MODULE HANDBOOK
Simulation

BACHELOR DEGREE PROGRAM
DEPARTMENT OF MATHEMATICS
FACULTY OF SCIENCE AND DATA ANALYTICS
INSTITUT TEKNOLOGI SEPULUH NOPEMBER

MODULE HANDBOOK

Simulation

Module name	**Simulation**
Module level	Undergraduate
Code	KM184506
Course (if applicable)	**Simulation**
Semester	Fall (ganjil)
Person responsible for the module	Prof. Dr. M. Isa Irawan, M.T
Lecturer	Drs. Soetrisno, M.I.Komp. Drs. Nurul Hidayat, M.Kom Prof. Dr. M. Isa Irawan, M.T
Language	Indonesia and English
Relation to curriculum	Undergraduate degree program, **mandatory**, 5th semester.
Type of teaching, contact hours	Lectures, <60 students
Workload	1. Lectures : 3 x 50 = 150 minutes per week. 2. Exercises and Assignments : 3 x 60 = 180 minutes (2 hours) per week. 3. Private learning : 3 x 60 = 180 minutes (2 hours) per week.
Credit points	3 credit points (sks)
Requirements according to the examination regulations	A student must have attended at least 80% of the lectures to sit in the exams.
Mandatory prerequisites	Object Oriented Programming
Learning outcomes and their corresponding PLOs	Course Learning Outcome (CLO) after completing this module, 1. 1. Able to apply Mathematics thinking framework and computation-based pattern recognition algorithms to solve software development problems and intelligent systems. 2. 2. Able to solve and provide alternative solutions in the problem of pattern discovery in large-scale data with algorithm approaches studied either independently or in teamwork 3. 3. Students are able to explain the concepts in data mining which include definition, application, process, task in data mining (classification,

	clustering, association, sequence), and application of Mathematics as tools in DM	
Content	Provide a theory and practical understanding to students in solving problems that exist in a system (real) through system modeling and system simulation. 1. Simulation and Decision-Making Analysis, 2. Engineering Element Simulation, 3. Development of Simple Simulation Model, 4. Data Collection and Analysis, 5. Random Number Generator And Random Variation, 6. Verification And Validation Model, 7. Output Analysis, 8. Model Optimization	
Study and examination requirements and forms of examination	• In-class exercises • Assignment 1, 2 • Mid-term examination • Final examination	
Media employed	LCD, whiteboard, websites (myITS Classroom), zoom.	
Reading lists	Main: 1. Harry Perros, "Computer Simulation Techniques", NC State University publisher, 2009 2. Stewart V. Hoover and Ronal F. Perry, "SIMULATION – A Problem-Solving Approach", Addison-Wesley Publ. Co. Inc., 1989.3 Supporting reference: 1. Singh, V.P., "System Modeling and Simulation", New Age International Publisher, 2009 2. Claudius Ptolemoeus, "System Design, Modeling and Simulation", Mountain View California, 2014	