



Diponegoro University
Faculty of Science and Mathematics
Undergraduate Program Of Chemistry

Module designation	Thermal Analysis (AnTer)
Semester(s) in which the module is taught	4
Person responsible for the module	Dr. Retno Ariadi L., M.Si Gunawan, M.Si., Ph.D
Language	Indonesian
Relation to curriculum	Compulsory /elective/ specialisation
Teaching methods	Lecture
Workload (incl. contact hours, self-study hours)	Face to face = 1x(2x50") Structured study + Self study = 1x(2x60"+2x60")
Credit points	2
Required and recommended prerequisites for joining the module	KA2, KAI1
Module objectives/intended learning outcomes	Demonstrate a responsible attitude towards work in their field of expertise independently (S9) Mastering complete operational knowledge of functions, operating standard chemical instruments, and analyzing data and information from these instruments. (PP2) Able to apply logical, critical, systematic, and innovative thinking in the development or implementation of science and technology that pays attention to and uses humanities values by their field of expertise. (KU1) Able to demonstrate independent, quality, and measurable performance. (KU2)

Content	<ol style="list-style-type: none"> 1. Introduction and introduction: the basic theory of thermal analysis 2. Introduction and principles of TGA theory: Introduction to TGA, sample preparation procedures, instrument use procedures, influencing factors 3. Application theory: Acid-base titration reaction 4. DTA theory: Thermal thermodynamic aspects, DTA curve data 5. TGA/DTA Application: Gravimetry 6. Quantitative analysis: Hydrogen atomic spectra 7. Qualitative analysis: DSC basic principles, influence factors, instruments, curve data 8. DSS, DTA, TG alloy theory 9. Quantitative: application to the properties of alumina
Exams and assessment formats	Mid-Semester Exam and Final Exam
Study and examination requirements	Participatory Activities -30% Project Results -30% Cognitive/Task Knowledge -5% Task -5% Mid-semester -15% Final exams -15%
Reading list	<ol style="list-style-type: none"> 1. Dodd, J.W. dan Tonge, K.H., 1987, Analytical chemistry by open learning, Thermal analysis. 2. Ehrenstein G, Riedel, Trawiel, 2004, Thermal analysis of plastic, Hanser