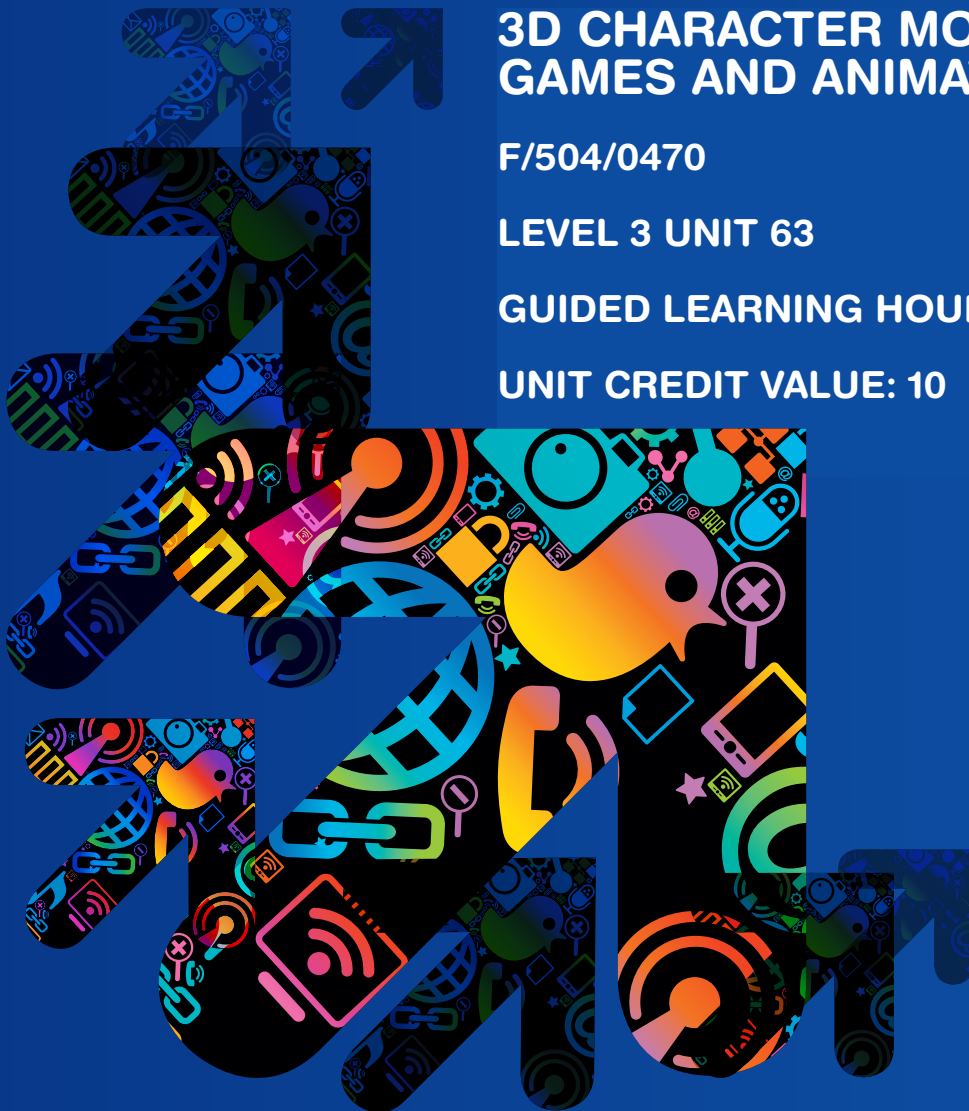




Accredited

OCR LEVEL 3 CAMBRIDGE TECHNICAL CERTIFICATE/DIPLOMA IN MEDIA



3D CHARACTER MODELLING FOR GAMES AND ANIMATION

F/504/0470

LEVEL 3 UNIT 63

GUIDED LEARNING HOURS: 60

UNIT CREDIT VALUE: 10

3D CHARACTER MODELLING FOR GAMES AND ANIMATION

F/504/0470

LEVEL 3

AIM OF THE UNIT

By completing this unit learners will understand 3D modelling techniques for computer generated characters. They will gain skills in the design, planning and production of an animated 3D character, and demonstrate their knowledge of the process by creating a *how to guide*.

ASSESSMENT AND GRADING CRITERIA

Learning Outcome (LO) The learner will:	Pass The assessment criteria are the pass requirements for this unit. The learner can:	Merit To achieve a merit the evidence must show that, in addition to the pass criteria, the learner is able to:	Distinction To achieve a distinction the evidence must show that, in addition to the pass and merit criteria, the learner is able to:
1 Understand 3D character modelling techniques used in media products	P1 Learners research a range of 3D character modelling techniques using examples from existing media products, including: a) modelling process b) animation/motion generation c) application		
2 Be able to plan a 3D modelled character for use in a game or animation	P2 Learners plan for a 3D modelled character for use in a game or animation, including: a) genre b) character profile c) series of character visuals d) target audience	M1 Learners produce visuals that are generally of a good standard. They provide a detailed storyboard showing the character's movement and their interaction with their environment	
3 Be able to construct an animated 3D modelled character for use in a game or animation	P3 Learners construct a competent 3D character for use in a game or animation, including: a) character modelling b) texturing/materials c) rendering	M2 The character modelling, texturing/materials and rendering by learners are generally of a good technical standard. Learners construct props to be used by the character	D1 The 3D character, props, modelling, texturing/materials and rendering by learners are generally of a high technical standard
	P4 Learners produce a final competent animated 3D character for use in a game or animation	M3 Learners animation of the final 3D modelled character is generally of a good technical standard, and expresses the character's attributes/traits planned for in the character profile	D2 Learners animation of the final 3D modelled character is generally of a high technical standard. The character fully interacts with their constructed props
4 Be able to produce a <i>how to guide</i> to illustrate the process of creating a 3D modelled character	P5 Learners produce a how to guide to illustrate the process of how they constructed and animated their 3D modelled character, using their own informative text and images	M4 The how to guide is well constructed by learners and has well-written, easy to follow step-by-step instructions with relevant and clear accompanying images. The guide is both technically correct and aesthetically engaging	

TEACHING CONTENT

The unit content describes what has to be taught to ensure that learners are able to access the highest grade.

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 to their work though these do not need to be the same ones specified in the unit content.

Understand 3D character modelling techniques used in media products

For example:

- polygon modelling, NURBS modelling, sub divisional modelling, spline modelling, extruding 3D shapes, the form/shape of the 3D object/character and placement in the 3D environments
- how the objects/characters move within the 3D environment, use of lights, cameras, properties of surfaces and textures, rendering
- computer/console games, animations, live action animation.

Be able to plan a 3D modelled character for use in a game or animation

For example:

- comedy, horror, super hero, children's animation
- physical and/or emotional attributes, description of the character, special characteristics, gender, age, clothing, props
- sequence of industry standard images, storyboard depicting the character movement, interaction with their surroundings
- audience appeal, lifestyle, age, gender.

Be able to construct an animated 3D modelled character for use in a game or animation

For example:

- polygon to mesh, NURBS modelling, sub divisional modelling, spline modelling, extruding
- mapping texture onto the 3D model, skinning splines
- low, medium and high resolution.

For example:

- adjust intensity of lights, camera angles, shadows, focal length, aperture
- key frame elements of each scene, camera, lights and character movement, expressions, the character interaction with their props, final render to appropriate format.

Be able to produce a *how to guide* to illustrate the process of creating a 3D modelled character

- Using the evidence you have generated during your research and character creation in this unit, create a how to guide that illustrates the process of creating and animating a 3D modelled character. This might include:
 - photos
 - stills of 3D character, examples from character developments, initial sketches
 - screen grabs of: polygon modelling/NURBS modelling /sub divisional modelling, extrusions, 3D character development, key frame elements of each scene, camera, lights and character movement.
- The how to guide could take the form of a booklet, fact sheets, wall charts, film of process in audio-visual presentation for online use etc.
- Limitations and advantages if the software used.

DELIVERY GUIDANCE

This unit is centre-assessed and externally moderated.

In order to achieve this unit, learners must produce a portfolio of evidence showing that they can meet all the pass grading criteria.

Portfolios of work must be produced independently. Portfolios put forward for moderation must be available for the OCR Visiting Moderator to access freely during the moderation visit, along with witness statements and any other necessary supporting documentation.

Centres must confirm to OCR that the evidence produced by learners is authentic.

In order to achieve this unit, learners must produce evidence that meets all the pass grading criteria. There are no other additional requirements for this unit.

Learners should gain knowledge, understanding and skills through practical tasks related to their own productions as well as professional produced media products. Whilst this could be a standalone unit it could also be an integral part of other units including 60, 62 and 64.

If working as a team, learners should ensure that they have identified their contribution to the planning and execution of any task involving teamwork, this should be supported by a witness statement from the tutor. If learners are working as a team this presents the opportunity for individuals to draw on their strengths and also to develop new skills.

P1: Learners should have the opportunity to research a wide range of 3D modelling techniques used to create characters. It may be useful for learners if centres could arrange visits from guest speakers or practitioners. Learners could also use published information and the internet for their explorations. Special features on game discs and DVDs can be a good source of information on the modelling process' this may also be available in company published material. It may also be helpful for learners to participate in tutor led discussions on the modelling process and its potential applications and undertake short experimental tasks in the various techniques. Learners could use this as an opportunity to explore different 3D modelling techniques used in the creation of 3D modelled characters, by practically engaging with these techniques and producing their own simple test sample models. Learners will need to be taught various 3D modelling techniques if they are to undertake this as part of an approach to P1. This could be done in teacher led skills workshops. Other suggested evidence could include a

written report, diagrams and graphs, audiovisual presentation of the material, wall chart diagram of the production process, information sheets, a slide show with supporting notes, a blog, a verbal presentation with a supporting slide show of collected short tasks and notes on how they were produced.

P2/M1: When planning the production of the 3D character learners should, keep in mind if the character is to be used in a larger production and plan for this accordingly and, where possible, should be using professional practices. Learners may also find it helpful to refer to their own experience of modelling characters, whether within a computer game or animation etc. when producing a character, which will appeal to their target audience. Evidence may take the form of a portfolio of work made up of the storyboard with character movement and their interaction with their environment, developed sketches, drawings from different angles with annotations, computer mock ups, a character profile etc. Evidence could also include screen grabs and audio-visual presentations.

P3/P4/M2/M3/D1/D2: Learners when constructing the 3D character should wherever possible work to a deadline and follow industry standard production processes. Learners should be taught appropriate production skills in line with commercial practices, which may be possible through teacher led skills workshops, or where possible inviting guest practitioners to the centre. If working in a group, the learner should evidence their contribution to the process of generating the 3D character in software packages by recording its development at various resolutions and stages in the production process leading up to the animated 3D modelled character as a final rendered outcome and identifying which parts or stages they were responsible for. Evidence of learners' contribution should be supported by a witness statement from the tutor.

P5/M4: Suggested evidence for the how to guide could be a series of developmental screen grabs with guidance notes, a slide show presentation with images and notes on the process of modelling the 3D character.

Learners should seek to evidence the grading criteria through a variety of mediums, (i.e. written format, written presentations, verbal presentations, audio content, audiovisual content) which highlight their particular strengths, however learners should be encouraged to stretch their skills and knowledge by using a range of mediums to evidence their work.

RESOURCES

This section provides suggestions of suitable resources. The list is neither prescriptive nor exhaustive, and learners should be encouraged to gather information from a variety of sources.

Some suggested resources are intended for tutor use. The resources in this section were current at the time of production.

Books

Sarris, N & Strintzis, MG (2004)	<i>3D Modelling and Animation: Synthesis and Analysis Techniques for the Human Body</i> IGI Publishing
Ratner, P (1998)	<i>3D Modelling and Animation</i> John Wiley & Sons
Kerlow, IV (2009)	<i>The Art of 3D Computer Animation and Effects</i> John Wiley & Sons (4th Edition)
Roberts, S (2005)	<i>Character Animation in 3D: Use Traditional Drawing Techniques to Produce Stunning CGI Animation</i> Focal Press
Beiman, N (2007)	<i>Prepare to Board! Creating Story and Characters for Animation Features and Shorts</i> Focal Press
Akenine-Moeller, T (2002)	<i>Real-time Rendering</i> A K Peters (2nd Revised edition)

Websites

www.skillset.org/animation/

LINKS TO NOS

Skillset – Animation (2007)

- ANIM 2** Manage and store assets
- ANIM 8** Create designs
- ANIM 11** Create 2D assets for production
- ANIM 14** Set up 3D elements for animation
- ANIM 15** Create 3D animation
- ANIM 16** Render 3D animation
- ANIM 17** Build characters (models) for stop motion animation
- ANIM 18** Set up lighting and cameras for stop motion animation
- ANIM 19** Create stop motion
- AIM 22** Composite animation

Skillset – Interactive Media and Computer Games (2009)

- IM1** Work effectively in interactive media
- IM3** Prepare assets for use in interactive media products
- IM5** Design user interfaces for interactive media products
- IM6** Use authoring tools to create interactive media products
- IM10** Initiate interactive media projects
- IM11** Manage intellectual property rights

ENTO – Health and Safety Standalone Units

- HSS1** Make sure your own actions reduce risks to health and safety



CONTACT US

Staff at the OCR Customer Contact Centre are available to take your call between 8am and 5.30pm, Monday to Friday.

We're always delighted to answer questions and give advice.

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