Module: Programming 262

Module name:	Programming 262
Code:	PRG262
NQF level:	6
Type:	Fundamental – Diploma in Information Technology (Software Development stream)
Contact time:	34 hours
Structured time:	6 hours
Self-directed time:	40 hours
Notional hours:	80 hours
Credits:	8
Prerequisites:	PRG261, DBD261

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

Assessment is performed using a variety of instruments:

- Continuous evaluation of theoretical work through written assignment, a formative, 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)

- *Christy, V. (2015)* Programming in C#*. New Delhi, India: Laxmi Publications Pvt Ltd.*
- *Ringler, R. (2014)* C# Multithreaded and Parallel Programming*. Birmingham: Packt Publishing (Professional Expertise Distilled).*
- *Miller, R. (2012)* C# Collections : A Detailed Presentation*. Falls Church, Va: Pulp Free Press.*
- *Santacroce, F. (2015)* Git Essentials*. Birmingham, UK: Packt Publishing (Community Experience Distilled).*
- *Olsson, A. and Voss, R. (2014)* Git Version Control Cookbook*. Birmingham: Packt Publishing.*
- *Pidoux, E. (2014)* Git Best Practices Guide*. [N.p.]: Packt Publishing.*
- *Bill Evjen, Scott Hanselman and Devin Rader (2009)* Professional ASP.NET 3.5 SP1 Edition : In C# and VB*. Indianapolis, Ind: Wrox (Wrox Programmer to Programmer). Learning activities*

Learning activities

Learning will be facilitated by the lecturer with student centred activities that involve problem-based learning where pupils are presented with challenges that replicate the situation in the real-world environment. One mandatory assignment and one project must be completed during the course. This will be achieved through a combination between presentation of theoretical concepts, guided exercises, group work and discussions during the module.

Notional learning hours

Activity	Units	Contact Time	Structured Time	Self-Directed Time
Lecture		27.0		13.0
Formative feedback		3.5		
Project	1	3.5		9.0
Assignment	1			3.0
Test	2		4.0	8.0
Exam	1		2.0	7.0
		34.0	**6.0**	**40.0**

Syllabus

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

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