Module: Database Functionality 161

Module name:	Database Functionality 161
Code:	DBF161
NQF level:	5
Type:	Core – Diploma in Information Technology (all stream)
Contact Time:	34 hours
Structured time:	6 hours
Self-directed time:	40 hours
Notional hours:	80 hours
Credits:	8
Prerequisites:	Database Concepts 161 - DBC161

Purpose

This module serves as an introduction to database design and development. Database normalization, data integrity, concurrent updates, and data security will also be discussed and practised. The emphasis will be on understanding the basic concept of database management systems required to build and maintain relational databases.

Outcomes

Upon successful completion of this module, the student will be able to demonstrate:

- An informed understanding of the core areas of a database implementation, and an informed understanding of the key terms, concepts, general principles, rules, and theories thereof.
- Demonstrate an informed understanding of database objects and the ability to create database and database objects using a given database management system.
- Demonstrate the awareness of database configurations and the ability to install and configure database software.
- The ability to load data, evaluate and solve data conversion issues related to data compatibility with the given database model, and demonstrate an understanding of the consequences.
- Ability to test and fine-tune the database.
- The ability to select and apply standard methods, procedures, or techniques regarding data manipulation, and to plan and manage an implementation process within a well-defined, familiar, and supported database environment.

Assessment

- Continuous evaluation of theoretical work through written assignment, a formative, and a summative test.
- Continuous evaluation of project work, where the student must design, manage and report on the evaluation of testing methodologies and the selection of an appropriate methodology for a given scenario, justifying the choice made with well-formed arguments and evidence.
- Final assessment through a written examination.
- The assignments or projects collectively will count 30% of your class mark.
- All tests will collectively account for 70% of your class mark.

- Your class mark contributes 30% towards your final mark for the subject, while the final assessment accounts for 70% of your final mark.

Teaching and Learning

Learning materials

Prescribed Book

- 🕮 ***Essential Office 365 Third Edition: The Illustrated Guide to Using Microsoft Office***
  Author: Kevin Wilson

Additional Material

- 🕮 ***Database Systems: Design, Implementation, and Management***
  Authors: Peter Rob, Carol Coronel, Keeley Crocket

- 🕮 ***Teorey, TJ., Lightstone, SS., Tom Nadeau, T., & Jagadish, HV. (2011). Database Modeling and Design : Logical Design***

- 🕮 ***Harrington, J.L. (2016). Relational Database Desing and Implementation. Morgan Kaufmann. (ISBN: 9780128499023-003)***

Learning activities

The teaching approach is a combination of the presentation of theoretical concepts, exercises, and discussions. It is a collaborative model with a practical approach during the module. One mandatory assignment and one project must be completed during the course. The experiences and progress on these practical components form the content of class discussions.

Notional learning hours

Activity	Units	Contact Time	Structured Time	Self-Directed Time
Lecture		27.0		13.0
Formative feedback		3.5		
Project	1	3.5		9.0
Assignment	1			3.0
Test	2		4.0	8.0
Exam	1		2.0	7.0
		34.0	**6.0**	**40.0**

Syllabus

- Normalization
- Software installation and configuration
- Database creation
- Table creation

- Creating relationships between tables
- Entering data
- Query creation
- Form creation
- Report creation