

## Module Handbook

Modul Name	<b>Organic Chemistry I</b>
Module Level	Bachelor
Abbreviation, if applicable	KIO201
Sub-heading, if applicable	-
Course included in the module, if applicable	-
Semester/term	3 <sup>rd</sup> / second year
Modul coordinator(s)	Dr. Mulyadi Tanjung, M. Si. (C1) , Dr. Alfinda Novi Kristanti, DEA (C2)
Lecturer(s)	Dr. Nanik Siti Aminah, M.Si, (C2) Tjitjiek Srie Tjahjandarie Ph. D. (C2)
Language	Bahasa Indonesia
Classification within the curriculum	Compulsory
Teaching format/class hours per week during the semester	3 hours lectures (50 min / hour)
Workload	3 hours lecture, 3hours structured activities, 3 hours individual activities, 13 week a semester, and total 117 hours a semester~ 3.9 ECTS *
Credit point	3 SCU
Requirement	General Chemistry II
Learning Outcomes	<p><b>General Competence (knowledge):</b> Students can conclude reactions that occur in a saturated aliphatic hydrocarbon group of compounds, haloalkanes, unsaturated aliphatic hydrocarbons, aromatic hydrocarbons correctly.</p> <p><b>Spesific Competence :</b> At the end of the lecture, students can compare and conclude reactions that occur to the compound class hydrocarbon aliphatic saturated, haloalkanes, aliphatic hydrocarbon unsaturated (alkene, alkyne, and alkadiena), aromatic hydrocarbons, alcohols, phenols, and ether, as well as aldehydes and ketones.</p>
Content	Course materials discuss the understanding of organic chemistry, carbon atoms in the periodic system, the structure of carbon atoms, covalent bonds in carbon compounds, the molecular formula, and structure isomers. The nomenclature of organic compounds according to IUPAC and trivial names. Saturated aliphatic hydrocarbon: C atom (sp <sup>3</sup> ), conformation, free radical substitution. The basics of stereochemistry: chiral C atoms understanding and chiral compounds, the absolute and relative configuration. Haloalkane compound: reaction SN <sub>1</sub> , SN <sub>2</sub> , E <sub>1</sub> , and E <sub>2</sub> . Unsaturated aliphatic hydrocarbons (alkenes, alkyne, and alkadiena): Csp <sup>2</sup> atom, Csp, electrophilic addition reaction, the addition of 1.4 resonance. Aromatic hydrocarbons: kearomatisan, nomenclature and reaction SE. Alcohols, phenols, and ether: nomenclature, physical properties, synthesis, chemical reactivity, acidity phenol. Aldehydes and ketones: structure, physical properties and nucleophilic addition reactions.
Study/exam achievements	Students are considered to be competent and pass if at least get 55  Final score is calculated as follows: 20% assignment + 20% Quiz + 30%

	<p>middle exam (UTS)&amp; 30% final exam (UAS)</p> <p>Tableindex of graduation</p> <ul style="list-style-type: none"> <li>• 0 - 44,999 E,</li> <li>• 45 - 54,999 D,</li> <li>• 55 - 59,999 C,</li> <li>• 60 - 64,999 BC,</li> <li>• 65 - 69,999 B,</li> <li>• 70 - 74,999 AB,</li> <li>• 75 - 100 A</li> </ul>
Forms of media	Computer, LCD, White board
Learning Methods	Lectures, discussion, assignment
Literatur	<ol style="list-style-type: none"> <li>1. Fessenden, R., Fessenden J., 1994, <i>Organic Chemistry</i>, 5<sup>th</sup> ed., Wadsworth, Inc Belmont, California.</li> <li>2. Morrison, R.T., Boyd, R.N., 1992, <i>Organic Chemistry</i>, 6<sup>th</sup> ed., Prentice Hall International Inc., London.</li> </ol>
Note	<ol style="list-style-type: none"> <li>1. This course is divided into two parallel classes with the materials and ingredients but given the same test in the same time with different lecturers.</li> <li>2. This course is half of the subjects of the basic organic and are in a series with the course of Organic Chemistry II, in addition to the Organic Chemistry I and Organic Chemistry II is a subject which underlies subjects-more courses in organic chemistry.</li> </ol> <p>*Total ECTS = {(total hours workload x 50 min ) / 60 min } / 25 hours</p> <p><b>Each ECTS is equals with 25 hours</b></p>