Course Code	TKIT162105
Course Name	Database Engineering
Course Instructors	Warsun Najib; Silmi Fauziati; Teguh Bharata Adji
Course Type	Required
Course Classification	Engineering Topics
Credit / Contact Hour per Week	2 / 100 minutes per Week
Course Description	In this course, student will learn and apply the logical and physical design, and how to implement the design in the database management system.
Prerequisites Courses	
Covered Student Outcome	**Fundamental Engineering Knowledge (a)** **Development of Engineering Solution (b)** **Data and Experiment (d)** **Modern Tools Utilization (e)**

Learning Outcome

No	Learning Outcome	Study Program Student Outcome SO (a) – SO (k)
1.	Students are able to explain the role of database in the organization and the role of database development in system development life cycle	Fundamental Engineering Knowledge
2	Students are able to convert the conceptual data model into a relational data model performed at the logical database design stage.	Modern Tools Utilization
3.	Students are able to apply data modeling using entity-relationship diagram and enhanced entity relationship diagram.	Development of Engineering Solution
4	Student can implement the design into database management system software efficiently.	Data and Experiment
5	Students are able to explain the advance concept of database include: distributed databases, client-server architecture, data warehousing, data mining, and database administration.	Fundamental Engineering Knowledge
6	Students are able to use ERD and DBMS software to design a database.	Modern Tools Utilization

Topic	1. Database environment 2. Modeling data in organization 3. Enhanced ER diagram 4. Logical database design 5. Physical database design 6. Structure query language 7. Database application development 8. Datawarehouse 9. Data quality and integration 10. Database administration 11. Distributed database

Direct Asessment

Direct Asessment Plan	Measured Learning Outcome
Assignments	LO1, LO2,
Mid Exam	LO2, LO3
Final Exam	LO4

Indirect Asessment	Questionnaire (EDOM)
References	[1] Jeffrey A. Hoffer, Mary B. Prescott, and Heikki Topi, *Modern Database Management (10th edition)* Prentice Hall, 2011. [2] Database Design for Mere Mortals®: A Hands-on Guide to Relational Database Design, Third Edition. Michael J. Hernandez. Addison-Wesley Professional. 2013.