

Module name		Neural Network & Deep Learning			
Module level, if applicable		Master's degree in 1 st year			
Code, if applicable		MST-532			
Semester(s) in which the module is taught		2 nd (second)			
Person responsible for the module					
Lecturer					
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 scientific investigation on the analysis CO 2. Solve the statistical problem with neural network CO 3. Solve the statistical problem with deep learning CO 4. Define the variable interest in the existing problem			
Content		1. Introduction to neural network and deeplearning 2. Basic architecture, back propagation dan practical issue of neural network 3. Common neural architecture 4. Reinforcement Learning 5. Matrix Factorization 6. Training Deep Neural Network: Stochastic Gradient Descent 7. Set up and initial issue in neural network 8. Recurrent Neural Networks (RNN) 9. Convolutional Neural Networks (CNN)			
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, Quiz, Midterm Exam	20%

	2	CO 2	Assignment, Quiz, Midterm Exam	30%
	3	CO 3	Assignment, Quiz, Final Exam	20%
	4	CO 4	Project/Assignment, Final Exam	30%
Media employed	Google Classroom, relevant websites, slides (power points), video, interactive media, white-board, laptop, LCD projector			
Reading list	1. Charu C. Aggarwal. (2018). Neural Networks and Deep Learning: A Textbook. Springer 2. Mark Ryan. (2020). Deep Learning with Structured Data. Simon and Schuster. 3. John D. Kelleher. (2019). Deep Learning. MIT Press.			

Date :	Date :	Date : May 5, 2023
Authorized by Head of Study Program:	Examined by Coordinator of Cluster Interest	Prepared by Lecturer/Coordinator of Lecturers:
Rohmatul Fajriyah	Dr. RB Fajriya Hakim, M.Si	Dr. RB Fajriya Hakim, M.Si