# Module:  Database Development 251

| Module name: | Database Development 251 |
|---|---|
| Code: | DBD251 |
| NQF level: | 6 |
| Type: | Fundamental – Diploma in Information Technology (Software Development stream) |
| Contact Time: | 48 hours |
| Structured time: | 8 hours |
| Self-directed time: | 54 hours |
| Notional hours: | 110 hours |
| Credits: | 11 |
| Prerequisites: | DBD151 |

## Purpose

The course covers theories of database architecture, and database management systems. DML and DDL statements are covered during the duration of the course. Principles and methodologies of database design, and techniques for database application development are also included in this course. This will enable the student form an understanding of a working relational database.

## Outcomes

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

- Detailed knowledge of the main areas of relational database model system, including an understanding of and the ability to apply the key terms, concepts, principles, rules, and theories thereof to unfamiliar but relevant contexts, and knowledge of database system architecture and how that knowledge relates to other fields.
- The ability to evaluate, select and apply appropriate procedures or techniques in the processes of using data modification language structures.
- The ability to identify, analyse and solve problems in unfamiliar contexts, gathering evidence and applying solutions based on evidence and procedures appropriate to techniques to solve or pose queries required for creating and maintaining programmable database objects.
- The ability to present and communicate complex information reliably and coherently using appropriate professional conventions, formats, and technologies to motivate decisions made on the implementation of database concepts and objects.
- The ability to evaluate the performance of a database system against given criteria, and accurately identify and address the task-specific learning needs.

## Assessment

- Continuous evaluation of theoretical work through written assignments, formative, and a summative test.
- Final assessment through a written examination.

# Teaching and Learning

## Learning materials
Lecturer hand-outs

## Prescribed Book
Database Architecture, (2018), IT without frontiers.

## Additional Material
   📖 Taylor, A.G. (2011). *SQL All-In-One for Dummies.* John Wiley & Sons Ltd.
     (ISBN:9780470929964)

## Learning activities
The teaching method is a combination of the presentation of theoretical concepts, lecturer-led practical activities, and small group work. It is a collaborative model with a practical approach, with two mandatory assignments which must be completed during the module.

## Notional learning hours

| Activity | Units | Contact Time | Structured Time | Self-Directed Time |
|---|---|---|---|---|
| Lecture | | 40.0 | | 24.0 |
| Formative feedback | | 8.0 | | |
| Project | | | | |
| Assignment | 2 | | | 6.0 |
| Test | 3 | | 6.0 | 11.0 |
| Exam | 1 | | 2.0 | 13.0 |
| | | **48.0** | **8.0** | **54.0** |

## Syllabus
- Database Design
- Implementation of physical database design
- Data management
- DDL and DML Statements
- Views based on these statements
- Stored Procedures