Module: Database Development 361

Module name:	Database Development 361
Code:	DBD261
NQF level:	6
Type:	Speciality – Diploma in Information Technology (Database)
Contact Time:	90 hours
Structured time:	15 hours
Self-directed time:	45 hours
Notional hours:	160 hours
Credits:	15
Prerequisites:	DBD261

Purpose

This module extends the introductory modules in databases. It aims to put into practice and implement more advanced topics in databases such as physical database design, advanced data managements techniques, the use of data definition languages and data modelling languages in a well-defined data management system as well as stored procedures. Students will be exposed to different database platforms that support the various data models discussed during the course.

Outcomes

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

- Detailed knowledge and 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 DDL and DML statements and their use to create database and database objects using a given database management system.
- Demonstrate the advanced understanding of database configurations and the ability to install and configure database software.
- The ability to describe and utilize a range of techniques for designing data warehouses for real-world applications and be able to make informed decisions to select and evaluate, accepted and current Data warehousing technologies.
- Select and apply standard methods, procedures, or techniques to implement and maintain an efficient database system using emerging trends.

Assessment

- Continuous evaluation of theoretical work through two assignments, two formative tests, and a summative test.
- Continuous evaluation of relationships between concepts, turning problem definitions into a form ready to be implemented in a well-defined database environment and physically implementing the database through a project work.
- Final assessment through a written examination

Teaching and Learning

Learning materials

Prescribed books (EBSCO)

- 🕮 ***Wiese, L. (2015) Advanced Data Management: For SQL, NoSQL, Cloud and Distributed Databases in De Gruyter Textbook. Berlin.***
- 🕮 ***Database Systems: Design, Implementation, and Management***
- 🕮 ***Authors: Peter Rob, Carol Coronel, Keeley Crocket***
- 🕮 ***Taylor, A.G. (2011).* SQL All-In-One for Dummies. *John Wiley & Sons Ltd.(ISBN:9780470929964)***

Learning activities

The teaching approach will use a combination of exercises, theory presentations and whole group discussions. It is a collaborative model with a practical approach, with two mandatory assignments which must be completed during the module.

Notional learning hours

Contact	Distance	Other	Type of learning activities	% Learning
y	y	n	Lectures (face-to-face, limited interaction or technologically mediated)	40%
y	y	n	Tutorials: individual groups	20%
n	y	n	Syndicate groups	10%
n	y	n	Independent self-study of standard texts and references (study guides, books, journal articles)	10%
n	y	n	Independent self-study of specially prepared materials (case studies, multi-media, etc.	20%

Syllabus

- Advanced Database Design
- Implementation of physical database design
- Advanced techniques in data management.
- DDL and DML Statements
- Views based on these statements.
- Stored Procedures.