HANDBOOK

BACHELOR OF INFORMATICS PROGRAM
DEPARTMENT OF INFORMATICS
FACULTY OF INTELLIGENT ELECTRICAL AND INFORMATICS TECHNOLOGY
INSTITUT TEKNOLOGI SEPULUH NOPEMBER

Module name	**Deep Learning**
Module level	Undergraduate
Code	IF1843958
Courses (if applicable)	**Deep Learning**
Semester	8
Contact person	
Lecturer	
Language	Bahasa Indonesia and English
Relation to curriculum	1. Undergraduate degree program; mandatory; 8th semester. 2. International undergraduate program; mandatory; 8th semester.
Type of teaching, contact hours	1. Undergraduate degree program: lectures, < 60 students, 2. International undergraduate program: lectures, < 40 students
Workload	1. Lectures: 3 x 50 = 150 minutes (2 hours 30 minutes) per week. 2. Exercises and Assignments: 3 x 60 = 180 minutes (3 hours) per week. 3. Private study: 3 x 60 = 180 minutes (3 hours) per week.
Credit points	3 credit points (sks).
Requirements according to the examination	A student must have attended at least 80% of the lectures to sit in the exams.

regulations		
Mandatory prerequisites	Computational Intelligence	
	After completing this module, a student is expected to:	

Learning outcomes and their corresponding PLOs	**CO1** Students are able to explain the theory, principles, and various models of deep learning.	PLO3
	CO2 Students are able to use appropriate deep learning model to solve various learning problems, such as single modal learning, multimodal learning, and generative model learning.	PLO3
	CO3 Students are able to create programs to solve real world problems using appropriate in-depth learning algorithms.	PLO3
	CO4 Students are able to conduct independent research on a particular topic, write a research report with a small scope, and make a presentation.	PLO3
	C05 Students are able to criticize various methods to solve real world problems using deep learning	
Content	Knowledge: Mastering concept and principles of Intelligent System such as representation and reasoning techniques, searching technique, intelligent agent, data mining, machine learning, and development of intelligent application in various fields, and also mastering concept and principles of computation science such as manage information, multimedia data processing, and numerical analysis. Specific Skill: Able to design and develop applications using principles of intelligent systems and computing science to produce intelligent applications in various fields.	
Study and examination requirements and forms of examination	Mid-terms examination and Final examination.	
Media employed	LCD, whiteboard, websites, books (as references), etc.	
Assessments and Evaluation	CO1: Problem 1 in mid-term exam (5%) and exercise 1 (5%) - 10% CO2: Problem 2 in mid-term exam (5%) and exercise 2 (5%) -	

	10% CO3: Problem 3 in mid-term exam (5%); problem 4 in mid-term exam (5%); assignment 1: make an algorithm and computer program (5%); and exercise 3 (5%) - 20% CO4: Problem 5 in mid-term exam (5%); problem 1 in final exam (5%) and exercise 4 (5%) - 15% CO5: Problem 2 in final exam (5%); assignment 2: make a function and recursive (5%); and exercise 5 (5%) - 15% CO6: Problem 3 in final exam (5%) and exercise 6 (5%) - 10% CO7: Problem 4 in final exam (5%) and exercise 7 (5%) - 10% CO8: Problem 5 in final exam (5%) and assignment 3: make a program based on a real-life problem (5%) - 10%
Reading List	Ian Goodfellow, Yoshua Bengio and Aaron Courville, “Deep Learning”, MIT Press Book, 2017.