MODULE HANDBOOK
MODULE THEORY

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

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Module name	**Module Theory**
Module level	Postgraduate
Code	KM185101
Course (if applicable)	-
Semester	Fall (Gasal)
Person responsible for the module	
Lecturer	
Language	Bahasa Indonesia and English
Relation to curriculum	Master degree program, **mandatory**, 1st 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	Course Learning Outcome (CLO) after completing this module, ● A mature student is able to develop math and writing mathematical proof by default.

corresponding PLOs	● Students are able to develop an understanding of the concept and be able to draw conclusions pituitary and in particular the theory of linear algebra ideas for module theory and computational problems. ● Students are able to appreciate the importance of understanding the structure of algebra to a higher-level concept. ● Students can create awareness, especially symbolic thinking within the framework of the theory of modules. ● Students have the capability to use its understanding and analyzing models of mathematics, science and technology and other disciplines related fields. ● Students are able to develop an understanding matematematika framework that supports science and technology, and mathematics as well as communicate the results of the development of oral and written comprehension.
Content	This course presents an advanced study of a fundamental concept of Linear Algebra. The discussion is emphasized on the aspects of Algebra that is commutative group, ring and module theory. Furthermore, some materials will be provided for future understanding for students who will have special abilities in the field of Algebra and other related fields or applications that need them. Assessment of learning outcomes is done through written evaluations, classroom discussions and student presentations and releases them in paper format.
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. Subiono., "Lecture Notes: Module Theory", Mathematics Department, FMKSD-ITS, 2018 2. Adnan Tercan and Canan C. Yücel, "Module Theory, Extending Modules and its generalizations", Birkhäuser, 2016 3. Ernest Shult and David Surowski, "Algebra, A Teaching and Source Book", Springer, (2015) 4. Paul E. Bland, "Ring and Their Modules", Walter de Gruyter GmbH & Co., Berlin / Newyork, (2011) 5. Steven Roman, "Advanced Linear Algebra, Third Edition", SPRINGER, (2008) 6. WA Adkins and SH Weintraub, "Algebra An Approach via Module Theory", SPRINGER-Verlag, (1999) 7. DG Northcott, FRS, "Lessons on Rings, Modules and multiplicities", Cambridge at the University Press, (1968)

	Supporting: 1. Paul A. Furmann, "A polynomial Approach to Linear Algebra, Second Edition", SPRINGER, (2012)