



Diponegoro University
Faculty of Science and Mathematics
Undergraduate Program Of Chemistry

Module designation	Organic Chemical Industry (IKO)
Semester(s) in which the module is taught	6
Person responsible for the module	Drs. Pratama JW, Msi, Ph.D Ismiyarto, Ssi, Msi, Ph.D
Language	Indonesian
Relation to curriculum	Compulsory /elective/ specialisation
Teaching methods	Lecture
Workload (incl. contact hours, self-study hours)	Face to Face = 1x(2 x50") Self Study + Structured tasks = 1x(2 x60"+ 2 x60")
Credit points	2
Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	(S9) Demonstrates an attitude of being responsible for work in his field of expertise independently (KU1) 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 (KU2) Able to demonstrate independent, quality, and measurable performance (PP2) Mastering complete operational knowledge of functions, operating standard chemical instruments, and analyzing data and information from these instruments

Content	<ol style="list-style-type: none"> 1. Introduction of the organic industry paradigm and its relevant aspects 2. Short review of the first lecture material. The chemical analysis method of the renewable organic industry, their properties, and their isolation, purification and characterisation methods. Case studies are cellulose, amylose and lignine 3. Isolation process of cellulose, amylose and lignine in industrial scale 4. Purification process of cellulose, amylose and lignine in industrial scale 5. The manufacturing of alcohol from sago (Manihot utilisima) in an industrial scale 6. The isolation method of alcohol from sago (Manihot utilisima) in an industrial scale 7. The purification method of alcohol from sago (Manihot utilisima) in an industrial scale 8. The properties and availability of the non-renewable organic industry raw materials: Crude oil, Coal and Natural gas 9. Petroleum refinery process and its primary products 10. Petrochemicals industries, part I: Pesticides 11. Petrochemicals industries, part II: Dyes 12. The coal-raw materials industry 13. The natural gas-raw materials industry 14. The agricultural fertilizer industry: Urea
Exams and assessment formats	Mid-Semester Exam and Final Exam
Study and examination requirements	Participatory Activities -10% Project Results -30% Task -5% Quiz -5% Mid-semester -25% Final exams -25%
Reading list	-