Module: Programming 252

Module name:	Programming 252
Code:	PRG252
NQF level:	6
Type:	Fundamental – Diploma in Information Technology (Software Development stream)
Contact time:	52 hours
Structured time:	8 hours
Self-directed time:	60 hours
Notional hours:	120 hours
Credits:	12
Prerequisites:	PRG251, DBD251

Purpose

In this course the student is expected to integrate all knowledge concerning programming learnt in prerequisite courses and demonstrating the analysis, design, planning, implementation, platforms, database development, and application of good programming principles in development work. Students will also be able to implement the basic concepts and technologies involved in working with files.

Outcomes

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

- Detailed knowledge of ADO.Net and file I/O, including an understanding of and the ability to apply the key terms, concepts, facts, principles, rules and theories within an Object Oriented Programming environment and how these concepts relate to the pre-requisites as well as other areas
- The ability to evaluate, select and apply appropriate methods, procedures or techniques in the investigation of application processes within an ADO.Net software solution.
- The ability to identify and analyse database driven problems found in real-world implementations and situations and providing solutions for this based on evidence and procedure as they pertain to the ADO.Net environment while remaining cognisant of industry standard practices and procedures.
- The ability to make a decision based on data demonstrating and understanding of the relationships between software system and data. Formulating the ideas of how a software system impacts another when working with data.

Assessment

- Continuous evaluation of work through 2 assignments.
- Continuous evaluation of work through formative tests and summative test which assesses the theoretical knowledge.

- Continuous evaluation of one projects whereby the student must evaluate and present results on given problems.
- Final assessment through a written examination.

Teaching and Learning

Learning materials
Lecturer hand-outs and samples
Online prescribed sources

Prescribed Book
Programming: Data Handling – IT Without Frontiers Series.

Additional Material
  Patrick, T. (2010). *ADO.NET 4 Step By Step.* Microsoft Press. [ISBN: 9780735638884]

Learning activities
The teaching and learning activities are a blend of formal instruction and practical implementation of learned concepts. Classroom discussion as well as student intervention is based on observations done during contact time. One mandatory assignment and one project must be completed during the course. As students' progress on these practical components, further avenues for learning are opened and focused on.

Notional learning hours

Activity	Units	Contact Time	Structured Time	Self-Directed Time
Lecture		40.0		24.0
Formative feedback		8.5		
Project	1	3.5		6.0
Assignment	2			6.0
Test	3		6.0	11.0
Exam	1		2.0	13.0
	52		**8.0**	**60.0**

Syllabus

- Advanced File I/O
- Advanced ADO.NET application
  - o   Command builders
  - o   Working with stored procedures
- Version Control with Git