



Diponegoro University
Faculty of Science and Mathematics
Undergraduate Program Of Chemistry

Module designation	Elucidation of Molecular Structure of Organic Compounds (ES)
Semester(s) in which the module is taught	6
Person responsible for the module	Dra. Dewi Kusriani, M.Si Dr. Khairul Anam, M.Si
Language	Indonesian
Relation to curriculum	Compulsory/ elective / specialisation
Teaching methods	Lecture
Workload (incl. contact hours, self-study hours)	Face to face: 2 x (2 x 50'') Structure study + Self study: 2 x [(2 x 60'') + (2 x 60'')]
Credit points	2
Required and recommended prerequisites for joining the module	KO3, AO
Module objectives/intended learning outcomes	(M1) can define, understand and analyze UV-Vis spectroscopy (M2) can define, understand and analyze Infrared (IR) Spectroscopy (M3) can define, understand and analyze Gc. Spectroscopy-Mass (M4) can define, understand and analyze LC. Spectroscopy-Mass (M5) can define, understand and analyze ¹ HNMR (M6) can define, understand and analyze ¹³ CNMR (M7) can determine the molecular structure of an organic compound based on the spectrum from UV-vis, IR, mass, and NMR

Content	<ol style="list-style-type: none"> 1. UV-Vis spectroscopy 2. Infrared (IR) spectroscopy 3. Mass spectroscopy (GC-MS) 4. Mass spectroscopy (LC-MS) 5. Core Magnetic Resonance Spectroscopy (¹H NMR) 6. Core Magnetic Resonance Spectroscopy (¹³C NMR) 7. Determine the molecular structure of organic compounds. Based on UV-Vis, IR, Mass and NMR spectra (¹H NMR and ¹³C NMR) 8. Determine the molecular structure of organic compounds. Based on UV-Vis, IR, Mass and NMR spectra (¹H NMR and ¹³C NMR)
Exams and assessment formats	Mid-Semester Exam and Final Exam
Study and examination requirements	<p>Participatory Activities -10%</p> <p>Project Results -30%</p> <p>Cognitive/Task Knowledge -5%</p> <p>Quiz -5%</p> <p>Mid-semester -25%</p> <p>Final exams -25%</p>
Reading list	<ol style="list-style-type: none"> 1. Silverstein, R.M dan Bassler, G.C., 1967, Spektrometric Identification of Organic Compounds, 2nd edition, John Wiley and Sons, New York 2. William Kemp, 1975, Organic Spectroscopy, ELBS and the Mac Millan Press Ltd 3. Kalinowski, H.O., S. Berger, S. Braun. 1988, Carbon-13 NMR Spectroscopy. Printed and bound in Great Britain by St.Edmundsbury Press. John Willey and Sons. New York 4. Furnis B.S., Hannaford A.J., Smith P.W.G., Tatchell A.R., 1989, Vogel's Textbook of Practical Organic Chemistry, edisi 5, Longman Scientific and Technical, New York 5. Shriner R.L., Fuson R.C., Curtin D.Y., Morrill t.c., 1980, The Sistematic Identification of Organic Chemistry, edisi 6, John Wiley and Sons, New York