

**UNDERGRADUATE PROGRAM IN COMPUTER SCIENCE
DEPARTMENT OF COMPUTER SCIENCE AND ELECTRONICS
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
UNIVERSITAS GADJAH MADA**

Module name	Database
Module level	Undergraduate
Code	MII-2501
Pre-requisite courses (if applicable)	Discrete Mathematics (MII-1213)
Semester	Odd (Ganjil)
Contact person	Dr.Techn. Khabib Mustofa,S.Si.,M.Kom.
Lecturer	Dr.Techn. Khabib Mustofa,S.Si.,M.Kom.
Language	Bahasa Indonesia
Relation to curriculum	1. Undergraduate degree program, elective, 3 rd or 5 th semester.
Type of teaching, contact hours	1. Undergraduate degree program: lectures, < 60 students, Tuesday, 13.30-14.00.
Workload	1. Lectures: 3 x 50 = 150 minutes (2.5 hours) per week. 2. Exercises and Assignments: 3 x 60 = 180 minutes (3 hours) per week. 3. Private study: 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 75% of the lectures to sit in the exams.
Recommended prerequisites	
Learning outcomes and their corresponding PLOs	After completing this module, a student is expected to: CO1 explain the importance of database in information management PLO3 CO2 explain existing and popular data models PLO3 CO3 explain relational database concepts and the relational algebra as a basic theory in relational database PLO3 CO4 use query language (SQL, Relational Algebra) optimally PLO3, PLO4 CO5 use normalization techniques to reduce anomaly. PLO3 CO6 perform good database design for various cases PLO3, PLO4 CO7 explain the basic of application development dealing with data in a database. PLO4,PLO5 CO8 understand and explain contemporary technologies related to electronic data management and their utilization PLO3,PLO5
Content	The Database Lecture is a compulsory course with the aim of introducing students with matters relating to electronic data management and the introduction of the contemporary technologies related to it. The topics to be covered in the Database course include basic database concepts, data models, relational databases (concepts and design), relational algebra, Structured Query Language (SQL), design

	optimization, data-driven application development and contemporary technology in terms of data management (XML, graph database, data warehousing, at a glance big data).			
Study and examination requirements and forms of examination	Midterms examination and end-semester (final) examination.			
Media employed	LCD, blackboard, websites, and DBMS applications.			
Assessments and Evaluation	CO	Evaluation Method	Type	Percentage
	CO1	Literature exploration	Formative	2.5%
	CO2	Literature exploration	Formative	2.5%
		Problem no 1 midterm exam	Summative	6.0%
	CO3	Problem no 2 midterm exam	Summative	6.0%
		Problem no 3 midterm exam	Summative	6.0%
		Task 1 – Case study : Design	Formative	7.5%
	CO4	Problem no 4 midterm exam	Summative	6.0%
		Problem no 5 midterm exam	Summative	6.0%
		Task 2 – case study : query execution	Formative	10.0%
	CO5	Problem no 1 end-semester exam	Summative	7.5%
		Problem no 2 end-semester exam	Summative	7.5%
	CO6	problem no 3 end-semester exam	Summative	7.5%
		Task 3 – case study : normalizing database		5.0%
	CO7	Task 3 – literature exploration on apps development		5.0%
	CO8	Student Groups’ Presentation	Formative	7.5%
		Problem no 4 end-semester exam	Summative	7.5%
Reading List	Silberschatz, A., Korth, H.F. and Sudarshan, Database System Concepts, 6th Edition, McGraw-Hill, 2010.			
	Ramakrishnan, R.and Gehrke, J., Database Management Systems, 3rd Edition, McGraw- Hill, 2003			