MODULE HANDBOOK

	UNIVERSITAS PADJADJARAN **FACULTY OF MATHEMATICS AND NATURAL SCIENCES BACHELOR OF BIOLOGY PROGRAMME**	**COURSE CODE: D10D-60108**
Module designation	Collection and Management of Biological Specimens	
Semester in which the module is taught	5	
Person (s) responsible for the module	1. Dr. Budi Irawan, M.Si 2. Annisa Ph.D 3. 3. Dr. Eneng Nunuz Rohmatullayaly, M.Si	
Medium of instruction	Indonesian	
Relation to curriculum	Elective course	
Teaching methods	Lectures, discussions, cooperative learning, and inquiry learning, project based learning	
Workload	Total workload : 5440 minutes = 90.67 hours Lectures, discussions, cooperative learning, and inquiry 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	General Biology	
Module objectives/intended learning outcomes	1. Able to describe the scope of specimen collection and management, including specimen types and various collections, and sampling ethics. 2. Able to describe plant specimen collection and management techniques for research and education purposes and provide examples. 3. Able to describe land animal specimen collection and management techniques for research and education purposes and provide examples. 4. Able to analyze marine animal specimen collection and management techniques for research and education purposes and provide examples. 5. Able to analyze specimen collection and management techniques for molecular analysis and provide examples. 6. Able to design fossil specimen collection and management techniques for evolutionary studies and provide examples. 7. Able to design preserved specimen collection management in museums and apply biological specimen collection and management techniques.	

Contents	1. Introduction and Course Contract 2. Functions and Benefits of Biological Resource Collections 3. Collection Techniques for Higher and Lower Plants 4. Collection Techniques for Terrestrial and Aquatic Animals 5. Specimen Collection Techniques for Molecular Analysis 6. Fossil Collection and Maintenance Techniques 7. Collection and Museum Management
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	1. Bridson, D., & Forman, L. (1992). The herbarium handbook, rev. ed. *Kew: Royal Botanic Gardens*. 2. Rugayah, R. A., Windadri, F. I., & Hidayat, A. (2004). Pedoman pengumpulan data keanekaragaman flora. *Dalam: Rugayah, Widjaja EA & Praptiwi (eds.). Bogor: Puslit-LIPI*, 5-42. 3. De Vogel, E. F. (1987). *Manual of herbarium taxonomy*. Unesco. 4. William Goodwin, Ed. (2016) *Forensic DNA Typing Protocols*, 2nd Edition. Humana Press. New York. 5. Mónica V. Cunha and João Inácio, Ed. (2015) *Veterinary Infection Biology: Molecular Diagnostics and High-Throughput Strategies* Methods in Molecular Biology. Springer Science+Business Media New York. 6. Funk, V.A., Gostel, M., Devine, A., Kelloff, C.L., Wurdack, K,Tuccinardi, C. , Radosavljevic, A, Peters, M., Coddington, J. (2017). *Guidelines for collecting vouchers and tissues intended for genomic work (Smithsonian Institution): Botany Best Practices*. Biodiversity Data Journal 5: e11625. 7. Halm, D. The epistemological and conservation value of biological specimens. (2023). Biol Philos 38, 22.