MODULE HANDBOOK

Graphs and Applications

MASTER DEGREE PROGRAM

DEPARTMENT OF MATHEMATICS

FACULTY OF SCIENCE AND DATA ANALYTICS

INSTITUT TEKNOLOGI SEPULUH NOPEMBER

MODULE HANDBOOK

Graphs and Applications

Module name	**Graphs and Applications**
Module level	Master
Code	KM185383
Course (if applicable)	Graphs and Applications
Semester	Fall (Ganjil)
Person responsible for the module	Dr. Darmaji, S.Si, M.T
Lecturer	Dr. Darmaji, S.Si, M.T
Language	Bahasa Indonesia and English
Relation to curriculum	Master degree program, **elective**, 3rd 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 (3 hours) per week. 3. Private learning : 3 x 60 = 180 minutes (3 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	-
Learning outcomes and their corresponding ILOs	Course Learning Outcome (CLO) after completing this module, CLO – 1 : *Students are able to understand discrete objects, analyze, construct an argument in discrete structure problems, and can apply them to solve discrete structured problems.* CLO – 2 : *Students are able to explain the connection of basic concepts of discrete mathematics with other branches of science.*
Content	*This course discusses the problem of sets, relations and functions, introducing graphs, recurring relations, and introducing combinatorics. As a support for the data structure courses, graph theory, and combinatoric analysis. To measure student ability, evaluation is carried out in the form of quizzes, exams, and individual and group assignments*

Study and examination requirements and forms of examination	• In-class exercises • Assignment 1, 2, 3 • Mid-term examination • Final examination
Media employed	LCD, whiteboard, websites (myITS Classroom), zoom.
Reading list	1. Jonathan L. Gross, Jay Yellen, Mark Anderson**, "**Graph Theory and Its Applications**"** 3th ed., CRC Press, Taylor & Francis Group, 2019 2. Nora Hartsfield, Gerhard Ringel, "Pearlsin Graph Theory", Academic Press, 1994