UNIVERSITAS MATARAM

(University of Mataram)

FAKULTAS TEKNIK

(Faculty of Engineering)

PROGRAM STUDI TEKNIK INFORMATIKA

(Department of Informatics Engineering)

MODULE HANDBOOK DESCRIPTION

Database Technology (P22B10)

Module designation	Database Technology
Semester(s) in which the module is taught	*6 / third year*
Person responsible for the module	*Ramaditia Dwiyansaputra, S.T., M.Eng.*
Language	*Indonesian*
Relation to curriculum	*Compulsory*
Teaching methods	*Lectures, Discussions, Practical Exercises, Projects*
Workload (incl. contact hours, self-study hours)	Contact Hours every week, each week of the 16 weeks/semester including Evaluation ● 2 x 50 minutes lecturer/week ● 2 x 60 minutes class exercise/week ● Self Study hours = 120 minutes/week Total workload 340 minutes/week
Credit points	*2 (~ 3,2 ECTS)*
Required and recommended prerequisites for joining the module	Database System (W22B34)

Module objectives/intended learning outcomes	The main objective of this course is to provide students with knowledge, principles, and techniques for designing, implementing, and managing databases in various applications.
Content	Database Technology course covers the following topics: 1. Introduction to Databases and Database Management Systems (DBMS) 2. Relational Model and Relational Algebra 3. Structured Query Language (SQL) 4. Database Design and Normalization 5. Indexing and Query Optimization 6. Transactions and Concurrency Control 7. Database Security and Integrity 8. NoSQL Databases and Big Data Processing 9. Database Connectivity with Programming Languages 10. Case Studies and Project Implementation
Examination forms	Assignments, Quizzes, Practical Exercises, Project, Oral Presentation
Study and examination requirements	*Assignments: 15%* *Quizzes: 20%* *Practical Exercises: 25%* *Project: 40%*
Reading list	1. Elmasri, R., & Navathe, S. (2016). Fundamentals of Database Systems (7th Edition). Pearson. 2. Silberschatz, A., Korth, H. F., & Sudarshan, S. (2020). Database System Concepts (7th Edition). McGraw-Hill. 3. C. J. Date. (2019). An Introduction to Database Systems. Addison-Wesley. 4. MongoDB Documentation: https://www.mongodb.com/docs/ 5. PostgreSQL Documentation: https://www.postgresql.org/docs/