Unit 43: Multimedia Design

Unit code: T/601/0439

QCF Level 3: BTEC National

Credit value: 10

Guided learning hours: 60

● Aim and purpose

The aim of this unit is to enable learners to understand how multimedia is used in business and to be able to create multimedia products to meet business needs.

● Unit introduction

The interactive multimedia industry is one of the fastest moving sectors in the world. Those hoping to make a career in this sector will need to be able to produce high quality products which requires creativity, a firm grasp of interactive media design principles and good planning skills. The qualities and skills developed in this unit are applicable to all of the various strands within the interactive media sector.

Learners will develop their understanding of the terminology, nature and scope of the interactive media industry and should be encouraged to investigate a range of existing interactive media products. They will learn how to design professional products by developing core skills (such as how to plan for the use of interactive features, transitions and effects) and applying established principles. They will also have the opportunity to develop and apply creative thinking skills. Learners learn how to plan and manage projects. To ensure that final products are both legal and ethical they will also learn about important issues such as copyright and ownership.

The unit involves the use of authoring software and the creative integration of audio and visual material to produce a final product. It is essential that the product is focused on the business needs of the user. Screen design and layout are important but the final functioning interactive media product created for this unit must meet the business objectives and be easy to use and understand.

Learners will develop an understanding of multimedia products through investigations and experimentation. Competent learners should demonstrate that they are able to select and use a wide range of multimedia software tools and techniques.

● Learning outcomes

On completion of this unit a learner should:

1   Understand how multimedia is used to meet business objectives

2   Be able to design multimedia products to meet business needs

3   Be able to develop multimedia products

4   Be able to present multimedia products

5   Be able to review multimedia products.

Unit content

1 Understand how multimedia is used to meet business objectives

Multimedia: types eg sound, animation, still and moving images

Business requirements: target audience; purpose; platform

Business objectives: promotion and advertising eg web pages, digital posters, virtual tours; education and training eg simulations, e-learning packages; entertainment and leisure eg computer games, virtual reality

Audience: profiles eg age, gender, culture, race, class, business, interests, IT literacy

2 Be able to design multimedia products to meet business needs

Multimedia products: interactive eg information points, digital stories, virtual tours; limited interactivity eg digital posters, adverts, quizzes, movies

Design: features eg content, navigation, mix of digital components, interactivity

Specification: input methods eg keyboard, mouse, voice recognition, touch screen, stylus, digital video or still camera, microphone; number of pages; features; audience

Content: types eg text, images, graphics, video, sound, animation; interactive features eg transitions, menus, submenus, buttons, links, pop-ups, video clips, sound clips; legal requirements: acknowledgment of sources; avoiding plagiarism; permissions; copyright law eg on music downloads, use of images

Design documentation: presentation methods eg storyboards, scripts, flow charts, annotations, visuals, timelines; layout eg size, frames, orientation, consistency

3 Be able to develop multimedia products

Combine information: tools eg insert, size, position, wrap, order, group

Edit multimedia products: layout eg size, crop, position, proportion, guides, styles, templates, font, size, orientation, colour, alignment

File formats: types eg jpg, png, svg, mp3, mpg

Test: review for eg functionality, usability, accessibility, performance, ccompleteness, accuracy; review against requirements

Quality problems: sound eg noise, volume; images eg levels, contrast, unwanted content; text eg clarity, spelling, grammar, structure

4   Be able to present multimedia products

Display: devices eg PC, laptop, mobile device, TV

Display multimedia outcomes: setup eg quarter screen, full screen, thumbnail, screen resolution, data bandwidth, transmission speeds, output media; constraints eg speed of delivery, size of files, end user hardware and software configuration

Navigation techniques: click; scroll; menus; submenus

Playback: controls eg start, stop, fast forward, rewind, pause

Settings: visual eg brightness, contrast, screen resolution, colour balance, monochrome; sound eg volume, treble, bass, balance; animation eg speed

5   Be able to review multimedia products

Gather feedback: methods eg interview, observation, questionnaire; outcomes eg identify errors, suggest further enhancements, comment on performance

Test users: representatives of the target audience

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:
P1 explain how multimedia is used to meet business objectives [CT1]		
P2 design a multimedia product for a specified business need [RL3]	**M1** demonstrate initiative and imagination in meeting user requirements [IE2]	
P3 identify how the elements of the content will be sourced		
P4 develop a functional multimedia product [SM3] for a specified business need	**M2** demonstrate advanced skills in producing a complex product [CT2]	**D1** produce a complex, high quality, fit for purpose multimedia product
P5 set up software and display devices appropriately to display multimedia outcomes		
P6 review a multimedia product using user feedback.	**M3** adapt a product in line with user feedback. [CT6]	**D2** reflect on feedback, suggesting future developments. [RL5] [SM6]

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

Centres are encouraged to make use of guest speakers from the interactive multimedia industry and arrange visits to local businesses where possible. To keep up to date with developments in the industry it would be useful for learners to attend local trade shows and events organised locally by sector organisations. Subscriptions should be made to some of the many good publications available for each of the sectors both in print and online. The Skillset website (www.skillset.org) is a good source of information, news and statistics with a section dedicated to interactive multimedia.

This unit is intended to develop an understanding of how multimedia products are used to meet business objectives, and a good starting point is to look at the range of practical applications of interactive multimedia authoring such as entertainment, education and training; and the formats and platforms to which they are published (eg PC, MAC, kiosks, handheld devices, CD/DVD ROM, web server). Learners should be aware of the work of professional publishers within interactive multimedia and develop knowledge of the skills and techniques associated with appropriate authoring software. This will also help learners to develop a structured critical approach to interactive media production, and provides them with some idea of the sort of skills they themselves will need to develop.

When delivering the theory aspect of the unit ie, legal requirements, formal lectures and independent study should be the main methods for teaching. Advantage should be taken of the websites of the regulatory and professional bodies and learners should be encouraged to debate ethical issues in class and develop personal views. Professional magazines and trade journals will allow a study of topics currently debated within the industry.

Learners should apply the standards and design principles applicable to interactive multimedia products. Learners should be able to understand the functions and limitations of a range of authoring applications, eg interactive multimedia authoring, sound, image and video editing applications.

This unit could be covered later in the programme so that learners may already have developed skills such as sound and video production and will be capable of producing complex and professional looking products. An alternative approach would be to cover the unit at the start of the programme to give a good introduction to each of the interactive multimedia elements that may be taught later. In that case it may be necessary to provide assets (such as sound and video) or to use existing asset libraries to support the learning of the unit.

It is suggested that teaching follows the logical pattern presented in the learning outcomes, with study of principles covered first, followed by development of a learner's own interactive multimedia product ideas, which can be implemented using authoring software and finally published to match a client brief. The concepts of interactive multimedia authoring could be delivered through a mix of lectures, demonstrations, discussions and investigations of existing products. Knowledge could then be applied through a variety of activities and short practical exercises. Learners should have ample opportunities to experiment with, and use, industry standard software.

Since this unit encourages learners to express imaginative skills, it is appropriate that some critical self-reflective practice is undertaken. This professional skill will encourage a habit of lifelong value in any possible future career. Tutors will need to provide plenty of time for learners to plan and develop graphic specifications, as they will be key to the success of the multimedia project.

Outline learning plan

The outline learning plan has been included in this unit as guidance and can be used in conjunction with the programme of suggested assignments.

The outline learning plan demonstrates one way in planning the delivery and assessment of this unit.

Topic and suggested assignments/activities and/assessment
Introduction to unit content: • understanding the industry – technology/process/content • business objectives • audiences. Mixture of tutor-led sessions, research and directed learning.
Assignment 1: Why Multimedia?
Using the software – tools and techniques: • combining, editing, manipulating, file formats. Mixture of demonstration, exercises, directed learning over a number of sessions.
Understanding the project specification: • concept: audience/purpose/content • practical considerations: schedule/resources • technical factors: schedule/distribution • roles and responsibilities. Mixture of tutor-led sessions, research, discussion and directed learning.
Planning a multimedia project: • stages of design • design tools • design documentation • legal requirements. Mixture of tutor-led sessions, research, exercises and directed learning.
Assignment 2: My Design is …
Testing and reviewing: • functional testing • gathering and using feedback. Exercises, peer group reviews.
Presenting: • display devices, controls, settings.
Assignment 3: All Singing, all Dancing
Assignment 4: Does it Work?

Assessment

The suggested assessment of this unit is through the four assignments summarised in the *Programme of suggested assignments* (PSA) table. A specific scenario has been suggested here but any topic providing sufficient scope to cover the assessment criteria may be used to suit particular learners. The tutor could either produce a standard specification for all learners or agree specifications with individual learners that provide sufficient scope to cover all elements of interactive multimedia authoring.

A possible scenario for these assignments could be based on a new enterprise with a retail section considering broadening and improving their current market position. Although they have an informational website, they have not yet developed a facility for mail order or for potential customers to contact them electronically.

For P1, learners must explain how multimedia is used to meet business requirements. This could be evidenced by a presentation with the explanations of the media backed up with examples of different uses in business contexts. Reference should be made to how the media meet the business objectives and are fit for purpose in terms of meeting the needs of the intended audience. A good range of different audience types should be included.

A range of design documentation should be produced as evidence for P2. The documentation should start with an introduction outlining the original business requirement. The design should demonstrate an understanding of the types of content that are possible and when they are appropriate.

For P3, when identifying sources reference should be made to legal requirements.

For M1, there should be a sense of thoughtfulness in the learner's work. For example, the storyboards that outline the navigation and content will denote why they have chosen to use particular images, fonts, music etc to engage with their chosen audience and will demonstrate that experimentation and multiple solutions had been produced when considering the organisation and layout of information to be included within their projects. Learners will have shown initiative in determining requirements and trying different approaches and demonstrated imagination in their layouts etc. Although subjective to assess, there should be evidence that learners have gone beyond using standard design elements.

For P4 learners should produce and set up a functional, easy-to-use multimedia product that is fit for purpose. Learners are expected to be able to use a wide range of tools and techniques as appropriate to the software being used.

P5 requires the product to be set up on different platforms to demonstrate understanding of how this is done. Evidence can be by witness statements, screenshots, printouts etc.

For M2, advanced skills should be demonstrated, appropriate to the software being used, in creating a complex product.

For D1, learners will produce an interactive media product to an agreed specification of technical quality that reflects near-professional standards. They will evidence acquisition of imaginative assets from a variety of conventional and other sources, the assets being well tailored to meet the planned needs of the product. The product will implement the concepts, principles and standards of interactive media authoring with flair. A full range of authoring tools will be used during the production.

Much of the work for Assignment 4 will be undertaken as part of the development in Assignment 3. It has been separated here simply to reduce the amount of work being submitted at one time. Tutors may split the workload in any way they feel appropriate.

Reviewing for P6 should include feedback from users. Learners should review the responses, determine any changes that could be made and, for M3, adapt their product accordingly. Evidence for M3 should include retesting.

For D2, the final product will have been fully tested and reviewed in the light of user feedback, with all errors detected and either corrected or identified as an area for future development.

Programme of suggested assignments

The table below shows a programme of suggested assignments that cover the pass, 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 Pearson assignments to meet local needs and resources.

Criteria covered	Assignment title	Scenario	Assessment method
P1	Why Multimedia?	You are to give a presentation to a new business explaining how the business could make use of multimedia.	Presentation Handouts
P2, P3, M1	My Design is …	The business has asked you to design an interactive website to develop their mail order facility.	Design documentation Presentation Report on legal issues
P4, P5, M2, D1	All Singing, all Dancing	The design has been approved – now create the site.	Screenshots Annotated printouts etc Witness statement Observation records
P6, M3, D2	Does it Work?	Fully test, review and adapt your multimedia product.	Test documentation User reviews Evaluation

Links to other BTEC units

The learning outcomes associated with this unit are closely linked with:

- *Unit 22: Developing Computer Games*
- *Unit 28: Website Production Management*
- *Unit 30: Digital Graphics and Computers.*

Essential resources

Learners will need access to computer hardware with appropriate accessories such as scanners and printers, and to appropriate software such as Director, Flash, Dreamweaver, Fireworks, Adobe PhotoShop/ Image Ready etc.

Employer engagement and vocational contexts

Within this unit there are opportunities for tutors to support learners with their understanding of the range of hardware and software currently used as industrial standard. Many of these applications and hardware are now accessible to learners. Providing learners with access to relevant software manufacturers' manuals and other textbooks, the internet, and a range of examples of current multimedia practice should be encouraged.

This unit gives learners the opportunity to gain knowledge of the styles and conventions of vocational areas such as graphic design, photography, post-production and production management.

Learners will have the opportunity to gain a fundamental knowledge of the creative technical and production practices such as understanding target audiences, copyright law, content production, graphic design, photography, typography, videography and moving image. This unit also presents opportunities for learners to understand wider vocational skills such as communication and planning and organisational skills.

Learners should be encouraged to learn and understand the importance of these principles in context with the work of professional practitioners across the creative arts vocational areas. This unit provides scope for learners to be engaged in 'real life' project briefs.

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 …
Creative thinkers	exploring of ideas and outcomes for multimedia products
Reflective learners	reviewing and reflecting on their multimedia products and acting on the outcomes to modify and improve their work
Self-managers	organising time and resources and prioritising actions when planning to produce a multimedia product, whether working on their own or in a group.

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	planning and carrying out research into multimedia products to develop their understanding of their purpose carrying out research to develop ideas for their own multimedia product
Creative thinkers	experimenting with alternative ways of constructing their multimedia products, following ideas through to complete a multimedia product adapting their ideas as circumstances change
Reflective learners	setting goals with success criteria for their production work inviting feedback on their own work and dealing positively with praise, setbacks and criticism evaluating their experiences and learning to inform future progress
Team workers	if working in a group to produce a multimedia product, taking responsibility for their own role managing discussions to reach agreements and achieve results
Self-managers	seeking out challenges or new responsibilities and showing flexibility when priorities change dealing with competing pressures, including personal and work-related demands.

Functional Skills – Level 2

Skill	When learners are …
ICT – Using ICT	
Select, interact with and use ICT systems safely and securely for a complex task in non-routine and unfamiliar contexts	researching multimedia products
Manage information storage to enable efficient retrieval	planning for the production of a multimedia product
ICT – Finding and selecting information	
Use appropriate search techniques to locate and select relevant information	exploring, extracting and assessing the relevance of information from multimedia products
Select information from a variety of sources to meet requirements of a complex task	creating and finding content and information that is fit for purpose and targets the multimedia products specified audience
ICT – Developing, presenting and communicating information	
Enter, develop and refine information using appropriate software to meet requirements of a complex task	building a multimedia product, bringing together a variety of materials and mediums gathered through research
Mathematics – Representing	
Understand routine and non-routine problems in familiar and unfamiliar contexts and situations	using estimation and calculation to deduce the desired length of play time for the multimedia product/pages
	using estimation and calculation to work out timings for editing content
	scheduling a production plan
English – Reading	
Read and understand a range of straightforward texts	reading commentaries on individual multimedia products
	reading regulators' reports on multimedia products that have been the subject of copyright complaints
English – Writing	
Write a range of texts, including extended written documents, communicating information, ideas and opinions, effectively and persuasively	writing copy for multimedia products.