OCR
Oxford Cambridge and RSA

Cambridge **TECHNICALS LEVEL 3**

DIGITAL MEDIA

Unit 12

Game development

Cambridge **TECHNICALS 2016**

F/507/6398

Guided learning hours: 60

Version 2 September 2016

LEVEL 3

UNIT 12: Game development

F/507/6398

Guided learning hours: 60

Essential resources required for this unit: Game development software

This unit is internally assessed and externally moderated by OCR.

UNIT AIM

Games are constantly evolving from the simple early games like Pong to massive multiplayer role-playing games the market has changed significantly over time. Now, with different gaming platforms and the development of games as Apps on mobile devices, the gaming industry is growing in size and revenue.

It takes a few years of experience in a quality assurance test team, or working in project management, before a person would have the skills and knowledge to develop a full game. By completing this unit, you will gain practical skills in games development by planning and producing a functional level of a new computer game, including the creation of elements.

TEACHING CONTENT

The teaching content in every unit states what has to be taught to ensure that learners are able to access the highest grades.

Anything which follows an i.e. details what must be taught as part of that area of content Anything which follows an e.g. is illustrative, it should be noted that where e.g. is used, learners must know and be able to apply relevant examples in their work, although these do not need to be the same ones specified in the unit content.

For internally assessed units, you need to ensure that any assignments you create, or any modifications you make to an assignment, do not expect the learner to do more than they have been taught, but must enable them to access the full range of grades as described in the grading criteria.

Learning outcomes The Learner will:	Teaching content Learners must be taught:
1. Be able to develop a concept for a new digital game	1.1 to develop a new digital game concept 1.2 digital game principles for example, i.e. • platform • game genre • purpose and audience (e.g. education, entertainment, promotional tie-in to TV or film, adults, teens, young) • player characters and non-player characters • terrain and environment • first/third person • achievements and progression • competition (e.g. high score, multiplayer) • player immersions • expansion packs, downloadable content (DLC) • linear versus nonlinear game play • dynamic difficulty adjustment (DDA) or dynamic game balancing (DGB) (e.g. behaviour rules (dynamic scripting), genetic algorithms) 1.3 game development software features and capabilities (e.g. dynamic lighting, audio and audio effects, loading optimisation, bit rates, design, effects, music) 1.4 platform restrictions (e.g. screen size and resolution, processor, 2D/3D, interface, delivery medium).

Learning outcomes	Teaching content
The Learner will:	**Learners must be taught:**

2. Be able to plan a level for a new digital game	2.1 planning tools, e.g.
	 • requirement specification
	 • game design flowchart
	 • storyboarding, spider diagram, mood boards, rough sketches
	 • design specification
	
	 2.2 plan a new level for a new digital game, i.e.
	 • game mechanics, i.e.
	     o rules for gameplay
	     o brief details of each game level i.e.
	        ▪ name
	        ▪ images
	        ▪ sounds
	        ▪ music
	        ▪ objects
	        ▪ characters
	        ▪ script
	        ▪ interconnectedness of levels
	 • users' interaction with the game
	 • needs of audience/consumer, demographics, lifestyle
	 • platform considerations (e.g. mobile device, hand held device, games console, user interfaces (e.g. joystick, stylus, touch screen))
	 • illustrations of the environment, backgrounds, models
	 • pencil/colour drawings of characters, 3D models, characteristics, i.e.
	     o special powers
	     o personality
	 • to include details of which sound effects and/or voice artists are required including time, and scene to be recorded
	 • animated, live action, pre-rendered computer graphics streamed from a video file
	 • programming language (e.g. Java, C, C++)
	 • static prop, i.e.
	     o non-moving or physics prop
	     o moving prop, i.e.
	        ▪ moves when hit by another object or dynamic prop, i.e.
	           - user moves the prop/models
	           - textures
	           - audio
	           - 3D models

Learning outcomes	Teaching content
The Learner will:	**Learners must be taught:**

3. Be able to create a level for a new digital game	3.1 how to create identified components for a level of a new digital game, i.e.
	• drawn, wire frame constructed, image, 2D/3D graphic design
	• background/environment models, drawings, illustrations, 2D/3D graphic design
	• static prop, i.e.
	    o non-moving or physics prop
	    o moving prop, i.e.
	        ▪ moves when hit by another object or dynamic prop
	
	3.2 how to produce a functional level of a digital game, i.e.
	• build and implement
	• direct voice over cast to realise your visualisation of the game level, select sound effects, music
	
	3.3 dynamic game elements (e.g. behaviour rules (dynamic scripting), genetic algorithms)
	
	3.4 further developments (e.g. downloadable content, expansion packs, second game instalment. Mods and Maps)

4. Be able to test a level for a new digital game	4.1 to test the finished game level, i.e. • test plans • user acceptance testing • functionality testing • tune and debug (e.g. black and white box testing, soak testing, load testing, regression testing)

GRADING CRITERIA

LO	Pass	Merit	Distinction
	The assessment criteria are the Pass requirements for this unit.	To achieve a Merit the evidence must show that, in addition to the Pass criteria, the candidate is able to:	To achieve a Distinction the evidence must show that, in addition to the pass and merit criteria, the candidate is able to:
1. Be able to develop a concept for a new digital game	P1: Describe the features and capabilities of game development software as a basis for creating a digital game		
	P2: Identify the platform restrictions for game development		
2. Be able to plan a level for a new digital game	P3*: Produce game design documentation for a new digital game concept *(*Synoptic assessment from Unit 2 Pre-production and planning)*	M1: Explain how game concepts will be integrated into the new game	
3. Be able to create a level for a new digital game	P4: Create components for the digital game level		D1*: Evaluate how the game play engages the target audiences *(*Synoptic assessment from Unit 1 Media products and audiences)*
	P5: Create environment structure for the digital game level		
	P6: Develop the game level environment using the created components	M2: Combine game components with effects to enhance game play	D2: Analyse the opportunities for further development of the original game concept
4. Be able to test a level for a new digital game	P7: Test the digital game play in line with the intended plan		

*SYNOPTIC ASSESSMENT

When learners are taking an assessment task, or series of tasks, for this unit they will have opportunities to draw on relevant, appropriate knowledge, understanding and skills that they will have developed through other units. We've identified those opportunities in the grading criteria (shown with an asterisk). Learners should be encouraged to consider for themselves which skills/knowledge/understanding are most relevant to apply where we have placed an asterisk.

ASSESSMENT GUIDANCE

LO1 Be able to develop a concept for a new digital game

P1: Learner must describe the features and capabilities of game development software to enable them to create their game. They must review at least two different types of game development software. This could be evidenced as a formal written or videoed report.

P2: Learners must give consideration to the platform that their game may run on. They must list at least two different platforms and the considerations and restrictions that they would need to take into account if they were designing a level for this platform. This could be evidenced as a formal written report, a presentation with detailed speaker notes or a videoed presentation.

LO2 Be able to plan a level for a new digital game

P3: Learners should, where possible, use industry-standard formats in design documentation when planning the game level. Learners are required to create game design documentation to plan their concept, taking into account areas outlined in the teaching content. This could be evidenced using flow chart, storyboards, sketches, or a formal written report.

M1: Learners must explain how game design concepts will be integrated into the new game. This could be evidenced as an extension of the evidence for P3.

LO3 Be able to create a level for a new digital game

P4: Learners must create components for their digital game level using the areas highlighted in the teaching content. This could be evidenced using a formal report with screen captures to illustrate the process or a screen recording with audio commentary of the creation process.

P5: Learners must create the environmental structure for their digital game level. This could be evidenced using a formal report with screen captures to illustrate the process or a screen recording with audio commentary of the creation process.

P6: Learners must build the game level using the created components from P4 and P5. This could be evidenced using a formal report with screen captures to illustrate the process or a screen recording with audio commentary of the creation process.

M2: Learners must add soundtrack and effects to enhance their game level. This must be appropriate to the identified audience and genre of the game level. This could be evidenced using a formal report with screen captures to illustrate the process or a video showing the game, soundtrack and effects.

D1: Learners must evaluate how the game play engages the target audience. This can be evidenced in the form of a formal report including feedback from the target audience.

D2: Learners must analyse the opportunities for further development of the original game concept. This could be evidenced through a formal written report or presentation including detailed speaker notes.

LO4 Be able to test a level for a new digital game

P7: Learners must test their game play in line with the intended plan, fine tune it and debug any issues. They may test using the methodologies outlined in the teaching content and use this as evidence of their testing process.

Feedback to learners: you can discuss work-in-progress towards summative assessment with learners to make sure it's being done in a planned and timely manner. It also provides an opportunity for you to check the authenticity of the work. You must intervene if you feel there's a health and safety risk.

Learners should use their own words when producing evidence of their knowledge and understanding. When learners use their own words it reduces the possibility of learners' work being identified as plagiarised. If a learner does use someone else's words and ideas in their work, they must acknowledge it, and this is done through referencing. Just quoting and referencing someone else's work will not show that the learner knows or understands it. It has to be clear in the work how the learner is using the material they have referenced **to inform their** thoughts, ideas or conclusions.

For more information about internal assessment, including feedback, authentication and plagiarism, see the centre handbook. Information about how to reference is in the OCR *Guide to Referencing* available on our website: http://www.ocr.org.uk/i-want-to/skills-guides/.

MEANINGFUL EMPLOYER INVOLVEMENT - a requirement for the Foundation Diploma, Diploma and Extended Diploma (Tech Level) qualifications

The 'Diploma' qualifications have been designed to be recognised as Tech Levels in performance tables in England. It is a requirement of these qualifications for centres to secure for every learner employer involvement through delivery and/or assessment of these qualifications.

The minimum amount of employer involvement must relate to at least one or more of the elements of the mandatory content. This unit is a pathway optional unit in the Digital Content for Interactive Media specialist pathway.

Eligible activities and suggestions/ideas that may help you in securing meaningful employer involvement for this unit are given in the table below.

Please refer to the *Qualification Handbook* for further information including a list of activities that are not considered to meet this requirement.

Meaningful employer involvement	Suggestion/ideas for centres when delivering this unit
1. Learners undertake structured work-experience or work-placements that develop skills and knowledge relevant to the qualification.	Learners could work as a tester for a computer games company in order to gain experience of this element of the unit.
2. Learners undertake project(s), exercises(s) and/or assessments/examination(s) set with input from industry practitioner(s).	A game concept brief or competition could be developed in collaboration with local software houses, to develop a first level of a new game.
3. Learners take one or more units delivered or co-delivered by an industry practitioner(s). This could take the form of master classes or guest lectures.	A guest speaker from a local relevant company could present their experiences and give guidance to learners on developing their own level of a digital game.
4. Industry practitioners operating as 'expert witnesses' that contribute to the assessment of a learner's work or practice, operating within a specified assessment framework. This may be a specific project(s), exercise(s) or examination(s), or all assessments for a qualification.	Industry practitioners could be invited in to review prototype games developed by learners and provide feedback or answer a question and answer session on their findings.

To find out more
ocr.org.uk/digitalmedia
or call our Customer Contact Centre on **02476 851509**

Alternatively, you can email us on **vocational.qualifications@ocr.org.uk**

A DIVISION OF
CAMBRIDGE ASSESSMENT

OCR
Oxford Cambridge and RSA