

Module Handbook

Module Name:	Physical Chemistry II (Practical)
Module Level:	Bachelor
Abbreviation, if applicable:	KIF205
Sub-heading, if applicable:	-
Courses included in the module, if applicable:	-
Semester/term:	4 th /second year
Module coordinator(s):	SitiWafiroh, S.Si.M.Si.
Lecturer(s):	Dr. Abdulloh, M.Si M. ZakkiFahmi, Ph.D
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 (KIF202)
Learning goals/competencies:	<p>General competence (skill) : at the end of this lesson the student is able to explain the determination of parameters of reaction kinetics, transport and electrochemical processes individually or in groups to pay attention to hygiene and safety in the laboratory</p> <p>Specific competens :</p> <ol style="list-style-type: none"> 1. Able to explain the reaction kinetics $S_2O_8^{2-} + I^-$ (computer simulation) 2. Able to recognize spectrophometer tool UV-Vis 3. Able to determine the rate equation brominated acetone 4. Able to calculate kinetics order reaction (reaction saponification ethyl acetate), 5. Able to determine the equilibrium constant polyprotic acid with a pH-meter 6. Able to explain the electrochemical cell 7. Able to determine the equilibrium constant for the weak acid in conductometry 8. Able to explain the separation and determination of ion Cu^{2+} and Zn^{2+} in a mixture of cupric and zinc sulphate solution by electrolysis 9. Able to count the number of transport Cu^{2+} and SO_4^{2-} 10. Able to explain the viscosity of the solution and determining the relative molecular mass.
Content:	Reaction kinetics $S_2O_8^{2-} + I^-$ (computer simulation), the introduction of UV-Vis spectrophotometer, reaction kinetics brominated acetone,

	order reaction kinetics (saponification reaction of ethyl acetate), the determination K_a polyprotic acid with a pH-meter, an electrochemical cell, the determination of the equilibrium constant conductometry weak acids, separation and determination of ion Cu^{2+} and Zn^{2+} in the mixture solution of cupric sulfate and cents by electrolysis, determination of the number transport Cu^{2+} ions, and the determination of the viscosity of the solution
Attribut soft skill	Team-work and discipline
Study/exam achievements:	Students are considered to be competent and pass if at least get 55 Final score is calculated as follows : 60% daily practical work + 40% Final practical work examination (UAP) Final score index : 75,00 -100 A 70,00 – 74,99 AB 65,00 – 69,99 B 60,00 – 64,99 BC 55,00 – 59,99 C 40,00 – 54,99 D 0,00 – 39,99 E
Learning Methods	Computer simulation and practical work
Forms of Media	Computer, LCD, Practical work's literature, Whiteboard
Literature	<ol style="list-style-type: none"> 1. Atkins, P. W., 2010, Physical Chemistry, 9thed, Oxford University Press, Oxford 2. Mounir A Malati, 1999, Experimentam,I Inorganic-Physical Chemistry, Woodhead Publishing, Oxford 3. Chemical Kinetics-Rate Laws Arrhenius Equation–Experiments,
Notes	*Total ECTS = {(total hours workload x 50 min) / 60 min } / 25 hours Each ECTS is equals with 25 hours