Unit 129: Designing and Developing Windows Applications Using the Microsoft.NET Framework 3.5 (70-563)

Unit code: F/600/4384

QCF Level 3: BTEC in IT

Credit value: 7

Guided learning hours: 35

● Aim and purpose

Candidates for this exam work on a team in a development environment that uses Microsoft Visual Studio. NET 2008 and the Microsoft.NET Framework 3.5 to build desktop applications. Candidates should have a minimum of three years of experience developing applications including one to two years of experience developing Windows-based applications and a thorough understanding of the Windows Forms technologies in the.NET Framework 3.5. Additionally, candidates should be able to demonstrate the following by using the. NET Framework 3.5:

● A solid understanding of the Windows applications event model

● Experience creating Windows applications that access data

● Experience planning and designing user interaction solutions

● Experience in the full cycle of Windows applications

● Unit introduction

This unit is a comprehensive introduction to the principles of applications development using the Microsoft. Net 3.5 framework.

The unit explores program design, data management, the planning of user interaction, application security, application deployment, application architecture and application performance optimisation.

Microsoft link with a range of different partners to offer a range of learning resources, where learners and centres can access these through Microsoft's Academic learning programme. To attain a pass, learners must take the Microsoft 70-563 certification exam.

This unit will prepare learners to sit the Microsoft 70-563 certification exam, this unit is also assessed with BTEC merit and distinction criteria.

To view general information about Microsoft objectives please visit: https://www.microsoft.com/education/MSITAcademy/default.mspx where the detailed scope and sequence for all certifications are available for anyone to download.

Learning outcomes

On completion of this unit a learner should:

1   validate an application design against specifications

2   plan data management

3   plan user interaction and presentation strategy

4   design security implementation

5   plan application deployment and maintenance

6   design the application architecture

7   design the application for optimized performance.

Unit content in relation to the Merit and Distinction Criteria

Specification: eg feasibility, user/customer specification, proof of concept, resource specification, testing requirements, data requirements, interface requirements

Data Management: eg data access strategy, data caching, data persistence, data storage, data sharing, schema evolution, concurrency management

User Interaction: eg presentation, application content flow, data capture, reporting, interface components, data-binding, forms inheritance

Application Deployment: eg installer selection, multiple component deployment, redeployment, application removal, performance monitoring, exception management

Optimised performance: eg data retrieval, state management, resource management

Security: eg role based security, data transmission, data storage, authentication, authorisation, operating system compliance, privilege limitations

Assessment and grading criteria

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria for a pass grade describe the level of achievement required to pass this unit.

Assessment and grading criteria		
To achieve a pass grade the evidence must show that the learner is able to:	To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:	To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:
Pass the Microsoft 70-563 certification exam. The centre will evidence this with a copy of the learners results, the learner MUST PASS at the minimum set by Microsoft.	**M1** design a.net application for a given specification [IE, CT]	**D1** critically Test and troubleshoot the.net application [IE, CT, SM]
	M2 plan application deployment, data management and user interaction [IE, SM]	**D2** evaluate the optimized performance and security of the.net application. [SM, IE]
	M3 implement an application using.net. [TW, EP, SM]	

PLTS: This summary references where applicable, in the square brackets, the elements of the personal, learning and thinking skills applicable in the pass criteria. It identifies opportunities for learners to demonstrate effective application of the referenced elements of the skills.

Key	IE – independent enquirers	RL – reflective learners	SM – self-managers
	CT – creative thinkers	TW – team workers	EP – effective participators

Essential guidance for tutors

Delivery

Microsoft courses and associated certifications are delivered as part of an academic programme available to centres in UK and Eire. Centres may only access this certification's associated discounts from within this programme are advised to seek guidance on what current courses comprise the study/delivery required for learners to access the certification.

If learners are taking Microsoft study as part of their BTEC programme, it is recommended that both programmes of study are integrated. Practical and theory tasks for the Microsoft programme can be integrated into the study required for the merit and distinction criteria within this unit.

The outcomes of this unit are synergic with the other Microsoft units as well as those offered by Oracle where there are considerable differences. This unit may be delivered in parallel or in sequence. Units in database design, programming games and web development, that are both BTEC specific as well as from other vendors may be taught in conjunction with the Microsoft units to enhance the learners experience.

Outline learning plan

Microsoft as part of the their academy programme, provide learning plans and study guidance for their courses. Microsoft suggest an estimated 75 hours of delivery to attain the pass criteria, in line with QCF credit and notional learning hours. The notional hours for managed learning is set at 40 for learners to attempt the merit and distinction.

Assessment

To achieve a pass grade, learners must pass the Microsoft 70-563 examination.

Programme of suggested assignments

The table below shows a programme of suggested assignments that cover the merit and distinction criteria in the assessment and grading grid. This is for guidance and it is recommended that centres either write their own assignments or adapt any Edexcel assignments to meet local needs and resources.

Criteria covered	Assignment title	Scenario	Assessment method
M1, M2	Application Design	Learners will plan and design the development of a.net application.	Report/Presentation.
M3, D1, D2	Application implementation	Learners will implement, rest and evaluate the performance of a.net application.	Observation/Practical/ Report/Presentation.

Links to National Occupational Standards, other BTEC units, other BTEC qualifications and other relevant units and qualifications

To be completed, links to 6.1 of the NOS and may be co-presented with all other Microsoft modules

Essential resources

As members of the Microsoft academic programme, centres may choose to access a range of teaching and assessment practice resources. The technological requirement for this unit does not demand any more than the 'average' centre is already providing for a computer systems session, old computers, spare components, replacement parts will enhance the learning experience. Many installation versions of Microsoft products exist, that are easy to install in both desktop and server versions and now comparable in support and management terms to other popular operating systems. As.net demands administrative privileges for developers, which is likely to cuase local 'system security issues'. This unit can be delivered using virtual machines, where Microsoft Virtual PC may be used, or Oracle Virtual Box which can be run on a wide range of platforms.

Employer engagement and vocational contexts

Microsoft certification is internationally recognized by a diverse range of employers (from SME's to large corporations) as one of the principal certifications in systems support and maintenance.

Indicative reading for learners

For access to the Microsoft academic programme resources and more information on joining the programme, please visit https://www.microsoft.com/education/MSITAcademy/default.mspx

Delivery of personal, learning and thinking skills

The table below identifies the opportunities for personal, learning and thinking skills (PLTS) that have been included within the pass assessment criteria of this unit.

Skill	When learners are …
Independent enquirers	The pass criteria is set by an examination, the PLTS of self management and reflective learning is supported by the learner, taking personal study and revision in advance of the Examination.
Creative thinkers	
Reflective learners	
Team workers	
Self-managers	
Effective participators	

Although PLTS are identified within this unit as an inherent part of the assessment criteria, there are further opportunities to develop a range of PLTS through various approaches to teaching and learning.

Skill	When learners are …
Independent enquirers	designing and planning the.net application
Creative thinkers	designing and planning the.net application
Reflective learners	designing and planning the.net application
Self-managers	implementing and testing the.net application.

Functional Skills – Level 2

Skill	When learners are …
ICT – Use ICT systems	
Select, interact with and use ICT systems independently for a complex task to meet a variety of needs	Developing, testing and implementing the application
Use ICT to effectively plan work and evaluate the effectiveness of the ICT system they have used	Designing, Developing, testing and implementing the application
Manage information storage to enable efficient retrieval	Developing, testing and implementing the application
Follow and understand the need for safety and security practices	Developing, testing and implementing the application
Troubleshoot	Developing, testing and implementing the application
Mathematics	
Understand routine and non-routine problems in a wide range of familiar and unfamiliar contexts and situations	Developing and design locally specific applications
English	
Speaking and listening – make a range of contributions to discussions and make effective presentations in a wide range of contexts	Presenting findings from testing and performance/security evaluation
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	Presenting findings from testing and performance/security evaluation.