


MODULE HANDBOOK

	UNIVERSITAS PADJADJARAN FACULTY OF MATHEMATICS AND NATURAL SCIENCES BACHELOR OF BIOLOGY PROGRAMME	COURSE CODE : D10D-50601
Module designation	Bioprospection of Beneficial Plants	
Semester in which the module is taught	5	
Persons responsible for the module	1. Dr. Budi Irawan, M.Si 2. Drs. Joko Kusmoro, MP 3. Dr. Mohamad Nurzaman, M.Si	
Medium of instruction	Indonesian	
Relation to curriculum	Compulsory course of interest of specialization	
Teaching methods	Student-Centered Learning, Project-based Learning, Collaborative Learning	
Workload	Total workload : 5440 minutes = 90,67 hour Lectures, discussion, and collaborative learning : 2 x 50 minutes x 16 weeks = 1600 minutes = 26,67 hours Exercises : 2 x 60 minutes x 16 weeks = 1920 minutes = 32 hours Self-study : 2 x 60 minutes x 16 weeks = 1920 minutes = 32 hours	
Credit points	2.00 (3.62 ECTS)	
Required and recommended prerequisites for joining the module	Plant Structure and Development 1	
Module objectives/intended learning outcomes	<ol style="list-style-type: none"> 1. Able to explain the concept of bioprospecting of useful plants, including the definition of its scope and differences from related fields. 2. Able to identify useful plants based on morphological and anatomical characteristics and secondary metabolites using a determination key or biodiversity database. 3. Able to analyze the potential of bioactive compounds from plants through an in silico bioinformatics approach or preliminary phytochemical screening tests. 4. Able to assess the economic feasibility and sustainability of utilizing a useful plant, including its ecological impact and compliance with regulations. 5. Able to design bioprospecting protocols for exploring specific plants, covering the stages of collection, extraction, and analysis of target compounds. 6. Able to critique ethical and legal issues in bioprospecting, such as indigenous peoples' rights, biopiracy, and intellectual property protection. 	
Contents	<ol style="list-style-type: none"> 1. Introduction / Course Contract 2. Concept of Plant Bioprospecting and Plant Biological Resource Protocols 3. Introduction to Phytochemical Profiles and Secondary Plant Metabolites 4. Chemotaxonomy 5. Bioprospecting Medicinal Plants (drug and poison 1) 6. Bioprospecting Medicinal Plants (drug and poison 2) 7. Bioprospecting Medicinal Plants (drug and poison 3) 8. Bioprospecting Food Plants and Vegetables 	

	<ol style="list-style-type: none"> 9. Bioprospecting Spice Plants, Aromatics, and Plant Pesticides 10. Bioprospecting Fiber Plants, Dyes, and Tannins 11. Bioprospecting of Material, Wood, and Bamboo Plants 12. Bioprospecting of Biotechnology Products 13. Local Wisdom of Plant SDH 1 14. Local Wisdom of Plant SDH 2
Examination forms	Quiz, Midterm exam, Assignment, and Final exam
Study and examination requirements	The minimum attendance in lectures is 80%. Final grades are evaluated based on quiz (10%), midterm exam (15%), assignment (10%), final exam (15%), project and participation (50%)
Reading lists	<ol style="list-style-type: none"> 1. Batabyal, Amitrajeet A. and Peter Nijkamp. 2013. Biodiversity Prospecting over Time and under Uncertainty: A Theory of Sorts. TI 2013-163/VIII. Amsterdam, the Netherlands. 2. Convention on Biological Diversity. 2011. The Tkarihwaie:Ri Code of Ethical Conduct to Ensure Respect for the Cultural and Intellectual Heritage of Indigenous and Local Communities. Montreal, Canada: Secretariat of the CBD 3. Gunawan, W. dan Mukhlisi. 2014. Bioprospeksi: Upaya pemanfaatan tumbuhan obat secara berkelanjutan di kawasan konservasi. Jakarta: Kementerian Lingkungan Hidup dan Kehutanan 4. Moran, Katy, Steven R. King, and Thomas J. Carlson. 2001. "Biodiversity Prospecting: Lessons and Prospects." Annual Review of Anthropology 30:505–26. 5. Colegate, S. M., & Molyneux, R. J. (Eds.). (2019). Bioactive Natural Products: Detection, Isolation, and Structural Determination (Edisi ke-2). CRC Press.