Diponegoro University
Faculty of Science and Mathematics
Undergraduate Program Of Chemistry

Module designation	**Analytical Chemistry 2 (KA2)**
Semester(s) in which the module is taught	3
Person responsible for the module	Dr. Retno Ariadi L., M.Si. Dr. Gunawan, M.Si
Language	Indonesian
Relation to curriculum	Compulsory/~~elective~~/~~specialisation~~
Teaching methods	Lecture
Workload (incl. contact hours, self-study hours)	Face to face : 1 x (3 x 50 min); Structured study: 1 x (3 x 60 min); Self study: 1 x (3 x 60 min)
Credit points	3
Required and recommended prerequisites for joining the module	KA1
Module objectives/intended learning outcomes	(S9) Demonstrate a responsible attitude towards work in their area of expertise independently (PP2) Mastering complete operational knowledge of functions, operating standard chemical instruments, and analyzing data and information from these instruments (KU2) Able to demonstrate independent, quality, and measurable performance (KU3) Able to examine the implications of developing or implementing science and technology that pays attention to and applies humanities values according to their expertise based on scientific principles, procedures, and ethics to produce solutions, ideas, designs, or art criticism (PP2) Mastering complete operational knowledge of functions, operating standard chemical instruments, and analyzing data and information from these instruments

Content	1. Mole concepts and stoichiometry / Introduction and principles to stoichiometric theory 2. Mole concepts and stoichiometry / Introduction and principles of neutralization theory 3. acid base reaction; pH during titration; indicator selection, strong acid-strong base titration; strong acid-weak base titration; weak acid-base titration, strong base-weak acid titration, practice questions 4. Concepts of Quantitative Chemistry / theory of deposition and complex formation 5. Argentometric reactions (Mohr, Volhard, Fajan method), determination of TA, complex formation reactions, complex stability, EDTA complex formation titration, examples, practice questions 6. Concept of Quantitative Analysis Theory / titration theory of reduction and oxidation 7. Changes in redox potential, determination of TA titration, permanganometric titration, iodometric titration, bromatometric titration 8. Atomic structure and spectra 9. Introduction, depositional conditions, stages of gravimetric analysis, organic precipitating reagents, practice questions 10. Mol structure and concept 11. Electrogravimetric theory, the effect of current on cell potential, electrode reactions, selectivity of electrogravimetric methods 12. Colorimetry theory and application 13. The interaction of energy and matter; law of absorption of light by solution; Lambert Beer's law requirements, color comparison method 14. The interaction of energy and matter; law of absorption of light by solution; Lambert Beer's law requirements, color comparison method
Exams and assessment formats	Mid-Semester Exam and Final Exam
Study and examination requirements	Participatory Activities -20% Project Results -30% Task -10% Quiz -10% Mid-semester -15% Final exams -15%
Reading list	1. Day Jr., R.A and Underwood, A.L. 1988, Analisis Kimia Kuantitatif, edisi enam, Erlangga 2. Skoog, D.A, West, D.M dan Holler, F.J., 1994, Analitical Chemistry, an introdustion, Sounders Golden Sunburst Series