MODUL HANDBOOK

	UNIVERSITAS PADJADJARAN **FACULTY OF MATHEMATICS AND NATURAL SCIENCES** **BACHELOR OF BIOLOGY PROGRAMME**	**COURSE CODE :** **D10D-50607**
Module designation	Tropical Biodiversity	
Semester in which the module is taught	5	
Persons responsible for the module	1. Prof. Parikesit, M,Sc., Ph.D 2. Prof. Dr.Wawan Hermawan, M.Sc. 3. Prof. Johan Iskandar, M.Sc., Ph.D. 4. Prof. Dr. Erri N Megantara 5. Drs. Hikmat Kasmara, M.Si. 6. Dr. Susanti Withaningsih, M.Si.	
Medium of instruction	Indonesian	
Relation to curriculum	Compulsory course	
Teaching methods	Student-Centered Learning, Project-based Learning, Collaborative Learning	
Workload	Total workload : 5440 menit = 90.67 jam Lecture, discussion, and collaborative learning : 2 x 50 menit x 16 minggu = 1600 menit = 26.67 jam Exercises : 2 x 60 menit x 16 minggu = 1920 menit = 32 jam Self-study : 2 x 60 menit x 16 minggu = 1920 menit = 32 jam	
Credit points	2.00 (3.62 ECTS)	
Required and recommended prerequisites for joining the module	General ecology, bioconservation	
Module objectives/intended learning outcomes	1. Students are able to analyze the dynamics of biodiversity in relation to climate change issues and predict trends in change using a biogeographical landscape ecology approach and spatial models 2. Students are able to design biodiversity conservation strategies based on scientific data and multi-stakeholder participation that consider economic-ecological values and socio-ecological resilience 3. Students are able to evaluate the effectiveness of institutional policies and biodiversity management mechanisms through local, national, and global case studies. 4. Students are able to integrate digital technologies such as bioinformatics, remote sensing, AI, and big data in adaptive biodiversity monitoring and management. 5. Students are able to develop ethical, sustainable, and inclusive biodiversity-based business models that support the circular economy and community welfare. 6. Students are able to formulate interdisciplinary and transdisciplinary approaches to resolving conflicts in the management of biological resources involving	
Contents	1. Spatial Analysis of Biodiversity and Climate Change: Species Distribution Models, Habitat Fragmentation, and Land Use Change 2. Evidence-Based Strategic Conservation Planning: Ecological, Social, and Economic Approaches 3. Evaluation of Biodiversity Policies and Natural Resource Management 4. Utilization of Innovative Technologies in Biodiversity Monitoring and Management 5. Biodiversity Business Innovation: Towards a Circular Economy and Sustainable Bioeconomy 6. Conflict Resolution in Biodiversity Management: Ecological, Social, and Legal Perspectives	
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. Edward.O.Wilson. 1992. The Diversity of Life. W.W. Norton & Company. Marcelo Tabarelli. 2010. Tropical Biodiversity in Human-Modified Landscape : What is our Trump Card. Biotropica. 2. Bappenas. 2003. Strategi dan Rencana Aksi Keanekaragaman Hayati Indonesia 2003-2020. Bappenas. Jakarta. 3. Fahrig, L. 2003. Effect of Habitat Fragmentation on Biodiversity. Ann. Rev. Ecol.Evol.Syst. 34:487-515. 4. Kantor Menteri Negara Lingkungan Hidup.1997.Agenda 21 Indonesia : A National Strategy for Sustainable Development. KMNLH dan UNDP. Jakarta. 5. Ines Omann, Andrea Stocker, Jill Jager. 2009. Climate Changes as a Threat to Biodiversity : An Application of the DPSIR Approach. Ecological Economics. Elsevier. 6. Jocelyn F, Jacques L, Paul C, Max D , Pascal M. 2010. Managing Agricultural Change for Biodiversity Conservation in a Mediteraanean upland. Biological Conservation. Elsevier. 7. Joshua J Lawler. 2009. Climate Change Adaptation Strategies for Resources Management and Conservation Planning. The Year in Ecology and Conservation Biology. New York Academy of Sciences. 8. Vermeulen, S dan Koziell, I. 2002. Integrating Global and Local Values. A review of Biodiversity Assessment. International Institute for Environment and Development, London. UK.	

	9. Withaningsih, S., Parikesit, Rozi, F. 2025. Keanekaragaman Tumbuhan Pakan Lebah Trigona Di Kabupaten Sumedang. Unpad Press. ISBN : 978-623-352-517-6. 10. Withaningsih, S., Parikesit, Malik, A.D., Rahma, M. 2022. Analysis of the Structure and Ecological Function of an Extreme Landscape in a Tropical Region of West Java, Indonesia. Forests, 13 (1), 155. 10.3390/f13010115 11. Withaningsih, S., Wiratno., Hadi, A., Supriatna, J., Nasrudin, A. 2022. Identifying Appropriate Surrogate for Gunung Leuser Priority Species by Using their Characters and Distributions: A Review. IOP Conference Series: Earth and Environmental Science, 1211 (1) 012017. 12. Withaningsih, S., Parikesit, Fadilah, R. 2022. Diversity of bird species in Pangheotan grassland and Mount Masigit Kareumbi Hunting Park, West Java, Indonesia. Biodiversitas, 23 : 6 (2790-2798). 13. Wiratno, Withaningsih, S., Gunawan, B., Iskandar, J. 2022. Ecotourism as a Resource Sharing Strategy: Case Study of Community-Based Ecotourism at the Tangkahan Buffer Zone of Leuser National Park, Langkat District, North Sumatra, Indonesia. Sustainability, 14 (6). 10.3390/su14063399.

6. Jocelyn F, Jacques L, Paul C, Max D , Pascal M. 2010. Managing Agricultural Change for Biodiversity Conservation in a Mediterranean upland. Biological Conservation. Elsevier.
7. Joshua J Lawler. 2009. Climate Change Adaptation Strategies for Resources Management and Conservation Planning. The Year in Ecology and Conservation Biology. New York Academy of Sciences.
8. Marcelo Tabarelli. 2010. Tropical Biodiversity in Human-Modified Landscape : What is our Trump Card. Biotropica.
9. Vermeulen, S dan Koziell, I. 2002. Integrating Global and Local Values. A review of Biodiversity Assessment. International Institute for Environment and Development, London. UK.
10. Wright, S.J. 2005. Tropical Forests in a Changing Environment. Trends Ecol. Evol. 20 : 553-560