



**Diponegoro University**  
**Faculty of Science and Mathematics**  
**Undergraduate Program Of Chemistry**

Module designation	<b>Food Analysis (AnPang)</b>
Semester(s) in which the module is taught	4
Person responsible for the module	Gunawan, M.Si., Ph.D Didik Setiyo W., S.Si., M.Si.,
Language	Indonesian
Relation to curriculum	<del>Compulsory/elective/specialisation</del>
Teaching methods	Lecture
Workload (incl. contact hours, self-study hours)	Face to face: 1 x (2 x 50") Structured study + Self study = 1 x [(2 x 50") + (2 x 60")]
Credit points	2
Required and recommended prerequisites for joining the module	KA2
Module objectives/intended learning outcomes	Demonstrate a responsible attitude towards work in their field of expertise independently Able to apply logical, critical, systematic, and innovative thinking in the context of the development or implementation of science and technology Able to demonstrate independent, quality, and measurable performance. Able to solve science and technology problems in general chemistry and uncomplicated scopes such as identification, analysis, isolation, transformation, and synthesis Mastering complete operational knowledge of functions, how to operate standard chemical instruments, as well as analysis of data and information from instruments Students can test (C4) various types of water samples and solve (C4) water sample-based problems, and develop/modify (A4) A new system to obtain water that is ready to be used for both drinking and other purposes

Content	<ol style="list-style-type: none"> <li>1. Definition of Foodstuffs, Sampling method for food ingredient analysis, Frequently used methods for analyzing foodstuffs</li> <li>2. Definition and properties of carbohydrates, Qualitative and quantitative analysis of Carbohydrates</li> <li>3. Definition and properties of lipids/fats. 2. Qualitative and quantitative analysis of Lipids/Fats</li> <li>4. Definition and properties of protein, Qualitative and quantitative analysis of protein (case method and project based learning)</li> <li>5. Qualitative and quantitative analysis of Protein (case method and project based learning)</li> <li>6. Definition and properties of vitamins, Qualitative and quantitative analysis of vitamins (case method and project based learning)</li> <li>7. Definition and properties of minerals, Qualitative and quantitative analysis of minerals</li> <li>8. Introduction of Wheat and wheat products, Wheat quantitative analysis Basic concept</li> <li>9. Application of quantitative analysis to wheat product</li> <li>10. Analysis of milk and dairy products</li> <li>11. Analysis of raw materials and meat products as a quality test. (case method and project based learning)</li> <li>12. Additive concept in food ingredients and types (case method and project based learning)</li> <li>13. Food spoilage and contaminants and methods of analysis</li> </ol>
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"> <li>1. Aurand, L.W., Woods AE, dan Wells MR, 1987, Food Composition and Analysis, Van Nostrand Reinhold Co, New Torh.</li> <li>2. Nielsen, S.S., 2010, Food Analysis Laboratory Manual, edisi ke-2, Springer, New York</li> <li>3. Otles S, 2012, Methods of Analysis of food Components and Additives, edisi ke-2, CRC Press, London</li> </ol>