

# HANDBOOK

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

Module name	<b>Data Mining</b>
Module level	Undergraduate
Code	IF184951
Courses (if applicable)	<b>Data Mining</b>
Semester	6
Contact person	
Lecturer	Dr. Eng. Chastine Fatichah, S.Kom., M.Kom Prof. Dr. Agus Zainal Arifin, S.Kom., M.Kom. Dini Adni Navastara, S.Kom., M.Sc.
Language	Bahasa Indonesia and English
Relation to curriculum	1. Undergraduate degree program; optional; 6 <sup>th</sup> semester. 2. International undergraduate program; optional; 6 <sup>th</sup> 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	Artificial Intelligence
	After completing this module, a student is expected to:

Learning outcomes and their corresponding PLOs	<b>CO1</b> Students understand about various types of data and several data sources (database, warehouse, transactional, WWW)	
	<b>CO2</b> Students understand the concept and are able to apply data pre-processing techniques	
	<b>CO3</b> Students are able to create systems for data mining and data analysis by applying methods of computational intelligence and probabilistic methods.	
	<b>CO4</b> Students are able to analyze and solve problems in a case study by utilizing a data mining system	
Content	<p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>• 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 managing information, multimedia data processing, and numerical analysis</li> <li>• Mastering principles and methods to solve computation problems by using calculus, matrices, statistics, approximation, linear optimization, modelling and simulation</li> <li>• Mastering concepts and principles of collecting, processing and storing the information in various formats</li> </ul> <p><b>Specific Skill:</b></p> <ul style="list-style-type: none"> <li>• Able to design and develop applications using principles of intelligent systems and computing science to produce intelligent applications in various fields</li> <li>• Able to solve computation problems, and mathematical modelling through exact, stochastic, probabilistic, and numeric approaches effectively and efficiently</li> </ul>	

	<ul style="list-style-type: none"> <li>• Capable of collecting, digitalizing, representing and transforming data into new useful information by using data modelling and storage in effective and efficient manners</li> </ul>
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	
Reading List	<p>Pang-Ning Tan, Michael Steinbach, Vipin Kumar, "Introduction to Data Mining", Addison-Wesley, 2005.</p> <p>Han, Jiawei; Kamber, Micheline, "DATA MINING : CONCEPT AND TECHNIQUES", Morgan Kauffman Pub, 2001</p> <p>Rajaraman, Anand, "Mining of Massive Datasets", Stanford University, 2011</p>