



**UNIVERSITAS PADJADJARAN
FACULTY OF MATHEMATICS AND NATURAL
SCIENCES**

MASTER PROGRAM IN CHEMISTRY

**COURSE
CODE:
D20B.252**

Module designation	Biogenesis and Biosynthesis of Secondary Metabolite Compounds
Semester(s) in which the module is taught	2
Lecturers	Prof. Dr. Unang Supratman Prof. Dr. Tati Herlina Prof. Dr. Tri Mayanti
Medium of instruction	English and Indonesian
Relation to curriculum	Mandatory elective course Natural Product Chemistry and Synthesis Master of Science in Chemistry
Teaching methods	Lecture and discussion
Workload	Total workload: 53.42 hours CLASS Lecture : 16.69 hours Tutorial : 3.35 hours Assignment : 2 hours Assessment : 6.68 hours Independent Study : 26.7 hours
Credit points	3 (3-0) 3 Credits = 5.43 ECTS

Required and recommended prerequisites for joining the module	1. Synthetic Organic Chemistry
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Module objectives/intended learning outcomes	<ol style="list-style-type: none"> 1. Student is able to explain the differences between primary metabolites and secondary metabolites, biogenesis and biosynthesis 2. Student is able to identify building blocks and construction mechanisms for the formation of secondary metabolites 3. Students are able to design secondary metabolite biogenesis pathways based on the acetate or shikimate pathway or mevalonic acid or methylerythritol phosphate
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Contents	In this course students learn about the building blocks and construction mechanisms of various secondary metabolite groups. The three main pathways of biogenesis and biosynthesis of secondary metabolites were also studied, namely the acetate pathway, the shikimate pathway and the mevalonic acid pathway atate methyl erythritol phosphate. The biogenesis and biosynthetic pathways of various frameworks from various secondary metabolite groups are also studied in this course.
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Examination forms	Test, Presentation, and Assignment
Study and examination requirements	Minimum attendance at lectures is 80%. Final score is evaluated based on quiz (10%), individual assignment (20%), mid semester exam (35%), and end semester exam (35%).
Reading lists	<ol style="list-style-type: none"> 1. Dewick, P.M. (2009). Medicinal Natural Products: A Biosynthetic Approach. 3rd ed. John Willey & Sons. West Sussex 2. Paolo Manitto (1992) Biosynthesis of Natural Products, Ellis Horwood Limited New York-Chichester-Brisbane-Toronto

