DEVELOP INFORMATION SYSTEM

ISCED UNIT CODE: 0613 554 11A

UNIT CODE: ICT/OS/CS/CR/06/6/MA

UNIT DESCRIPTION

This unit covers the competencies required to develop an information system. It involves understanding fundamentals of information systems, applying security measures to data, hardware, software in automated environment, understanding the software development process, demonstrating human computer interaction principles, understanding the VB.net programming environment and developing and testing a VB.NET application.

ELEMENT These describe the **key outcomes** which make up **workplace function**.	**PERFORMANCE CRITERIA** These are **assessable** statements which specify the required level of performance for each of the elements. ***(Bold and italicized terms are elaborated in the range.)***
1. Apply fundamentals of Information Systems	1.1 Information system fundamentals are identified 1.2 Information systems type is selected 1.3 Emerging trends in information systems are identified and applied 1.4 Information systems are recommended for different scenarios 1.5 Information system security is implemented 1.6 Mobile security is implemented 1.7 Web security is implemented
2. Apply security measures to data, hardware, software in automated environment	2.1 ***Data security and privacy are*** applied in accordance with the prevailing technology 2.2 ***Security threats*** are identified ***and control measures*** are applied in accordance with laws governing protection of ICT 2.3 Computer threats and crimes are detected in accordance to Information Management security guidelines 2.4 Protection against computer crimes are undertaken in accordance with laws governing protection of ICT
3. Apply the Software Development Process	3.1 Software Development Life Cycle is identified 3.2 ***Software Development Methodologies*** are applied 3.3 ***Modeling techniques*** are applied using CASE tools

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4. Demonstrate Human Computer Interaction Principles	4.1 Human Computer Interaction is applied 4.2 ***Interface design principles*** are applied 4.3 Interface is designed using a design software
5. Configure the VB.NET programming environment	5.1 The .Net framework is installed 5.2 Visual Studio is installed 5.3 Features of VB.Net are configured 5.4 The IDE environment is chosen 5.5 VB.Net program structure is developed 5.6 VB.Net project is created and compiled
6. Develop and test a VB.NET application	6.1 ***Basic VB.Net Controls*** are applied 6.2 ***Elements of a control*** are applied 6.3 Basic VB.Net Controls' Properties, Methods and Events are applied 6.4 Events are handled 6.5 Forms are designed as per HCI principles 6.6 VB.Net applications are connected to a database. 6.7 VB.NET applications are tested and deployed

RANGE

This section provides work conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

Variable	**Range**
13. Types of information systems may include but not limited to:	● Transaction Processing Systems ● Management Information systems ● Decision Support systems ● Executive Information Systems ● Office Automation Systems ● Knowledge based systems ● Expert Systems
14. Data security and privacy may include but not limited to:	● Confidentiality of data ● Cloud computing ● Integrity -but-curious data surfing
15. Security and control measures may include but not limited to:	● Counter measures against cyber terrorism ● Risk reduction ● Cyber threat issues

Variable	Range
	• Risk management • Pass-wording
16. Security threats may include but not limited to:	• Cyber terrorism • Hacking
17. Software development methodologies may include but not limited to:	• Waterfall • Spiral • Rapid Application Development • Agile
18. Modeling techniques may include but not limited to:	• Data Flow Diagrams • ER diagrams • Use Case Diagrams
19. Interface Design Principles may include but not limited to:	• Usability • Learnability • Flexibility
20. Basic VB.Net Controls may include but not limited to:	• Form • Text Box • Label • Button • List Box • Combo Box • Radio Button • Check Box • Picture Box • Progress Bar • Scroll Bar • Date Time Picker • Tree View • List View
21. Elements of a control may include but not limited to:	• Properties • Methods • Events

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency.

Required skills

The individual needs to demonstrate the following skills:

- Communications (verbal and written);
- Time management;
- Problem solving;
- Planning;
- Decision Making;

- Research;

Required knowledge

- The individual needs to demonstrate knowledge of:
- Fundamentals of Information Systems
- Data security and privacy
- Computer security threats and control measures
- Technology underlying cyber-attacks and networks
- Cyber terrorism
- Computer crimes
- Detection and protection of computer crimes
- Laws governing protection of ICT
- Software Development Process
- Human Computer Interaction Principles
- VB.NET programming environment
- Developing and testing a VB.NET application

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and understanding and range.

1.Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Identified types of information systems 1.2 Identified and controlled Security threats are measures are applied in accordance with laws governing protection of ICT 1.3 Applied Software Development Life Cycle 1.4 Applied Software Development Methodologies 1.5 Demonstrated Modelling techniques using CASE tools 1.6 Created a VB.NET project demonstrating event handling, form design and connection to the database
2.Resource Implications	The following resources should be provided: 2.1 Access to relevant workplace where assessment can take place 2.2 Appropriately simulated environment where assessment can take place 2.3 Resources relevant to proposed activity or task
3. Methods of Assessment	Competency may be assessed through: 3.1 Oral questioning

	3.2 Practical tests 3.3 Observation 3.4 Written tests
4. Context of Assessment	Competency may be assessed 4.1 Off the job 4.2 on the job 4.3 During industrial attachment
5. Guidance information for assessment	5.1 Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.