



Diponegoro University
Faculty of Science and Mathematics
Undergraduate Program Of Chemistry

Module designation	Environmental Chemistry (KL)
Semester(s) in which the module is taught	3
Person responsible for the module	Dr. M. Cholid Dj., 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 (2 x 50 min); Structured study: 1 x (2 x 60 min); Self study: 1 x (2 x 60 min)
Credit points	2
Required and recommended prerequisites for joining the module	KA1
Module objectives/intended learning outcomes	<ol style="list-style-type: none">1. Work together and have social sensitivity and concern for society and the environment (S6)2. Demonstrate a responsible attitude towards work in their field of expertise independently (S9)3. Mastering the theoretical concepts of structure, properties, changes, kinetics, and energetics of molecules and chemical systems, identification, separation, characterization, transformation, synthesis of macromolecular chemicals, and their application (PP1)4. Mastering the basic principles of software for analysis, synthesis, and molecular modeling in general or more specific chemical fields (PP3)5. 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 under their field of expertise (KU1)6. Able to analyze several alternative solutions in identification, analysis, isolation, transformation, and synthesis of available chemicals and present analysis conclusions for appropriate decision making (KK3)

Content	<ol style="list-style-type: none"> 1. Green Chemistry Theory Concept 2. Environmental Chemistry Concept 3. Transport and Reconcentration of Organic Compounds and Metal Ions 4. Water Analysis and Trace Pollutants 5. Soil and Waste Analysis 6. Air analysis 7. Chemical and ecotoxicological pollution 8. EIA Concept (.Environmental Impact Assessment) AMDAL 9. Identification of ANDAL Impact 10. From waste make to green environment/money
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	<ol style="list-style-type: none"> 1. APHA (American Public Health Associations), 1986, Standard Methods: For Examination of Water and Waste Water, 14th ed., APHA, Washington D.C. 2. Sandell, E., B. dan H Onishi, 1978, Colorimetric Determination of Traces of Metals, 4th edition, Interscience, New York. 3. Radojevic, M. dan Bashkin, V. N., 1999, Practical environmental Analysis, Royal Society of Chemistry, Cambridge. 4. DEKES RI, KEP-MEN 2003 tentang Baku Mutu Air. 5. P. O'Neill, 1993, Environmental Chemistry, 2nd ed., Chapman and Hall, London. 6. B.J. Alloway and D.C. Ayers, 1994, Chemical Principles of Environmental Pollution, Blackie, London. 7. R.M. Harrison (ed.), 1992, Understanding our Environment: An Introduction to Environmental Chemistry and Pollution, 2nd ed., Royal Society of Chemistry, Cambridge.