

PHYSICAL ORGANIC CHEMISTRY

Module designation	Physical Organic Chemistry
Semester(s) in which the module is taught	2
Person responsible for the module	1. Drs. Hadi Poerwono, Apt., M.Sc., Ph.D(Course Coordinator) 2. Dr. Juni Ekowati, M.Si, Apt.
Language	<i>Bahasa Indonesia</i>
Relation to curriculum	<i>Compulsory/ elective /-specialisation</i>
Teaching methods	<i>lecture, discussion, assignment</i>
Workload (incl. contact hours, self-study hours)	<i>(Estimated) Total workload: Contact hours (structured activities.): 90,67 hours Private study including independent learning activities: 90,67 hours</i>
Credit points	<i>2 SCU / 6 ECTS</i>
Required and recommended prerequisites for joining the module	NA
Module objectives/intended learning outcomes	<p>Students are:</p> <p>LO1: Able to realize excellence based on religious morals (excellence with morality), able to work together, and show a responsible attitude to work in their field of expertise independently</p> <p>LO2: Able to internalize the spirit of independence, struggle, and entrepreneurship</p> <p>LO4: Able to develop a pharmaceutical professional performance with analytical acumen in solving pharmaceutical problems and managing research in the pharmaceutical field related to national and global systems and policies, both inter and inter-disciplinary approaches.</p> <p>LO5: Able to access and review information through an Information and Communication Technology (ICT) system, decide on a specific subject of study, maintain the feasibility of implementing research designs, conduct research, analyze data, conclude research results comprehensively, and create strategic issues based on the study that reflect the latest updates in the field of pharmaceutical sciences, and communicate them in the media and scientific forums at the national and international level through an interdisciplinary or multidisciplinary approach in the form of a thesis or other equivalent forms.</p> <p>LO8: Able to carry out drug designs through the synthesis of bioactive compounds based on the structure-activity relationship.</p> <p>LO13: Able to design drug development both from natural products and/or synthetic compounds by considering the biological mimicry system.</p>

Content	Physical organic chemistry course covers topics about intramolecular properties of organic compounds (induction, resonance, covalent bonds, dipole moments, acid-base properties), structural relationships and molecular reactivity of organic compounds (addition, elimination, substitution, and rearrangement reactions), relationships stereochemistry with molecular reactivity of organic compounds (stereoisomers, molecular conformations, and configurations), regiospecific and regioselective organic reactions.
Exams and assessment formats	<i>Take-home written assignments</i>
Study and examination requirements	<i>the final grade in the module is composed of 30% discussion, 30% presentation, 30% take-home assignments, 10% in-class participation and soft-skills assessment. Students must have a final grade of 70% or higher to pass</i>
Reading list	<ol style="list-style-type: none"> 1. <i>Issacca, N.S., 1992. Physical Organic Chemistry, 2nd ed., New York: Longman Group Ltd, John Wiley and Sons Inc.</i> 2. <i>Richard, J.P., 2009. Advances in Physical Organic Chemistry. Vol 43, Amsterdam: Elseiver.</i> 3. <i>Smith, M.B., and March J., 2007. March Advanced Organic Chemistry. 6th ed., Hoboken: John Wiley and Sons Inc.</i> 4. <i>Sykes, P., 1986. A Guidebook to Mechanism in Organic Chemistry. Essex: Longman Group Ltd.</i> 5. <i>Bruice, P.Y., 2011. Organic Chemistry, 6th ed., New York: Pearson Education. Inc.</i>