor

	7. Able to elaborate, distinguish and gives the examples of electrolyte and non-electrolyte solution 8. Able to calculate the concentrations of solution 9. Able to explain the categories of organic compounds 10. Able to explain the categories of aliphatic hydrocarbon; alkanes and cycloalkanes 11. Able to explain the categories of alkyl halides 12. Able to explain the categories of alkenes and alkynes 13. Able to explain the categories of aromatic compounds 14. Able to explain the categories of alcohol and ether
Content	Atom structures and Periodic system; chemical bond; stoichiometry; redox and thermodynamics; colligative properties of solutions; acid-base solutions; rate of reactions; aliphatic hydrocarbons and alkyl halides; alcohols and ethers; aldehydes and ketones; carboxylic acid and amine.
Soft skill Attribute	Discipline and argumentation
Study/ exam achievements	Students are considered to be competent and pass if at least get 40 of maximum mark of the final score. Final score: Paper project (30%), mid exam (35%), final exam (35%). Final index is defined as follow: A = 75-100 AB = 70-74,99 B = 65-69,99 BC = 60-64,99 C = 55-59,99 D = 40-54,99 E = 0-39,99
Media	LCD
Learning Method	Class and discussion
Literature	a. Brady, J.E., 1992, *General Chemistry*, 5th ed., John Wiley and Sons, New York b. Brown, W.H., 1982, *Introduction to Organic Chemistry*, 3rd ed., Williard Grant Press, Boston. c. Wilbraham, A.C., Matta M.S., 1992, *Pengantar Kimia Organik dan Hayati (terjemahan Suminar Achmad)*, Penerbit ITB.
Note	The requirement of general chemistry II