

Module Handbook

Module Name:	Drug Design
Module Level:	Bachelor
Abbreviation, if applicable:	KIM402
Sub-heading, if applicable:	
Courses included in the module, if applicable:	
Semester/term:	1 or 2 (open semester) / Fourth year
Module coordinator(s):	Prof.Dr. Siswandono, M.S., Apt
Lecturer(s):	Prof.Dr. Siswandono, M.S., Apt
	Dra. Nuzul Wahyuning Diyah, M.Si., Apt
	Prof.Dr. Purwanto, Apt.
	Dr. Bambang Tri Purwanto, M.S., Apt.
Language:	Bahasa Indonesia
Classification within the curriculum:	Compulsory Course /Elective Studies
Teaching format/class hours per week during the semester:	100 minutes lectures, 13 lecture classes/semester
Workload:	Total 22 hours a semester
Credit Points:	2
Requirements:	Student must have taken Physical Chemistry (KIF201), Organic Chemistry II (KIO203) and Biochemistry (BIK201) courses.
Learning goal/competencies:	<p>Knowledge</p> <ul style="list-style-type: none"> – To understand the concept of developing new drug from rational drug design. <p>Skills</p> <ul style="list-style-type: none"> – Honesty, discipline, and teamwork. – Critical thinking, comprehensive, scientifically valid. – Active in discussion. <p>Competence</p> <ul style="list-style-type: none"> – To understand and able to apply the concept and theories of developing new drug. – To understand and able to make rational design of new drug. – To understand and able to know active compounds in drugs, its characteristic and receptor from 3D molecular views. – To understand and able to analyze drug-receptor interaction from computer program and apply it into drug development experiment.
Content:	Aspect of drug development and rational drug design, steps and optimization method of drug development, molecule modification aspect, pre-drug design, drug

	compounds characteristics and its receptor from 3D molecular view, application of molecular model and drug-receptor interaction process in drug formulation
Study/exam achievements:	<p>Student are considered to be competent and pass if at least get 50% of maximum mark of the exams based learning.</p> <p>Final score (NA) is calculated as follow : 45% Exam I + 45% Exam II + 10% Assignment</p> <p>Final index is defined as follow :</p> <p>A : $100 > NA > 75$ AB : $75 > NA > 70$ B : $70 > NA > 65$ BC : $65 > NA > 60$ C : $60 > NA > 55$ D : $55 > NA > 50$ E : $50 < NA$</p>
Forms of Media:	LCD projector, whiteboard, internet, computer, loudspeaker.
Literature:	<ol style="list-style-type: none"> 1. Siswandono, 2014. <i>Pengembangan Obat Baru</i>. Surabaya: Airlangga University Press. 2. Siswandono dan Bambang Soekardjo, Eds. 1998. <i>Prinsip-Prinsip Rancangan Obat</i>. Surabaya: Airlangga University Press. 3. Lemke TL <i>et al</i>, 2008, <i>Foye's Principles of Medicinal Chemistry</i>, 6th ed., Philadelphia: Lippincott Williams and Wilkins. 4. Beale, J.M. and Block, J.H. eds., 2011. <i>Wilson and Gisvold's Textbook of Organic Medicinal and Pharmaceutical Chemistry</i>. 12th ed., Philadelphia: Lippincott Williams & Wilkins. 5. Young DC, 2009, <i>Computational Drug Design, A Guide for Computational and Medicinal Chemists</i>, Hoboken: John Wiley and Sons. 6. Smith HJ, Ed, 2006, <i>Introduction to the Principles of Drug Design and Action</i>, 4th Ed, Boca Raton: CRC Press.
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