

Module name		Computational Biodiversity			
Module level, if applicable		Master's degree in 1 st year			
Code, if applicable		MST-535			
Semester(s) in which the module is taught		2 nd (second)			
Person responsible for the module		Rohmatul Fajriyah			
Lecturer		Rohmatul Fajriyah			
Language		Bahasa Indonesia			
Relation to curriculum		Compulsory course in the first year (2 nd semester) Master Degree			
Types of teaching and learning	Class size	Attendance time (hours per week per semester)	Form of active participation	Workload (hours per semester)	
Interactive Lecturing	< 20	2.5	Problem solving	Face to face teaching	35
				Structured activities	48
				Independent study	48
				Exam	5
Total Workload		136 hours			
Credit points		3 CUs / 5.1 ECTS			
Requirements according to the examination regulations		Minimum attendance at lectures is 75%. Final score is evaluated based on quiz, assignment, mid-term exam, and final exam.			
Recommended prerequisites		-			
Related course		-			
Module objectives/intended learning outcomes		After completing this course, the students have ability to: CO 1. Compose a structured scientific report based on biodiversity data analysis CO 2. Analyze and develop a biodiversity model based with modern statistical method and R/python programming CO 3. Understand the biodiversity and conservation fundamental concept, and about law and ethics on biodiversity conservation CO 4. Analyzed of biodiversity data with conventional statistical methods with R/python programming			
Content		1. Biodiversity and conservation concept 2. Statistical Descriptive for biodiversity data in R 3. Univariate statistical method for biodiversity data analysis in R 4. Data preparation 5. Data mining for biodiversity analysis: Clustering and Classification 6. Policy and laws of biodiversoty and conservation -related			
Study and examination requirements and forms of examination		The final mark will be weighted as follows:			
		No	Assessment components	Assessment types	Weight (percenta
		1	CO 1	Assignment, Midterm Exam	25%
		2	CO 2	Assignment, Final Exam	25%

	3 CO 3 Assignment, Quiz 25%
	4 CO 4 Assignment, Quiz 25%
Media employed	Google Classroom, relevant websites, slides (power points), video, interactive media, white-board, laptop, LCD projector
Reading list	<ol style="list-style-type: none"> 1. Krishnamurthy, K. V. 2003. Textbook of Biodiversity. Science Publication. 2. Gupta, R. (Ed.) 2012. Plant Taxonomy: Past, Present, and Future. Dr. Pritpal Singh Festschrift, The Energy and Resources Institute (TERI) Press. 3. Abbott et al. 1985. Taxonomic analysis in biology: computers, models, and databases Columbia University Press, NY [Chapter 7, covering phenetic methods]. 4. Singh, G. 2008. Plant Systematics: Theory and Practice. Oxford & IBH Publishing Co. Pvt. Ltd. 5. Simpson, M. G. 2006. Plant Systematics. Elsevier academic Press. 6. Neal, D. 2004. Introduction to Population Biology. Cambridge University Press 7. Hamilton, M. 2009. Population Genetics. Wiley-Blackwell Publications, USA 8. Lockwood, M., Vorboys, G. and Kothari A. (Ed.). Managing Protected Areas 9. Stuart, C., Spalding, M and Jenkins, M. the world's Protected Areas: Status, Values and prospects in 21st century 10. Turner, M. G., Gardner, R. H. and O'Neill, R. V. Landscape ecology in theory and practice: pattern and process 11. Gareth James and Daniela Witten, An Introduction to Statistical Learning with Applications in R, Springer 12. Andy Field, Jeremy Miles, and Zoe Field, Discovering Statistics Using R, Sage Publication 13. Susan Holmes and Wolfgang Huber, (2018), Modern Statistics for Modern Biology, Cambridge University Press, UK 14. Fajriyah, R. (2024). Lecture Notes on Bioinformatika I. Universitas Islam Indonesia 15. Fajriyah, R. (2024). Seri Komputasi R Statistika Nonparametrik Elementer, UII, Jogjakarta 16. Fajriyah, R. (2024). Lecture Notes on Statistika 2. Universitas Islam Indonesia 17. Fajriyah, R, and Riantika, I. 2024, Machine Learning dalam Analisis Penyakit Kanker Paru-paru, SBRC Series Analisis Data Kesehatan 2.01, UII, Jogjakarta 18. Fajriyah, Rohmatul, and Imtikhanah A. Mahmudiati. <i>Kesehatan Masyarakat Indonesia 2013 : SBRC Series Analisis Data Kesehatan 1.01</i>. Edited by Winoto, Darmawan E. Eureka Media Aksara, 2023.

Date :	Date :	Date : Sept 5, 2024
Authorized by Head of Study Program:	Examined by Coordinator of Cluster Interest	Prepared by Lecturer/Coordinator of Lecturers:
Rohmatul Fajriyah	Rohmatul Fajriyah	Rohmatul Fajriyah