

Module Handbook

Module Name:	Physical Chemistry I (Practical)
Module Level:	Bachelor
Abbreviation, if applicable:	KIF 203
Sub-heading, if applicable:	-
Courses included in the module, if applicable:	Physical Chemistry I (KIF202)
Semester/term:	3 rd /second year
Module coordinator(s):	Dr. Mochamad Zakki Fahmi
Lecturer(s):	Dr. Abdulloh Dr. Faidur Rochman Siti Wafiroh, M.Si Drs. Handoko Darmokoesoemo, DEA
Language:	Bahasa Indonesia
Classification within the curriculum	Compulsory course
Teaching format / class hours per week during semester:	2 hours laboratory work(50 min / hours)
Workload:	2 hours doing worksheet and pretest preparation, 2 hours laboratory work, 2 hours group discussion , searching literature and writing report , 13 week per semester, and total 78 hours per semester ~ 2.6 ECTS *
Credit Points:	1 SCU
Requirements:	Physical Chemistry I
Learning goals/competencies:	<p>General Competence (skill) : Understanding the basic principles of the ideal gas law and the gas constant, constant calorimeter, heat type, determination of thermal dissolution, heat reactions of ions, the solubility as a function of temperature, heat of vaporization as the activation energy of evaporation, vapor-liquid equilibrium in binary systems, the equilibrium partitioning iodine in water and organic solvents, fasauap-liquid equilibrium of ethanol.</p> <p>Specific competence:</p> <ol style="list-style-type: none"> 1. Able to prove ideal gas law and determine the gas constant. 2. Able to specify a defined calorimeter as the basis for a trial basis and change the properties of the heat calorimeter. 3. Able to determine the type of hot metal 4. Able to determine the integral and differential thermal dissolving the salts in water solvent. 5. Able to measure the ion reaction heat properly. 6. Able to determine the effect of temperature on solubility. 7. Able to determine the activation energy of an evaporation. 8. Able to determine the binary phase diagram phenol-water 9. Able to determine the partition coefficient of iodine in water and some organic solvents. 10. Understand the liquid and gas phase equilibrium.

Content:	Ideal gas law and the gas constant, constant calorimeter, heat type, determination of thermal dissolution, heat reactions of ions, the solubility as a function of temperature, heat of vaporization as the activation energy of evaporation, vapor-liquid equilibrium in binary systems, the equilibrium partitioning iodine in water and organic solvents, fasauap-liquid equilibrium of ethanol.
Attribut soft skill	Disciplineand team-work
Study/exam achievements:	Students are considered to be competent and pass if at least 55 Final score is calculated as follows: 60% daily score + 40% final exam Final score index defined as follows : 75,00 – 100,00 A 4 70,00 – 74,99 AB 3,5 65,00 – 69,99 B 3 60,00 – 64,99 BC 2,5 55,00 – 59,99 C 2 40,00 – 54,99 D 1 0,00 – 39,99 E 0
Forms of Media:	Laboratory equipment, Module book
Learning Methods	Practical in laboratory and discussion
Literature:	1. Atkins, P.; de Paula, J., 2006., Physical Chemistry, 8th Ed., Oxford University Press, New York 2. Reger, D.; Weiner, E.R.; Gilkerson, W., 1993, Experimentation and Analysis in The Chemistry Laboratory, Sunders College Publishing, Orlando Florida
Notes:	*Total ECTS = {(total hours workload x 50 min) / 60 min } / 25 hours Each ECTS is equals with 25 hours