

Module Description

MPK 3407 Natural Products Chemistry

Module Name	Natural Products Chemistry
Module level, if applicable	Undergraduate Programme
Code, if applicable	MPK 3407
Subtitle, if applicable	-
Course, if applicable	-
Semester(s) in which the module is taught	5 th Semester
Module coordinator(s):	Rudiyansyah, Ph.D
Lecturer	Rudiyansyah, Ph.D , Dr. Agus Wibowo, Dr. Ary Widiyantoro, Afghani Jayuska, M.Si
Language	Bahasa Indonesia
Relation to curriculum	<i>Compulsory</i> Courses for undergraduate programme in Chemistry
Type of teaching, contact hours	Decide teaching/training components for each course outcome • Theory /Face to face lecture (for understanding) : 12 lectures meetings • Assignments : 2
Workload	<i>(Estimated) workload: 2 x 0.83 hours = 1.66 hours.</i> <i>Self-Study: 2 x 1 hour = 2 hours</i> <i>Assignments: 2 x 1 hour = 2 hours</i> <i>Examinations: 2 x (2 x 0.83) = 3.32 hours</i> <i>82.56 total hours</i>
Credit points	2 (3.34 ECTS)
Requirements according to the examination regulations	Registered in this course Minimum 75% attendance in this course
Learning goals/competencies:	Intended Learning Outcomes (ILO) After taking this course, students will be able to: • LO-1 • LO-3
Module objectives	• Students are able to overview of brief history and development of natural products • Students possess background of natural products

	- Students understand to describe general organic reactions in natural products compounds - Students acquire to classify of natural products compounds - Students recognise differences of biosynthetic pathways in natural products - Students appreciate characteristic of natural products compounds classification												
Content:	- History and development of natural products - Primary and secondary metabolism - General reactions on natural products compounds - Phytochemical Screening - Acetate pathway - Shikimic pathway - Mevalonate and methyl-erythritol phosphate pathways - Terpenoids - Steroids - Polyketides - Phenolics - Alkaloids												
Attribute Soft skill:	Activeness, Team work, Critical thinking, Discipline, and Responsibility.												
Recommended prerequisites	Fundamental organic chemistry												
Study and examination requirements and forms of examination	Students are considered to be competent and pass at least 50% of the maximum final grade. The final grade (NA) is calculated based on the following : <table border="1"> <thead> <tr> <th>Assessment Components</th><th>Percentage Contribution</th></tr> </thead> <tbody> <tr> <td>Participation</td><td>10%</td></tr> <tr> <td>Assignment</td><td>20%</td></tr> <tr> <td>Mid-semester test</td><td>30%</td></tr> <tr> <td>Final semester test</td><td>40%</td></tr> <tr> <td>Total</td><td>100%</td></tr> </tbody> </table> Essay form : Examination Performance Assessment : presentation and Journals review	Assessment Components	Percentage Contribution	Participation	10%	Assignment	20%	Mid-semester test	30%	Final semester test	40%	Total	100%
Assessment Components	Percentage Contribution												
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Final semester test	40%												
Total	100%												
	Small Group Discussion												

Learning Methods	• Q & A • Case-Based Teaching Method
Media employed	white board; power point presentation; Google Classroom
Reading list	• Dewick, P. M, 2009, Medicinal Natural Products, Biosynthetic Approach, Third Edition, John Wiley & Sons • Cooper, R. And Nicola, G., 2015, Natural Products Chemistry: Sources, separations, and structures, CRC Press, Taylor & Francis Group • Nakanishi, N. Goto, T. Ito, S. Natori, S. Nazoe, S., 1983. Natural Product Chemistry. vol 1-3, Kodansha Academic Press. • Manitto, P.1981. Biosynthesis of Natural Products. John Wiley & Sons • Herbert, R. B. 1989.The Biosynthesis of Secondary Metabolites.2nd edition.Chapman & Hall. • Jurnal