MODULE HANDBOOK

Module Name	**Organic Chemistry 2: Polyfunctional Compound**
Module level	Bachelor
Abbreviation, if applicable	
Sub-heading, if applicable	-
Course included in the module, if applicable	-
Semester/term	4th/Second year
Module coordinator(s)	Dr. Ismono M.S.
Lecturer(s)	Prof. Dr. Suyatno, M.Si., Prof. Dr. Tukiran, M.Si, Dr. Ratih Saputri, M.Si
Language	Bahasa Indonesia
Classification within the curriculum	Compulsory
Teaching format/class hours per week during the semester:	3 hours lectures (50 min / hour)
Workload:	1 CU for bachelor degree equals to 3 workhours per week or 170 minutes (50' face to face learning, 60' structured learning, and 60' independent learning). In one semester, courses are conducted in 14 weeks (excluding mid and end-term exam). Thus, 1 CU equals to 39.67 workhours
Credit points:	3 CU = 3 x 1.59 = 4.77 ECTS
Prerequisites course(s):	Monofunctional Organic Chemistry
Targeted learning outcomes:	CLO 1 Students can use information based on experience and cases in everyday life, other learning resources, and ICT to support understanding of the concept of polyfunctional compound with discussions, presentations, and collaboration to study about polyfunctional compounds. CLO 2 Students be able to apply the concept of polyfunctional organic compounds, such as alkadienes, polycyclic and heterocyclic aromatic hydrocarbons, carbohydrates, proteins, fats, and natural product in everyday life. CLO 3 Having a responsible and attitude by applying an understanding of learning material in the organic chemistry 2 (ploy functional compound) about the properties of compounds in implementation in everyday life. CLO 4 Students be able to participate in society and have a commitment to developing self-potential in order to build character to achieve organizational goals.

Content:	1. **Polyfunctional compouds**: Diene compounds, Dicarbonyl compounds, Dicarboxylic acid, Hydroxy carboxylic acid, Oxo carboxylic acid, The Diels-Alder reaction. Lactone formation. 2. **Polycyclic aromatic hydrocarbons and eterocyclic aromatic hydrocarbons**: definition, nomenclature, properties, reaction, example, preparation, and usage. 3. **Charbohydrates**: The structure and nomenclature of carbohydrates, monosaccharides, disaccharides, Polysaccharides, Carbohydrate reactions. 4. **Amino acids and protein**: amino acid, peptides, Protein and enzymes: the structure, types, chemical properties, and reaction. 5. **Lipids**: Structure and function of lipids, Hydrogenation of vegetable oil, Oil and grease lathering, saponification, phospholipids, teroids. 6. **Biological Organic Compounds**: bioactive compounds (secondary metabolites including terpenoids, steroids, flavonoids, and alkaloids) plants and their benefits in the pharmaceutical industry.
Study / exam achievements:	Students are considered to be competent and pass if at least get 55 Final score is calculated as follows: 20% participation + 30% assignment + 20% middle exam (UTS) & 30% final exam (UAS) Table index of graduation • A = 4 (85 ≤-≥ 100) • A- = 3,75 (80 ≤-< 85) • B+ = 3,5 (75 ≤- < 80) • B = 3 (70 ≤-< 75) • B- = 2,75 (65 ≤-<75) • C+ = 2,5 (60 ≤-<65) • C = 2 (55 ≤-<60) • D = 1 (40 ≤-<55) • E = 0 (0 ≤-<40)
Media:	Computer, LCD, White board, online media and related online learning resources.
Learning Methods	Individuals' assignment, group assignment, discussion, presentation.
Literature:	1. Fessenden, Ralph J. and Fessenden, Joan S. 1995. Organic Chemistry, Fifth Edition. 2. Solomons G., TW. 1996. *Organic Chemistry* sixth edition. New York: John Wiley & Sons Inc. 3. Article related to the topic, from website resources.
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