MODULE HANDBOOK

Module Name	Analysis Electrochemistry
Module level	Bachelor
Abbreviation, if applicable	MK-32 Electrochemistry Analysis 24720102054
Sub-heading, if applicable	-
Course included in the module, if applicable	-
Semester/term	3rd/second year
Module coordinator(s)	Dr. Pirim Setiarso, M.Si
Lecturer(s)	Dr. Pirim Setiarso, M.Si Prof. Dr. Titik Taufikur Rochmah, M.Si Prof. Dr. Nita Kusumawati, M.Sc
Language	Indonesian
Classification within the curriculum	Compulsory Course
Teaching format/class hours per week during the semester:	2 hours lecturers (50 min per hours)
Workload:	1 CU for bachelor degree equals to 2 workhours per week or 113 minutes (50' face to face learning, 60' structured learning, and 60' independent learning). In one semester, courses are conducted in 14 weeks (excluding mid and end-term exam). Thus, 1 CU equals to 39.67 workhours per semester. One CU equals to 1.59 ECTS.
Credit points:	2 x 1.59 = 3.18 ECTS
Prerequisites course(s):	KA II, KA III, KA IV
Targeted learning outcomes:	CLO 1, 2, 5 CLO 1. Capable to demonstrate knowledge related to theoretical concepts about structure, dynamics, and energy, as well as the basic principles of separation, analysis, synthesis and characterization of chemicals CLO 2. Capable to demonstrate the pedagogical knowledge of chemistry in designing, implementing, and evaluating chemistry learning CLO 5. Applying logical, critical, systematic and innovative

	thinking in the context of development or implementation of science, technology, and art that regards and applies humanities in accordance with chemistry education in solving problems
Content:	**Introduction**: The stages of the scientific method Analysis Electrochemistry as a scientific activity, material and energy, extensive and intensive properties, chemical and physical properties, elements, compounds, and mixtures **Analysis Potentiometry :** Nernst equation as basic analysis electrochemistry qualitatively and quantitatively. Potentiometricaly Titration , Applycation Potentiometric Titration **Analysis Conductometry:** Basic consept of Analysis Conductometry, Conductometry titration, Applycation ConductommetryTitration **Coulommetry,Polarographhy and voltammetry** : theory Coulommetry, polarography and voltammetry. Qualitative and quantitative Analysis Coulommetry polarography , voltammetry. Applycation Analysis Coulommetry polarography , voltammetry
Study / exam achievements:	Students are considered to be competent and pass if at least get 55 Final score is calculated as follows: 20% participation + 30% assignment + 20% middle exam (UTS) & 30% final exam (UAS) Table index of graduation • A = 4 (85 ≤-≥ 100) • A- = 3,75 (80 ≤-< 85) • B+ = 3,5 (75 ≤- < 80) • B = 3 (70 ≤-< 75) • B- = 2,75 (65 ≤-<75) • C+ = 2,5 (60 ≤-<65) • C = 2 (55 ≤-<60) • D = 1 (40 ≤-<55) • E = 0 (0 ≤-<40)
Media:	Computer, LCD, White board
Learning Methods	Individuals assignment, group assignment, discussion, presentation,
Literature:	1. Ewing G.W, 1981, *Instrumental Methods Of Chemical Analysis,* International Student Edition, Tokyo: McGraw-Hill Kogakusha Ltd 2. Pecsok, et al.1976. *Modern Methods of Analytical*

	Chemistry. 2nd New York: John Wiley and Sons 3. Sawyer, Heineman, and Beebe,1984, *Chemistry Experiments for Instrumental Methods*, New York : John Wiley & Sons 4. Skoog, Douglas.A. 1982, *Fundamental of Analytical Chemistry*. Fourth Edition. Tokyo: Holt- Sounders
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