

Module: Database Development 262

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| Module name: | Database Development 262 |
| Code: | DBD262 |
| NQF level: | 6 |
| Type: | Core – Diploma in Information Technology (all stream) |
| Contact Time: | 96 hours |
| Structured time: | 16 hours |
| Self-directed time: | 48 hours |
| Notional hours: | 160 hours |
| Credits: | 16 |
| Prerequisites: | Database Development 261 |

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 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 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 one mandatory assignment and two projects which must be completed during the module.

Notional learning hours

| Activity | Units | Contact Time | Structured Time | Self-Directed Time |
|--------------------|-------|--------------|-----------------|--------------------|
| Lecture | | 78.0 | | 48.0 |
| Formative feedback | | 12.0 | | |
| Project | 2 | 6.0 | | 15.0 |
| Assignment | 1 | | | 3.0 |
| Test | 4 | | 8.0 | 16.0 |
| Exam | 1 | | 2.0 | 13.0 |
| | | 96.0 | 8.0 | 66.0 |

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.