

Module Handbook

Module Name	Physical Chemistry IV
Module Level	Bachelor
Abbreviation, applicable:	if KIF302
Sub-heading, applicable:	if -
Courses included in the module, if applicable:	General Chemistry II
Semester/term:	3 rd / Second year
Module coordinator(s):	Dr. Mohammad ZakkiFahmi
Lecturer(s):	Drs. HandokoDarmoeKoesoemoe, DEA, Dr. FaidurRochman, MS, Dr. Abdulloh, M.Si
Language:	Bahasa Indonesia
Classification within the curriculum	Compulsory course
Teaching format / class hours per week during semester:	3 hours lecture (50 min / hour)
Workload:	3 hours lecture, 3 hours structured activities and 3 hours individual activities, 13 weeks per semester, and total 117 hours per semester ~ 3,9 ECTS *
Credit Points:	3
Requirements:	Physical Chemistry II (KIF 203)
Learning goals/competencies:	<p>General competence (Knowledge) Students are expected to surface tension solve the issue about related chemical, thermodynamic surface, the contact angle, adsorption, surfactants, colloidal system, colloidal kinetics, classification of materials, the reaction solids, and crystal defects.</p> <p>specific competence Students are able to infer interfacial phenomena, the colloidal system and system of solids and their application (application) in the chemical industry as well as everyday life-related chemicals appropriately.</p>
Content:	Material This course discusses the main points of discussion, as follows: Surface tension, contact angle, surfactants and applications (counting HLB, Flotation, foaming and anti-foaming), adsorption isotherm (Langmuir, Freundlich and Equation BET), the concept and application of adsorption monolayer and multilayer, introductory colloidal system and kinetics of colloids, zeta potential. The classification of solids, the reaction solids and characterization (XRD, SEM, TEM, DTA-TGA), crystal system and defects
Attribut soft skill	Discipline, team-work and willingness
Study/exam achievements:	Students are considered to be competent and pass if at least : <ol style="list-style-type: none"> 1. Get score ≥ 55 2. Score Presentation assignment 1:10% assignment 2 : 10% UTS (mid exam) : 40%

	UAS (final exam) : 40 % 3. Score Grade 75,00 – 100A 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
Forms of Media:	Lecture, discussion and tutorials
Learning Methods	Projector dan Whiteboard
Literature:	1. Adamson, W. A. And Alice, A. P, 1997., <i>Physical Chemistry of Surface</i> , 6 th ed., Jhon Wiley & Sons, New-York. 2. West, A. R., 2014., <i>Solid State Chemistry and its Application</i> , 2 nd ed., Student ed., JohnWiley and Sons, New Delhi. 3. Hiemenz, P. C. and Rojagopalan, R, 1997., <i>Principles of Colloid and Surface Chemistry</i> , 3 rd Ed., Mancel Dekker, Inc, New-York.
Notes:	*Total ECTS = {(total hours workload x 50 min) / 60 min } / 25 hours Each ECTS is equals with 25 hours