Code	Subject Title	Cr. Hrs	Semester
COMP-103	Computer-II	3	II
Year	Discipline		
1	Statistics-II, Islamic Education		

1. **Introduction:**
a. Data, Processing & Information
b. Data Item/Entity, Record, File, Metadata, Database
c. Files and its types
d. Traditional File Processing Systems and its disadvantages
2. **Database**
a. Database Systems
b. Database Objectives
c. Database Management Systems
d. Components of the DBMS
e. Types of DBMS
f. Database Applications
g. Advantages of Database System
h. Disadvantages of Database System
3. **Database Development**
a. Database development with information system
b. Database development process
c. 3-Schema Architecture
4. **Data Associations**
a. Entity, Attribute & Associations
b. Entity, Attribute & Associations
c. Types of Associations
d. Entity-Relation Model
5. **Relation & its Characteristics**
a. Relation
b. Properties of Relations
c. Key and its types
6. **Normalization**
a. Normalization and its steps
b. Types of Normalization
c. Effects for Normalization
7. **Database Design**
a. Logical Database Design
b. Physical Database
c. Database Administration