Course Title and Code	IT 131 Database

I. Course Identification and General Information:

Course Title	Database	Course Code	IT 131	Pre-requisite	CS 111
Department	Information Technology	Course Level	3	Credit Hours	3(2+1)

II. Course Description/Topics: The following course topics will be covered.

Data, Database and DBMS definition, Database system, Overview of database management, Database system architecture (Oracle context), Database Languages and models, Relational databases and database Algebra, Structured Query Language (SQL plus), Joining tables using Joins, Views, Database Integrity, Entity Relationship Model, Database design, Relational Mapping. Normalization basics ETC.

III. Course Outcomes: Summary of the main learning outcomes for students enrolled in the course.

1. When asked, in writing, students will be able to identify the principles of databases and architectures etc.
2. When asked, in writing, students will be able to understand the basic relational database concepts.
3. When asked, in writing, students will be able to show relational database terminology, as well as data modeling concepts, building Entity Relationship Diagrams (ERDs), and mapping ERDs. Oracle SQL Developer Data Modeler
4. When asked, in writing, students will be able to Differentiate and use key terms such as: information, data, database, database management system, and metadata and give a brief history of database models. Explain the advantages of a database approach compared to traditional file processing. Describe the features of the relational model including relations, tuples, attributes, domains and operators.
5. When asked, in writing, students will be able to identify and Formulate and test SQL queries using SELECT, FROM, WHERE, ORDER BY blocks, set operators, UNION, DISTINCT, LIKE, and BETWEEN operators, GROUP BY HAVING clause, sub-queries, VIEWS, INSERT, UPDATE and DELETE options, project, union, intersection, set difference, natural join, and outer join. Transaction Control Language (TCL) Oracle SQL Developer Data Modeler • Convert a Logical Model to a Relational Model.
6. Explaining the importance of normalization and Define entity integrity and referential integrity and give examples of user defined integrity constraints. Create, design, describe, and interpret Entity Relationship diagram by using Oracle SQL Developer Data Modeler.
7. When asked, in writing, students will be able to explain the relationship between functional dependencies and keys and give examples.
8. When asked, in writing, students will be able to create and work with projects, which challenge them to design, implement, and demonstrate a database solution for a business or organization.
9. Organize the students as groups in order to work as teams.

IV. Required Text:

- Database System Concepts, 6/E edition, Henry F. Korth, McGraw-Hill, 2011.

V. References:

- Fundamentals of Database Systems (7th Edition, 2015) edition, (June 18, 2015), by Ramez Elmasri, Shamkant B. Navathe, Pearson; 7 978-0133970777
- An Introduction to Database Systems, 8/E, Date, Addison-Wesley, 2004.