MODULE HANDBOOK
GRAPH ALGEBRA

MASTER DEGREE PROGRAM
DEPARTMENT OF MATHEMATICS
FACULTY OF SCIENCE AND DATA ANALYTICS

INSTITUT TEKNOLOGI SEPULUH NOPEMBER

MODULE HANDBOOK

GRAPH ALGEBRA

Module name	**Graph Algebra**
Module level	Master
Code	KM185377
Course (if applicable)	Graph Algebra
Semester	Fall (Ganjil)
Person responsible for the module	Dr. Dra. Rinurwati, M.Si
Lecturer	Dr. Dra. Rinurwati, M.Si
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 use algebraic techniques in graph studies CLO-2 : Students are able to translate graph properties into algebraic properties CLO – 3 : Students are able to use results and methods in algebra to derive theorems about graphs
Content	1. Introduction to Algebraic Graph Theory

	2. Spectrum 3. Regular Graph and Line Graph 4. Cycles and Cutters 5. Building Trees and Associated Structures 6. Tree Numbers 7. Determinant Expansion 8. Graph Automorphism 9. Point Transition Graph
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	Main : 1. Supporting : 1.