Module: Web Database 361

Module name:	Web Database 361
Code:	WDB361
NQF level:	6
Type:	Speciality – Diploma in Information Technology (Web Development)
Contact time:	30 hours
Structured time	4 hours
Self-directed time	26 hours
Notional hours:	60 hours
Credits:	6
Prerequisites:	WPR261, WFS361

Purpose

The purpose of this course is to teach learners how to persist data in a web application using a database, and how to use an object-oriented business model to write effective queries quickly against a database.

The course will cover concepts related to defining a schema, creating models, and performing database-related operations.

Outcomes

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

- Detailed knowledge of creating a database-driven web application; and an understanding of how web applications interact with data that is persisted in a local or cloud repository.
- The ability to use an Object Relational Mapper to interact with a data repository.
- The ability to identify, analyse and solve problems by manipulating and presenting data based on a set of requirements.
- The ability to communicate effectively with a variety of audiences through a range of modes and media, to technical and non-technical audiences via reports or presentations and using appropriate discourse.
- The ability to work as part of a team, and to take responsibility for decisions and actions taken within the team.

Assessment

Assessment is performed using a variety of instruments:

- Evaluation of theoretical work through 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)

- 🕮 ***Mithun Satheesh, Bruno Joseph D'mello and Jason Krol (2015)* Web Development with MongoDB and NodeJS - Second Edition : Build an Interactive and Full-featured Web Application From Scratch Using Node.js and MongoDB*. Birmingham, UK: Packt Publishing (Community Experience Distilled).***

Learning activities

The teaching is a combination between presentation of practical and theoretical concepts, and exercises and discussions. It is practice-oriented, with a mandatory project which must be completed during the course.

Notional learning hours

Activity	Units	Contact Time	Structured Time	Self-Directed Time
Lecture		27.0		9.0
Formative feedback		1.0		
Project	1	2.0		7.0
Test	1		2.0	4.0
Exam	1		2.0	6.0
		30.0	**4.0**	**26.0**

Syllabus

- How web applications interact with a database
- Picking the correct database for your application
- ORMs and ODMs
- Installing MongoDB and Compass
- Configuring and connecting to MongoDB
- Defining and creating models
- Performing CRUD operations
- Primer: MongoDB Atlas (cloud-hosted database)
- Overview of Content Management Systems (CMSs)
- Installing and configuring CMSs.
- Working with themes and plugins
- Using CMSs to manage content
- Administration (Deploying and managing users)