Module: Database Development 181

Module name:	Database Development 181
Code:	DBD181
NQF level:	5
Type:	Core – Bachelor of Computing (all streams)
Contact Time:	48 hours
Structured time:	8 hours
Self-directed time:	64 hours
Notional hours:	120 hours
Credits:	12
Prerequisites:	None

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 practiced. The emphasis will be on using database management systems to build and maintain relational databases. The student will create databases, queries, custom forms, and reports.

Outcomes

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

- An informed understanding of the core areas of database design and implementation, and an informed understanding of the key terms, concepts, general principles, rules, and theories thereof.
- 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.
- The ability to identify, evaluate and solve defined, routine, and new problems within a familiar context, and to apply solutions based on relevant evidence and procedures or other forms of explanation appropriate to the implementation of database objects, demonstrating an understanding of the consequences.
- The ability to gather information from a range of sources, including oral, written, with regard to user requirements, to select information appropriate to the development of a database system.
- The ability to operate in a range of familiar and new contexts, demonstrating an understanding of database systems, their constituent parts, and the relationships between these parts, and to understand how actions in one area impact on other areas within the same system.

Assessment

- Continuous evaluation of theoretical work through a written assignment, a formative test, and a summative test.
- Continuous evaluation of project work.
- 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 books (EBSCO)

- 🕮 Database Modeling and Design : Logical Design Toby J. Teorey; Sam S. Lightstone; Tom Nadeau; H.V. Jagadish. Edition: 5th ed. Amsterdam : Morgan Kaufmann. 2011. eBook., Database: eBook Collection
- 🕮 Beginning Database Design Solutions Rod Stephens. Series: Wrox Beginning Guides. Indianapolis, IN : Wrox. 2009. eBook., Database: eBook Collection
- 🕮 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 a collaborative model with a practical approach, with one mandatory assignment and one project, which must be completed during the module.

Notional learning hours

Activity	Units	Contact Time	Structured Time	Self-Directed Time
Lecture		40.0		28.0
Formative feedback		5.0		
Project	1	3.0		9.0
Assignment	1			3.0
Test	3		6.0	11.0
Exam	1		2.0	13.0
		48.0	**8.0**	**64.0**

Syllabus

- Database Design
- Implementation of physical database design
- Data manipulation with SQL
- Data management

- Basic database networking
- Form creation
- Report creation