

DEVELOP AN INFORMATION SYSTEM

UNIT CODE: CT/OS/CS/CR/06/6/B

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. <i>(Bold and italicized terms are elaborated in the range.)</i>
1. Understand fundamentals of Information Systems	1.1.Information system is explained 1.2. <i>Types of information systems</i> are outlined 1.3.Emerging trends in information systems are explained 1.4.Information systems are recommended for different scenarios
2. Apply security measures to data, hardware, software in automated environment	2.1 <i>Data security and privacy are classified</i> in accordance with the prevailing technology 2.2 <i>Security threats</i> are identified <i>and control measures</i> 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 is undertaken in accordance with laws governing protection of ICT
3. Understand the Software Development Process	1.1 Software Development Life Cycle is explained 1.2 <i>Software Development Methodologies</i> are explained 1.3 <i>Modeling techniques</i> are demonstrated using CASE tools
4. Demonstrate Human Computer Interaction Principles	1.1 Human Computer Interaction is explained 1.2 <i>Interface design principles</i> are explained 1.3 Interface design is demonstrated using a design software
2. Understand the VB.NET programming environment	4.1. The .Net framework is explained 4.2 Visual Studio is installed 4.3 Features of VB.Net are outlined 4.4 The IDE environment is explained

	4.5 VB.Net program structure is explained 4.6. VB.Net project is created and compiled
3. Develop and test a VB.NET application	4.1 Basic VB.Net Controls are outlined 4.2 Elements of a control are explained 4.3 Basic VB.Net Controls' Properties, Methods and Events are demonstrated 4.4 Event handling is demonstrated 4.5 Forms design using HCI principles is demonstrated 4.6 Connection of VB.Net applications to a database is demonstrated 4.7 Deployment of VB.NET applications is demonstrated

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
Types of information systems may include but not limited to:	<ul style="list-style-type: none"> • Transaction Processing Systems • Management Information systems • Decision Support systems • Executive Information Systems • Office Automation Systems • Knowledge based systems • Expert Systems
Data security and privacy may include but not limited to:	<ul style="list-style-type: none"> • Confidentiality of data • Cloud computing • Integrity -but-curious data surfing
Security and control measures may include but not limited to:	<ul style="list-style-type: none"> • Counter measures against cyber terrorism • Risk reduction • Cyber threat issues • Risk management • Pass-wording
Security threats may include but not limited to:	<ul style="list-style-type: none"> • Cyber terrorism • Hacking
Software development methodologies may include but not limited to:	<ul style="list-style-type: none"> • Waterfall • Spiral • Rapid Application Development

Variable	Range
	<ul style="list-style-type: none"> • Agile
Modeling techniques may include but not limited to:	<ul style="list-style-type: none"> • Data Flow Diagrams • ER diagrams • Use Case Diagrams
Interface Design Principles may include but not limited to:	<ul style="list-style-type: none"> • Usability • Learnability • Flexibility
Basic VB.Net Controls may include but not limited to:	<ul style="list-style-type: none"> • 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
Elements of a control may include but not limited to:	<ul style="list-style-type: none"> • 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	<p>Assessment requires evidence that the candidate:</p> <p>1.1 Outlined <i>Types of information systems</i></p> <p>1.2 Security threats are identified and control measures are applied in accordance with laws governing protection of ICT</p> <p>1.3 Explained Software Development Life Cycle</p> <p>1.4 Described Software Development Methodologies</p> <p>1.5 Demonstrated Modelling techniques using CASE tools</p> <p>1.6 Created a VB.NET project demonstrating event handling, form design and connection to the database</p>
2. Resource Implications	<p>The following resources should be provided:</p> <p>2.1 Access to relevant workplace where assessment can take place</p> <p>2.2 Appropriately simulated environment where assessment can take place</p>
3. Methods of Assessment	<p>Competency may be assessed through:</p> <p>3.1 Oral questioning</p> <p>3.2 Practical tests</p>

	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.