

Module designation	Laboratory Work in Microbial Ecology
Semester(s) in which the module is taught	Odd
Person responsible for the module	Dra. Ratnawati M.Sc., Drs. Sudarsono M.Si.
Language	Bahasa Indonesia
Relation to curriculum	Elective
Teaching methods	Lab works, project, seminar, exam
Workload (incl. contact hours, self-study hours)	Total workload is 46 hours per semester which consists of 170 minutes of lab work per week for 16 weeks.
Credit points	1 SKS (1.6 ECTS)
Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	PLO 2 PLO 6 PLO 7 PLO 9
Content	This course introduces various medicinal plants found around the home and their benefits. Specifically, it introduces the organs of plants, and more specifically, cells or tissues as sources of natural materials. Next, a qualitative test of the natural material content is conducted.
Examination forms	Presence, quiz, task, mid semester exam, final semester exam, case study, team based project.

Study and examination requirements	The final mark will be weight as follow:			
	NO	Assessment Techniques	Percentage Weight Assessment (%)	Information
	1	Cognitive	50	Maximum assessment weight accumulation 50%
		Presence	5	
		Quiz	5	
		Task	10	
		Mid Semester Exam	15	
		Final Semester Exam	15	
	2	Participatory	50	Maximum assessment weight accumulation 50%
		Case Study	25	
		Team Based Project	25	
		Total	100	

Reading list	A. Croteau, R., Kutchan, T. M., Lewis, N. G. 2000. Natural Products (Secondary Metabolites). In Biochemistry and Molecular Biology of Plants. Eds B. Buchanan, W. Gruisern, R. Jones. Ch 24: 1250-1318. B. Evisal, R. 2013 . Tanaman Rempah dan Fitofarmaka. Lembaga Penelitian Universitas Lampung. Bandar Lampung. C. Hakim, L. 2015. Rempah dan Herba. Kebun-Pekarangan Rumah Masyarakat: Keragaman, Sumber Fitofarmaka dan Wisata Kesehatan-Kebugaran. Diandra Creative. D. Hussein, R. D. & El-Anssary A. A. 2018. Plants Secondary Metabolites: The Key Driver of Pharmacological Actions of Medicinal Plants. In Herbal Medicine. Ch 2: 11-30. E. Tjitro Soepomo, G. 2001. Morfologi Tumbuhan. Gadjah Mada University Press, Yogyakarta F. Yulianti E, Sunarti, Wahyuningsih MSH. The effect of Kappaphycus alvarezii fraction on plasma glucose, Advanced Glycation End-products formation, and 7. renal RAGE gene expression. Heliyon. 2021 Jan 19;7(1):e05978. doi: 10.1016/j.heliyon.2021.e05978. PMID: 33521358; PMCID: PMC7820565 G. Yulianti, E., Sunarti & Wahyuningsih, MSH The effect of Kappaphycus alvarezii active fraction on oxidative stress and inflammation in streptozotocin and nicotinamide-induced diabetic rats.BMC Complement Med Ther 22 , 15 (2022). https://doi.org/10.1186/s12906-021-03496-8
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