BTEC

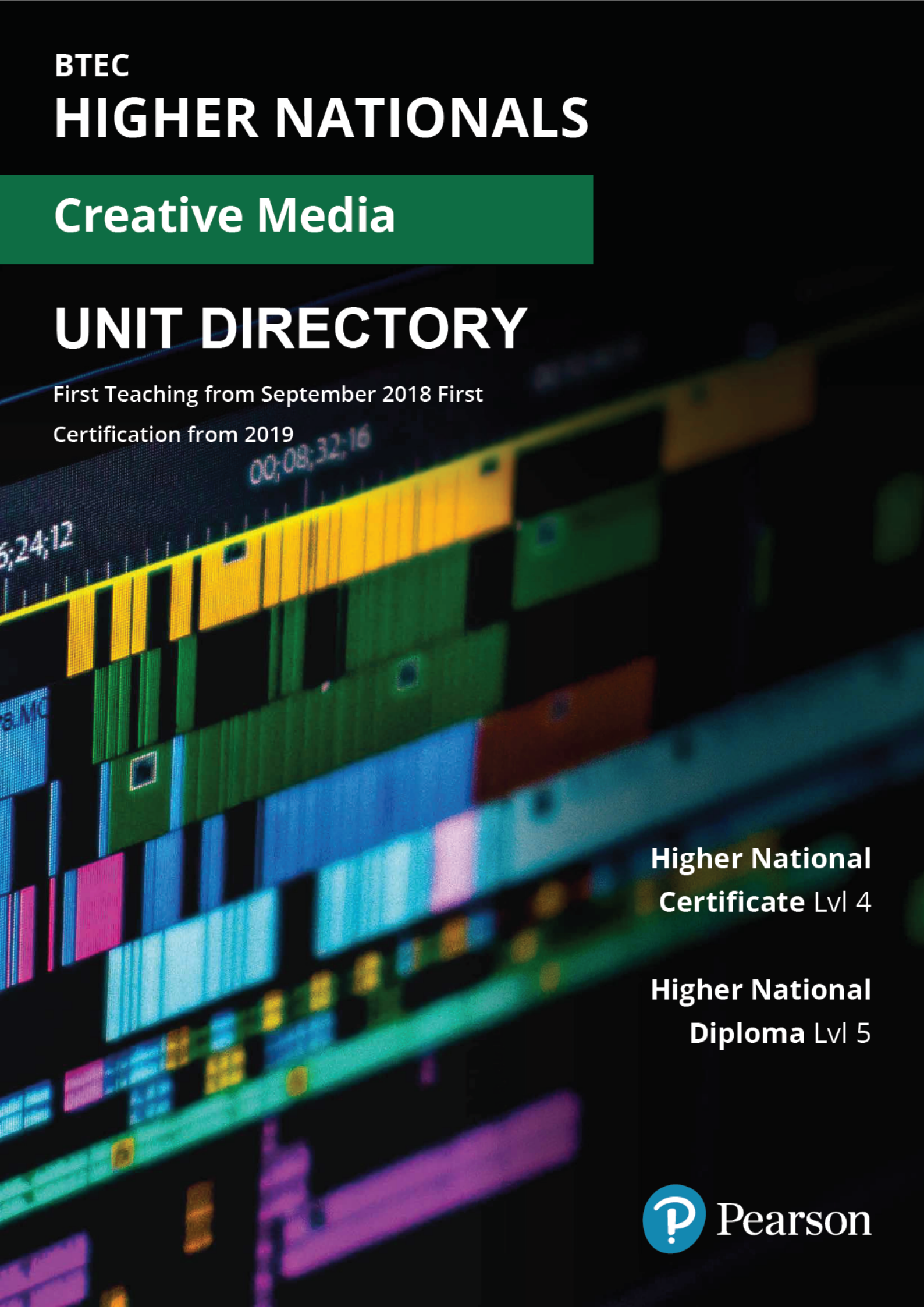
HIGHER NATIONALS

Creative Media

UNIT DIRECTORY

First Teaching from September 2018 First

Certification from 2019



Higher National Certificate Lvl 4

Higher National Diploma Lvl 5

Pearson

Year 1 (Level 4)

HNC Creative Media Production (Visual Effects)

120 Credits

Mandatory

Unit 1	Individual Project (Pearson-set)	15 Credits
Unit 2	Creative Media Industry	15 Credits
Unit 3	Professional Practice	15 Credits

Specialist

Unit 17	Visual Effects & Motion Graphics Culture	15 Credits
Unit 19	Visual Effects Practices	15 Credits
Unit 20	3D Modelling	15 Credits

Optional

Unit 23	Game Design	15 Credits
Unit 30	Principles of Animation	15 Credits

Year 2 (Level 5)

HND Creative Media Production (Visual Effects)

120 Credits (240 Total)

Mandatory

Unit 36	Collaborative Project (Pearson-set)	15 Credits
Unit 37	Personal Professional Development	15 Credits

(The Specialist and Optional units may be subject to change)

Specialist

Unit 43	Advanced Visual Effects Studies	30 Credits

Optional

Unit 60	Advanced Animation	15 Credits
Unit 61	Advanced 3D Modelling	15 Credits
Unit 64	Advanced Compositing for Film & Television	15 Credits
Unit 75	Environment & Level Design	15 Credits

Unit 1: Individual Project (Pearson-set)

Unit code	**Y/616/1709**
Unit type	**Core**
Unit level	**4**
Credit value	**15**

Introduction

Within the field of creative media production there are many separate disciplines/specialisms to focus on. The main purpose of this unit is to provide students with the opportunity to discover personal strengths and inform independent practice within the creative media production industry.

This unit is designed to apply creative practice in response to a theme and topics set by Pearson. Students will carry out and apply the knowledge and skills developed through other areas of their studies to complete and present an individual project. Wherever possible the unit will simulate working studio conditions, which will enhance and develop professional industry skills and practice.

The ability to define, plan and undertake a project is a critical set of skills throughout the various roles within the creative industries. Identifying appropriate information and analysing this to formulate clear solutions is required to underpin many of the processes that inform creative practice.

***Please refer to the accompanying Pearson-set Assignment Guide and the Theme Release document for further support and guidance on the delivery of the Pearson-set unit.**

Learning Outcomes

By the end of this unit students will be able to:

1. Explain the specialisms within creative media production, based on research into historic and contemporary precedents
2. Develop individual creative solutions in response to a given brief
3. Present a resolved proposition to an identified audience
4. Evaluate a resolved proposition in response to audience feedback and personal reflection.

Essential content

LO1 **Explain the specialisms within creative media production, based on research into historic and contemporary precedents**

Primary and secondary research

Thematic research (visual and contextual references)

Research ethics and working practices

Examples of opportunities within creative media production

Interpretation and evaluation of contexts

LO2 **Develop individual creative solutions in response to a given brief**

Project and time management plans

The elements and principles of creative media production

Equipment, techniques and processes:
Suitability of selected equipment, techniques and processes.

Health, safety, and safe working practices

Project reports and project evaluations

LO3 **Present a resolved proposition to an identified audience**

Presentation formats:
Industry-standard presentation software
Hierarchy of text-based and visual information
Presentation timing, structure and delivery
Selection and editing of content
Presentation skills.

Understanding audiences

LO4 **Evaluate a resolved proposition in response to audience feedback and personal reflection.**

Creative, cultural, social, political, economic trends and contexts

Industry-specific terminology

Reflective practice

Project diary/journal

Learning Outcomes and Assessment Criteria

<table>
<tr><th>Pass</th><th>Merit</th><th>Distinction</th></tr>
<tr><td colspan="2">LO1 Explain the specialisms within creative media production, based on research into historic and contemporary precedents</td><td rowspan="5">LO1 LO2
D1 Plan and manage an independent project, informed by historical and contemporary contexts, through experimentation</td></tr>
<tr><td>P1 Research historical and contemporary creative media production related to own area of specialism
P2 Analyse research findings to reach coherent conclusions</td><td>M1 Evaluate research to inform creative media production experimentation</td></tr>
<tr><td colspan="2">LO2 Develop individual creative solutions in response to a given brief</td></tr>
<tr><td>P3 Evaluate a brief to identify areas for exploration
P4 Develop alternative solutions, through experimentation and testing, in response to a given theme and topic</td><td>M2 Assess alternative solutions in order to develop a final proposition</td></tr>
<tr><td colspan="2">LO3 Present a resolved proposition to an identified audience</td></tr>
<tr><td>P5 Present a resolved project outcome to an audience
P6 Use industry-standard presentation software</td><td>M3 Justify creative media production outcomes through discourse and debate</td><td rowspan="3">LO3 LO4
D2 Reflect upon own performance in managing a project, highlighting areas of good practice and for improvement</td></tr>
<tr><td colspan="2">LO4 Evaluate a resolved proposition in response to audience feedback and personal reflection</td></tr>
<tr><td>P7 Explore how own work relates to historical and contemporary precedents
P8 Evaluate audience feedback in relation to own reflection</td><td>M4 Analyse the relationship between own techniques and processes and those of precedents</td></tr>
</table>

Recommended resources

Textbooks

BASSOT, B. (2017) *The Reflective Journal*. 2nd ed. Basingstoke: Palgrave Macmillan.

DAVIES, R. (2013) *Introducing the Creative Industries: From Theory to Practice*. London: SAGE Publications Ltd.

ESS, C. (2015) *Digital Media Ethics*. 2nd ed. Cambridge, UK: Polity.

HANSEN, A. (2013) *Media and Communication Research Methods*. Basingstoke: Palgrave Macmillan.

GAUNTLETT, D. (2015) *Making Media Studies: The Creativity Turn in Media and Communications Studies*. New York: Peter Lang.

BROUGHTON, P. (2013) *Life's a Pitch*. London: Portfolio Penguin.

ROBERTS-BRESLIN, J. (2012) *Making Media: Foundations of Sound and Image Production*. New York: Focal Press.

Links

This unit links to the following related units:

Unit 2: Creative Media Industry

Unit 3: Professional Practice

Unit 36: Collaborative Project (Pearson-set)

Unit 37: Personal Professional Development

Unit 2: Creative Media Industry

Unit code	**L/616/1710**
Unit type	**Core**
Unit level	**4**
Credit value	**15**

Introduction

Creative media production exists within the broader context of the creative industries. This sector is one of the most valuable and fastest-growing economic areas in most of the world. While the creative industries include a very broad spectrum of practices, many are closely related and share both creative processes and required skills. In addition, with the increase in the use of technologies, there are continued convergences between creative practices and their associated professions.

In this unit, students will explore both the creative industries and the specific areas of creative media production. By developing a broad contextual understanding of the industry, business practices, and specific skills, students will be able to situate their own work and skills within the specific industries and the wider sector.

Topics covered in the unit include: the creative industry sector, creative media production fields, sector economics, company types, roles within creative media production, relationships between creative media production companies and roles, the history of the industry, planning for the future.

Learning Outcomes

By the end of this unit students will be able to:

1. Discuss the relationship between creative media production and the creative industries, based on historic and contemporary precedents
2. Explain the different forms of company and employment within the creative industries
3. Evaluate the roles and relationships within a specific area of creative media production
4. Analyse factors that may affect the future development of a specific area of creative media production.

Essential content

LO1 **Discuss the relationship between creative media production and the creative industries, based on historic and contemporary precedents**

The creative industries:

Subject areas: film, television, radio, podcasting, web design & development, app design & development, visual effects, motion graphics, games design & development

History of the sector

Economics.

Creative media production:

Subject areas

Development of specific subject area(s).

Relationships in/between creative media production and the creative industries

LO2 **Explain the different forms of company and employment within the creative industries**

Company types:

Partnerships: limited liability partnerships

Limited Companies: public limited companies, private limited companies, unlimited companies, sole trader.

Employment:

Self-employed

Employed.

Legislation/Regulation/Taxation:

Legislation: company/corporate, employment

Regulation: company/corporate, individual

Taxation: company/corporate tax, employment tax, income tax, local/national tax

Tax breaks/Incentives: supporting specific industries, developing growth.

LO3 **Evaluate the roles and relationships within a specific area of creative media production**

Roles:

Production roles

Creative roles

Management roles

Technical roles

Support roles.

Relationships:

Management/hierarchies

Workflow relationships

Creative relationships

Support relationships.

LO4 **Analyse factors that may affect the future development of a specific area of creative media production.**

Economic factors:

Global/National/Regional economies

Impact of broader economies.

Political factors:

Government change

Legislative changes

Tax changes.

Technological factors:

New/obsolete technologies

New formats

New distribution channels.

Social factors:

Demographic change

Influencers.

Learning Outcomes and Assessment Criteria

<table>
<tr><th>Pass</th><th>Merit</th><th>Distinction</th></tr>
<tr><td colspan="2">LO1 Discuss the relationship between creative media production and the creative industries, based on historic and contemporary precedents</td><td rowspan="2"></td></tr>
<tr><td>P1 Examine what is meant by the creative industries, in relation to subject areas and economic sectors

P2 Explain the relationship between creative media production and the creative industries</td><td>M1 Evaluate the economic value of the creative industries for a specific geographic context</td></tr>
<tr><td colspan="2">LO2 Explain the different forms of company and employment within the creative industries</td><td rowspan="5">LO2 LO3

D2 Evaluate how roles within creative media production may change based on the form of company or employment</td></tr>
<tr><td>P3 Explain the different forms of company that practise within the creative industries

P4 Evaluate forms of employment in the creative industries</td><td>M2 Discuss the benefits and challenges of self-employment within the creative industries</td></tr>
<tr><td colspan="2">LO3 Evaluate the roles and relationships within a specific area of creative media production</td></tr>
<tr><td>P5 Describe the different roles associated with practice within a specific area of creative media production

P6 Evaluate the way in which roles and relationships differ between media production contexts</td><td>M3 Assess the workflow relationships that enable effective development of work within a specific area of creative media production</td></tr>
</table>

Pass	Merit	Distinction
LO4 Analyse factors that may affect the future development of a specific area of creative media production		
P7 Discuss the factors that influence the creative industries and creative media production **P8** Analyse the way that factors may influence the future development of creative media production	**M4** Evaluate the connection between factors that influence the development of creative media production	**D3** Assess the ways in which government policy may have a positive or negative effect on the future development of creative media production

Recommended resources

Textbooks

ALBARRAN, B. (2016) *The Media Economy* (Media Management and Economics Series). 2nd ed. London: Routledge.

HAVENS, T. (2016) *Understanding Media Industries*. Oxford: Oxford University Press.

HOPE, S. (2015) *Media Career Guide: Preparing for Jobs in the 21st Century*. 10th ed. Boston: Bedford/St. Martin's.

INDUSTRIES, M. (2016) *Media Industries: Perspectives on an Evolving Field*. CreateSpace Independent Publishing Platform.

LOWE, G. (2016) *Managing Media Firms and Industries*. New York: Springer International Publishing.

Websites

creativeindustriesfederation.com	Creative Industries Federation (General Reference)
creativeskillset.org	CreativeSkillSet (General Reference)
eccia.eu	European Creative and Cultural Industries Alliance (General Reference)
londonmultimedia.org	International Creative Industries Alliance (General Reference)
mediaindustriesjournal.org	Media Industries (Research)

Links

This unit links to the following related units:

Unit 1: Individual Project (Pearson-set)

Unit 3: Professional Practice

Unit 4: Audio Practices

Unit 7: Film & Television Practices

Unit 10: Journalism Practices

Unit 13: Web & App Development Practices

Unit 16: Motion Graphics Practices

Unit 19: Visual Effects Practices

Unit 3: Professional Practice

Unit code	**R/616/1711**
Unit type	**Core**
Unit level	**4**
Credit value	**15**

Introduction

The creative industries are always changing in response to development in technology, social change and cultural conditions. Developing an awareness of the breadth of the industry; and the opportunities and challenges within, is a key skill for those entering the field. Evaluating one's own aims and ambitions, in relation to the roles within the industry, allows for planning and growth toward a desired future.

As well as defining and pursuing career goals, creative practitioners must schedule time, both to reflect and plan for personal professional development. This can help those working in creative industries to find inspiration and innovate, as well as prepare for external factors, such as keeping up with trends and new developments in their specialist field.

The aim of this unit is to support students in developing their reflective practice and defining areas for personal professional development; in the context of a growing awareness of the broad scope of creative media production. Students will define and implement personal professional development plans; through an investigation of the skills necessary to successfully pursue a career in the creative industries.

Learning Outcomes

By the end of this unit students will be able to:

1. Explore the creative media production professions, through research into historic and contemporary precedent
2. Discuss personal career goals in relation to the range of roles and subjects in the creative industries
3. Define personal development plans, highlighting areas to support specific career goals and general skills
4. Critically reflect on the achievement of personal development goals and plan for the future.

Essential content

LO1 **Explore the creative media production professions, through research into historic and contemporary precedent**

Historic development of creative media production:

Filmmaking

Television

Radio

Web

App

Games.

Contemporary creative media production:

Media/platform conversion

New technologies

Multi-skilling.

Creative media production professions:

Designer

Producer

Director

Scriptwriter

Developer.

LO2 **Discuss personal career goals in relation to the range of roles and subjects in the creative industries**

Careers in creative media production

Organisational structures in creative media production:

Roles

Company structures

Freelance versus employed.

Personal career planning

LO3 **Define personal development plans, highlighting areas to support specific career goals and general skills**

Defining career goals

Planning and conducting a skills audit

Employability skills and qualities

Subject-specific skills

Transferable skills

Type of professional development activities

SMART target setting

LO4 **Critically reflect on the achievement of personal development goals and plan for the future.**

The role of reflection for creative practitioners

Methods to record reflection:

Annotations

Blogs

Case studies

Journals

Photographs

Planning

Sketchbooks

Skills audit

Videos.

Importance of updating professional development plans regularly

How reflective practice can assist lifelong learning

Learning Outcomes and Assessment Criteria

<table>
<tr><th>Pass</th><th>Merit</th><th>Distinction</th></tr>
<tr><td colspan="2">LO1 Explore the creative media production professions, through research into historic and contemporary precedent</td><td rowspan="5"></td></tr>
<tr><td>P1 Examine the development of the creative media production industry

P2 Discuss the creative media production industry through a review of the work of a chosen practitioner</td><td>M1 Evaluate the historic development of the creative media production industry as it relates to chosen pathway</td></tr>
<tr><td colspan="2">LO2 Discuss personal career goals in relation to the range of roles and subjects in the creative industries</td></tr>
<tr><td>P3 Examine own knowledge and skills in relation to those required to work in the creative media production industry

P4 Explore the careers and roles within the creative media production industry, with specific emphasis on chosen pathway</td><td>M2 Discuss the importance of skills and knowledge that are common between different creative media production roles</td></tr>
<tr><td colspan="2">LO3 Define personal development plans, highlighting areas to support specific career goals and general skills</td><td rowspan="2"></td></tr>
<tr><td>P5 Define areas for personal professional development to support growth towards a chosen career

P6 Create a personal development plan, recognising skills and knowledge gained in education and in professional practice</td><td>M3 Compare the types of development that may be achieved in education versus those achieved in professional practice</td></tr>
<tr><td colspan="2"></td><td>LO1 LO2

D1 Analyse the change in skills and knowledge required for a chosen creative media production industry role, through time

LO3 LO4

D2 Analyse own future development plans in relation to personal professional development towards a specific role within creative media production</td></tr>
</table>

Pass	Merit	Distinction
LO4 Critically reflect on the achievement of personal development goals and plan for the future		
P7 Evaluate own development in relation to defined goals **P8** Present future planning for own development, considering both education and employment	**M4** Assess own personal professional development, and further skills and knowledge necessary to gain employment in creative media production	

Recommended resources

Textbooks

BARTON, G. (2016) *Don't Get a Job... Make a Job: How to make it as a creative graduate.* London: Laurence King.

COTTRELL, S. (2015) *Skills for Success: Personal Development and Employability*. 3rd ed. London: Palgrave.

DAVIES, R. (2013) *Introducing the Creative Industries: From Theory to Practice*. London: SAGE Publications Ltd.

HESMONDHALGH, D. (2012) *The Cultural Industries*. 3rd ed. London: SAGE Publications Ltd.

HOWKINS, J. (2013) *The Creative Economy: How People Make Money from Ideas.* 2nd ed. London: Penguin.

KIRTON, B. (2012) *Brilliant Workplace Skills for Students and Graduates*. Harlow: Prentice Hall/Pearson.

TROUGHT, F. (2012) *Brilliant Employability Skills.* Harlow: Pearson.

Websites

mindtools.com	Mind Tools Homepage (General Reference)
nationalcareersservice.direct.gov.uk	National Career Service Homepage (General Reference)
skillsyouneed.com	Skills You Need Homepage (General Reference)

Links

This unit links to the following related units:

Unit 1: Individual Project (Pearson-set)

Unit 2: Creative Media Industry

Unit 36: Collaborative Project (Pearson-set)

Unit 37: Personal Professional Development

Unit 71: Work-based Learning

Unit 17: Visual Effects & Motion Graphics Cultures

Unit code	**R/616/1725**
Unit Level	**4**
Credit value	**15**

Introduction

Industry requirements for intern and junior roles within the Visual Effects (VFX) and Motion Graphics sectors require students to develop both their technical-creative proficiency, as well as gaining a thorough understanding of the underpinning theoretical and creative processes involved in this field.

This unit introduces research skills and aims to develop visual intelligence and understanding within screen media. It explores the historical development of VFX/Motion Graphics to provide a framework for understanding visual culture in relation to screen experiences, and encourages students to recognise the value of theory-informed practice. Students will further be challenged to recognise and identify technical-creative dependencies, team roles and project structures, which will enable them to learn and experience how ideas are communicated visually and how key cultural contexts have defined visual language and viewers' perspectives.

On successful completion of this unit, students will have a good understanding of screen cultural contexts, as well as the ability to perform meaningful technical and visual research to support and validate their practical endeavours.

Learning Outcomes

By the end of this unit students will be able to:

1. Discuss the roles and processes of the VFX/Motion Graphics industry
2. Explore the practical and theoretical development of the VFX/Motion Graphics industry, through example and precedent
3. Analyse a media production and how VFX/Motion Graphics are used to support its communication intentions
4. Present ideas for a VFX/Motion Graphics work that engages viewers for a specified purpose based on theoretical frameworks.

Essential content

LO1 **Discuss the roles and processes of the VFX/Motion Graphics industry**

Production practices:

Professional practice

Project management

Pre-production

Production

Post-production

Quality checking and testing

Content

Distribution.

Industry context:

Independent studio

Freelance or sole trader

Part of large studio

Product type

Niche studio.

Roles:

Runner

Compositor

Designer

Animator

Concept artist

Paint/Prep

Layout artist

Lighting

Match move artist

Matte painter

Producer

Roto artist

Technical director

VFX supervisor

Co-ordinator.

LO2 **Explore the practical and theoretical development of the VFX/Motion Graphics industry, through example and precedent**

Analysis:

Premise

Context

Characterisation

Structure

Visual presentation/scenes.

Context and function:

Marketing and branding

Idents

Title and credit sequences

Animations

Blockbuster

Information graphics

Music video

Experimental

Explainer video and product demonstrators

Documentary

Broadcast graphics

Presentations

Live events

Animated GIF (Graphic Interchange Format).

History of VFX/Motion Graphics:

Early years

Optical years – matte painting

Advent of digital and go-motion

Analogue versus digital.

LO3 **Analyse a media production and how VFX/Motion Graphics are used to support its communication intentions**

Style and visual design theories:

Cinematography

Shot classifications

Image composition

Formal elements

Narrative

Figurative or abstract

Kinetic typography

Pure animation

Composite

Linear or non-linear

Character driven

Audience theories

Genre

Audio driven

Tempo.

Production methods:

Process

Composite

Technologies

CGI

Animation type

Modelling

Software types

Green screen

Physical effects

Matte

Simulation effects

Image types

Movement capture techniques

Simulation FX.

LO4 **Present ideas for a VFX/Motion Graphics work that engages viewers for a specified purpose based on theoretical frameworks.**

Product:

Context

Communication intentions

Genre

Narrative

Audience

Premise

Style

Type

Audience

Relationship to historical developments.

Strategy:

Technology requirements

Production process

Feasibility

USP.

Ideas:

Tests

Visuals

Storyboard

Proof of concept

Mock up.

Learning Outcomes and Assessment Criteria

<table>
<tr><th>Pass</th><th>Merit</th><th>Distinction</th></tr>
<tr><td colspan="2">LO1 Discuss the roles and processes of the VFX/Motion Graphics industry</td><td rowspan="5">LO1 LO2

D1 Critically analyse the development of the VFX/Motion Graphics industry and practice through contemporary and historic precedents</td></tr>
<tr><td>P1 Explore the roles associated with the VFX/Motion Graphics industry

P2 Discuss the processes associated with VFX/Motion Graphics production</td><td>M1 Analyse the relationship between roles and processes in VFX/Motion Graphics production</td></tr>
<tr><td colspan="2">LO2 Explore the practical and theoretical development of the VFX/Motion Graphics industry, through example and precedent</td></tr>
<tr><td>P3 Explain the historical development of VFX and Motion Graphics

P4 Use examples and precedent to highlight key milestones in the development of VFX/Motion Graphics</td><td>M2 Analyse the impact that examples have had on the development of the VFX/Motion Graphics industry</td></tr>
<tr><td colspan="2">LO3 Analyse a media production and how VFX/Motion Graphics are used to support its communication intentions</td></tr>
<tr><td>P5 Analyse the use of compositional elements in examples of VFX/Motion Graphics

P6 Assess the uses of VFX/Motion Graphics within a selected media production</td><td>M3 Evaluate the relationship between VFX/Motion Graphics and the communication intentions of the product</td><td>LO3 LO4

D2 Critically evaluate a VFX/Motion Graphics proposal based on approach to audience, purpose and context</td></tr>
</table>

Pass	Merit	Distinction
LO4 Present ideas for a VFX/Motion Graphics work that engages viewers for a specified purpose based on theoretical frameworks		
P7 Develop ideas for VFX/Motion Graphics, highlighting the application of theoretical frameworks **P8** Present ideas for VFX/Motion Graphics, emphasising the practical application of theoretical principles	**M4** Use visualising techniques to iteratively develop an idea	

Recommended resources

Textbooks

BETANCOURT, M. (2013) *The History of Motion Graphics.* Rockville, MD: Wildside Press.

DOBBERT, T. (2013) *Matchmoving.* Hoboken, NJ: John Wiley & Sons.

FINANCE, C. (2015) *The Visual Effects Producer: Understanding the Art and Business of VFX.* New York: Focal Press.

FREEMAN, H. (2015) *The Moving Image Workshop: Introducing animation, motion graphics and visual effects in 45 practical projects* (Required Reading Range). London: Fairchild Books.

LANIER, L. (2017) *Advanced Visual Effects Compositing: Techniques for Working with Problematic Footage.* New York: Focal Press.

MACDONALD, I. (2016) *Hybrid Practices in Moving Image Design: Methods of Heritage and Digital Production in Motion Graphics.* New York: Palgrave Macmillan.

MEYER, C. (2016) *After Effects Apprentice: Real-World Skills for the Aspiring Motion Graphics Artist (Apprentice Series)*. 4th ed. New York: Focal Press.

SAWICKI, M. (2012) *Filming the Fantastic: A Guide to Visual Effects Cinematography: A Guide to Visual Effects Cinematography*. 2nd ed. New York: Focal Press.

Websites

artofvfx.com	Art of VFX Homepage (General Reference)
awn.com/vfxworld	VFX World Magazine Homepage (General Reference)
visualeffectssociety.com	Visual Effects Society Resources (Training/Development Tool)

Links

This unit links to the following related units:

Unit 7: Film & Television Practices

Unit 16: Motion Graphics Practices

Unit 18: Typography

Unit 19: Visual Effects Practices

Unit 26: Editing for Film and Television

Unit 27: Storyboarding

Unit 30: Principles of Animation

Unit 31: Art Development

Unit 39: Advanced Television Studies

Unit 42: Advanced Motion Graphics Studies

Unit 43: Advanced Visual Effects Studies

Unit 46: Advanced Rendering & Visualisation

Unit 47: Emerging Technologies

Unit 60: Advanced Animation

Unit 61: Advanced 3D Modelling

Unit 64: Advanced Compositing for Film & Television

Unit 65: Marketing & Promotion

Unit 66: Branding & Identity

Unit 74: Asset Capture & Management

Unit 19: Visual Effects Practices

Unit code	**D/616/1727**
Unit Level	**4**
Credit value	**15**

Introduction

Visual Effects (VFX) has become a cornerstone of the visual-creative industries and digital artists must demonstrate the ability to quickly and effectively utilise the wide range of software, tools and technologies at their disposal.

Covering the foundation techniques, tools and technical concepts commonly used, this unit provides students the opportunity to practically explore VFX production and assembly. With emphasis on understanding the processes and practices of the 'production pipeline', students will develop the skills necessary to undertake the key processes of VFX production, from asset sourcing or capture to compositing and quality control.

On completion of the unit, students will have a thorough understanding of data structures and file formats, the ability to adhere to standardised workflows and industry pipelines, and the mastery of a range of software and techniques for producing VFX material.

Learning Outcomes

By the end of this unit students will be able to:

1. Explain the processes and practices associated with the production of visual effects
2. Plan and manage a VFX shot, based on a given brief
3. Produce a VFX shot, through an iterative process, using industry-standard tools and techniques
4. Evaluate a finished VFX shot, based on technical execution and audience feedback.

Essential content

LO1 **Explain the processes and practices associated with the production of visual effects**

Roles within *visual* effects:

Compositor

Concept artist

Digital preparation artist

Layout artist

Lighting technical director

Match move artist

Motion capture specialist

Colourist

Matte painter

Producer

Roto artist

Runner

Technical director

VFX supervisor.

Basic cinematography:

Cameras and lenses: Camera operation (angles, shot types), framing (scale, Depth of Field (DOF))

Sequence continuity

Motion

Pacing.

VFX design:

Break-downs

Render passes

Context

Informative

Identify

Sourcing

Implementing

Conventions.

LO2 **Plan and manage a VFX shot, based on a given brief**

Planning:

Objectives: Shot identification, shot requirements (safety considerations, cost), style, genre

Timeline: Shooting schedule, production schedule, deadlines

Equipment required: Cameras, lenses, motion capture, lighting, green-screen

Hardware/Software.

Design:

Shot objective

Storyboarding: Previsualisation

Animatics

Asset requirements.

LO3 **Produce a VFX shot, through an iterative process, using industry-standard tools and techniques**

Acquisition (shooting):

Filming

Codecs

Types of elements

Still photography

CGI supervision (practice).

Tools & techniques:

Green screen

Virtual sets

Light matching

HDRI

Matchmoving

Photogrammetry

VFX paint (mattes, set extension, rig removal)

Motion/performance capture

Miniatures

Forced perspective

3D modelling: Animation, lighting, rendering.

Compositing:

Alpha channel

Layering

Rotoscoping

Stereoscopic conversion

Edge quality

Focus

Colour

Grain/noise

2D effects.

LO4 **Evaluate a finished VFX shot, based on technical execution and audience feedback**

Audience analysis:

Feedback

Reaction

Audience size

Interaction.

Evaluation:

Brief

Client needs

Audience needs

Techniques and processes

Execution

Comparison with products in industry

Contribution to overall product.

Learning Outcomes and Assessment Criteria

<table>
<tr><th>Pass</th><th>Merit</th><th>Distinction</th></tr>
<tr><td colspan="2">LO1 Explain the processes and practices associated with the production of visual effects</td><td rowspan="2">D1 Analyse a VFX shot, highlighting the tools, techniques and practices used by the different roles in the production pipeline</td></tr>
<tr><td>P1 Describe the roles, and their practices, associated with VFX production

P2 Identify the tools/techniques used in VFX shots</td><td>M1 Compare the tools and techniques used in different VFX shots</td></tr>
<tr><td colspan="2">LO2 Plan and manage a VFX shot, based on a given brief</td><td rowspan="4">LO2 LO3

D2 Produce a visually cohesive VFX shot that combines multiple assets, in response to a given brief</td></tr>
<tr><td>P3 Evaluate a brief to establish the objectives of a VFX shot

P4 Produce storyboards, previsualisations and animatics for a VFX shot</td><td>M2 Analyse objectives of a VFX shot to define deadlines and milestones for production</td></tr>
<tr><td colspan="2">LO3 Produce a VFX shot, through an iterative process, using industry-standard tools and techniques</td></tr>
<tr><td>P5 Develop a VFX shot through acquisition of assets and the use of industry-standard tools and techniques

P6 Refine a VFX shot, based on an iterative process of testing and revision</td><td>M3 Evaluate alternative VFX shots, through iterative compositing of different assets</td></tr>
<tr><td colspan="2">LO4 Evaluate a finished VFX shot, in response to audience feedback</td><td rowspan="2">D3 Critically evaluate audience feedback and reaction to a ‘landmark’ VFX shot, reflecting the context of its time</td></tr>
<tr><td>P7 Explain how valid audience feedback can be obtained for a particular film

P8 Evaluate how audience feedback impacts on VFX practice</td><td>M4 Assess how VFX practices could be improved or altered in response to audience feedback</td></tr>
</table>

Recommended resources

Textbooks

ARUNDALE, S. & TRIEU, T. (2014) *Modern Post: Workflows and Techniques for Digital Filmmakers*. Burlington, MA: Focal Press.

BRINKMAN, R. (2008) *The Art and Science of Digital Compositing: Techniques for Visual Effects, Animation and Motion Graphics*. Burlington, MA: Morgan Kaufman Publishers.

DINUR, E. (2017) *The Filmmaker's Guide to Visual Effects: The Art and Techniques of VFX for Directors, Producers, Editors and Cinematographers*. New York: Focal Press.

FINANCE, C. & SWERMAN, S. (2009) *The visual Effects Producer: understanding the art and business of vfx.* New York: Focal Press.

GRESS, J. (2014) *Visual Effects and Compositing*. Berkeley: New Riders.

MATTINGLY, D.B. (2012) *The Digital matte Painting Handbook.* Indianapolis, IN: Wiley Publishing, Inc.

MCCLEAN, S. (2008) D*igital Storytelling: The Narrative Power of Visual Effects.* Cambridge, MA: MIT Press.

MITCHELL, M. (2004) *Visual Effects for Film and Television.* New York: Focal Press.

PRINCE, S. (2011) *Digital Visual Effects in Cinema: The Seduction of Reality.* New Brunswick, NJ: Rutgers University Press.

ZWERMAN, S. & OKUN, J. (2014) *The VES Handbook of Visual Effects: Industry-standard VFX Practices and Procedures.* New York: Focal Press.

Websites

artofvfx.com	Art of VFX Homepage (General Reference)
awn.com/vfxworld	VFX World Magazine Homepage (General Reference)
variety.com/t/visual-effects/	Variety Visual Effects (General Reference)
visualeffectssociety.com	Visual Effects Society Resources (Training/Development Tool)

Links

This unit links to the following related units:

Unit 17: Visual Effects & Motion Graphics Cultures

Unit 26: Editing for Film and Television

Unit 27: Storyboarding

Unit 39: Advanced Television Studies

Unit 43: Advanced Visual Effects Studies

Unit 46: Advanced Rendering & Visualisation

Unit 64: Advanced Compositing for Film & Television

Unit 20: 3D Modelling

Unit code	**H/616/1728**
Unit Level	**4**
Credit value	**15**

Introduction

3D graphics are used in every aspect of the media industry. They enable the conceptualisation and visualisation of assets for use in film and television, games, journalism and many more areas of the media. The ability to rapidly modify objects through an iterative process allows for the creation of production-ready models to fit within the constraints of the production.

Through exploration of 3D modelling packages, students will learn to conceptualise, develop and implement 3D models for media productions using industry-standard practices. They will explore a range of modelling tools and techniques to create models to fit within the requirements and limitations of the intended product. They will make use of 2D and 3D painting and editing software to create textures that can be applied to models, to make them fit into specific media contexts for different purposes.

On completion of this unit, students will be able to model objects such as props, 3D text, environmental elements or characters. They will also be able to prepare textures and shaders for rendering, and integrate 3D models into other media workflows.

Learning Outcomes

By the end of this unit students will be able to:

1. Explain the uses of 3D models in different media production contexts
2. Plan and manage the development of 3D models to meet requirements of a brief
3. Apply texture maps and shaders to 3D models to meet the requirements of a specific media context
4. Present finished 3D models for a specific media context.

Essential content

LO1 **Explain the uses of 3D models in different media production contexts**

Contexts:

Film & television

Animation

Games

Visualisation (architecture, product design, etc.).

Platforms:

Television

Cinema

Games: console, PC, mobile

Print versus screen.

Software:

Surface modelling

Solid modelling

Nurbs-based versus spline-based

CAD/CAM.

Technical constraints

Production constraints

LO2 **Plan and manage the development of 3D models to meet requirements of a brief**

Planning:

Sketching

Line drawings

Colour

Orthographic drawings

Scale

Annotations

Intended use.

Production:

Solid modelling

Surface modelling

Boolean operations

Detail

Polygon count

Affordance

Software

Materials

Edge-loops

Topology/Retopology

Viewports

Navigation.

Reference

Scale

Sculpting

Management:

Backup

Filenames

Deadlines

Feedback.

LO3 **Apply texture maps and shaders to 3D models to meet the requirements of a specific media context**

Materials & shaders:

Poly limit

UV maps

Texture mapping

Displacement mapping

Bump mapping

Normal maps

Shader types

PBR materials (Physical based rendering)

Limitations

Baking

Tile textures

Procedural textures.

Rendering:

Pre-rendered

Real-time rendering

Wireframe

Hidden line

Shaded

Photorealistic.

LO4 **Present finished 3D models for a specific media context**

Media context requirements:

Media type (e.g. film, game, animation)

Format

Resolution

Rendering methods

Delivery method

Client feedback

Audience feedback

Sign off

Contract

Usage agreement.

Presentation:

Feedback

Reflection

Format

Limitations of presentation format

Benefits of presentation format.

Learning Outcomes and Assessment Criteria

<table>
<tr><th>Pass</th><th>Merit</th><th>Distinction</th></tr>
<tr><td colspan="2">LO1 Explain the uses of 3D models in different media production contexts</td><td rowspan="3">D1 Evaluate the use of different tools and techniques to achieve 3D modelled outputs for specific media types</td></tr>
<tr><td>P1 Discuss the development of 3D modelling through historic and contemporary precedents

P2 Assess the techniques and processes through the work of others</td><td>M1 Analyse developments in 3D modelling software and the impact on different media sectors</td></tr>
<tr><td colspan="2"></td></tr>
<tr><td colspan="2">LO2 Plan and manage the development of 3D models to meet requirements of a brief</td><td rowspan="5">LO2 LO3

D2 Produce 3D modelling solutions that reflect a creative process based on experimentation and testing, in support of a given brief</td></tr>
<tr><td>P3 Develop concepts and prototypes for 3D models in response to a given brief

P4 Create 3D models using industry-standard tools and techniques</td><td>M2 Evaluate concepts and prototypes, to iteratively refine 3D models</td></tr>
<tr><td colspan="2">LO3 Apply texture maps and shaders to 3D models to meet the requirements of a specific media context</td></tr>
<tr><td>P5 Analyse a brief to determine specific requirements for textures and lighting

P6 Use 2D and 3D software to create texture maps and materials for completed 3D models</td><td>M3 Create draft renders to test and refine textures, shaders and lighting</td></tr>
<tr><td colspan="2"></td></tr>
<tr><td colspan="2">LO4 Present finished 3D models for a specific media context</td><td rowspan="3">D3 Evaluate 3D modelling output and development process in response to audience feedback and reflection</td></tr>
<tr><td>P7 Analyse a specific media context to define the requirements for 3D model output

P8 Present finished 3D modelling output and development work in response to a brief</td><td>M4 Assess the changes that would be required to re-use 3D models and assets for alternative media contexts</td></tr>
<tr><td colspan="2"></td></tr>
</table>

Recommended resources

Textbooks

3DTOTAL PUBLISHING. (2016) *Beyond art Fundamentals.* Worcester: 3DTotal Publishing.

AHEARN, L. (2016) *3D Game Textures: Create Professional Game Art Using Photoshop.* 4th ed. Boca Raton, FL: CRC Press.

LEGASPI & 3DTOTAL PUBLISHING. (2015) *Anatomy for 3D artists.* Worcester: 3DTotal Publishing.

OSIPA, J. (2010) *Stop staring: facial modelling and animation done right*. Indianapolis, IN: Wiley Publishing, Inc.

SHIRLEY, P. (2016) *Fundamentals of Computer Graphics*. Boca Raton, FL: CRC Press.

VAUGHAN, W. (2011) *Digital Modelling.* Berkeley: New Riders.

Websites

cgsociety.com	CG Society All sections (News/Discussion Forum/General Reference)
creativebloq.com	Creative Bloq All sections (Tutorials/General Reference)
polycount.com	Polycount All sections (News/Discussion Forum)
3dtotal.com	3D Total All sections (News/Discussion Forum/General Reference)
80.lv	80 Level All sections (Tutorials/General Reference)

Links

This unit links to the following related units:

Unit 16: Motion Graphics Practices

Unit 17: Visual Effects & Motion Graphics Cultures

Unit 18: Typography

Unit 19: Visual Effects Practices

Unit 21: Game Development Practices

Unit 23: Game Design

Unit 27: Storyboarding

Unit 30: Principles of Animation

Unit 31: Art Development

Unit 42: Advanced Motion Graphics Studies

Unit 43: Advanced Visual Effects Studies

Unit 44: Advanced Game Development Studies

Unit 46: Advanced Rendering & Visualisation

Unit 47: Emerging Technologies

Unit 60: Advanced Animation

Unit 61: Advanced 3D Modelling

Unit 66: Branding & Identity

Unit 75: Environment & Level Design

Unit 23: Game Design

Unit code	**H/616/1731**
Unit Level	**4**
Credit value	**15**

Introduction

The design of a compelling video game is a complex process. Successful games are a mix of technology, story, artwork, user interface, and more, all of which requires consideration and balance. Added to this, is the fact that a game will elicit a response in the player that can only be judged once the sum of all parts is present for the player to interact with.

Designing a compelling video game requires an understanding of the principles and practices of design, technology and interaction, developed through a systematic iterative approach that involves constant refinement based on observation and feedback.

The aim of this unit is to introduce students to the concepts, tools and techniques used to generate and document game designs, through the opportunity to develop, assess and refine prototype gameplay elements, using industry-standard tools and techniques.

On completion of this unit, students will be able to design, prototype and test game design ideas using iterative development techniques to evaluate and refine gameplay mechanisms in support of achieving specified design goals and gameplay aesthetics.

Learning Outcomes

By the end of this unit students will be able to:

1. Explore methods of idea-generation in support of game development
2. Create a game design proposal, including graphic material and documentation, in response to a brief
3. Develop a functional game prototype, through iterative testing and revision, using industry-standard tools and techniques
4. Present a functional game prototype, highlighting gameplay mechanisms, testing and development process.

Essential content

LO1 **Explore methods of idea-generation in support of game development**

Ideation:

Reverse thinking

SCAMPER

Brainstorming/Brainwriting

Mindmapping

Storyboarding

Role playing

Forced relationships

'Thinking Hats' (deBono)

Lateral thinking.

Idea development:

Mood boards

Sketching

Discussion

Stimulus

Brief

Narrative

Cultural considerations

Ethical

Research.

LO2 **Create a game design proposal, including graphic material and documentation, in response to a brief**

Analysing the brief:

Business aims

Competitors

User definition

Demographics and audience needs

Research

Client needs

Emerging technologies.

Proposal:

Platforms

Genre

Interaction mode

Hardware

Market trends

Constraints

Legal and ethical

Design Goals

Use of audio

Visual approach

Game mechanics/mechanisms

Game play mechanisms.

Narrative considerations:

Premise

Backstory

Plot

Characters.

LO3 **Develop a functional game prototype, through iterative testing and revision, using industry-standard tools and techniques**

Game design documents:

Collaborative tool

Artwork and images

Revisions and updates

Design decisions

Game engine

Diagrams

Explanations

Prototypes

Story

Characters

Level/environment design

Gameplay

Audio

User interface.

Paper-based prototype

Component prototype:

Game play mechanism tests

Vertical slice

User interface.

Testing/Evaluation:

Playtesting

Observation

User feedback

Reflection

Gameplay mechanisms versus intended outcomes

Approach to production and project management.

LO4 **Present a functional game prototype, highlighting gameplay mechanisms, testing and development process.**

Final prototype:

Core mechanics

Game mechanisms

Game play dynamics

Game play aesthetics.

Audiences:

Target market

Class

Tutor

Panel

Client

Stakeholders

Professionals

Team.

Evaluation:

User testing

User feedback

Observation

Individual

Production log

Project evaluation.

Learning Outcomes and Assessment Criteria

<table>
<tr><th>Pass</th><th>Merit</th><th>Distinction</th></tr>
<tr><td colspan="2">LO1 Explore methods of idea-generation in support of game development</td><td rowspan="5">LO1 LO2

D1 Critically evaluate own game design proposal, based on the outcome of ideation, research and analysis</td></tr>
<tr><td>P1 Discuss idea-generation techniques used by industry practitioners

P2 Evaluate factors that contribute to the generation of successful ideas</td><td>M1 Compare ideation methodologies, with regard to their potential outcomes</td></tr>
<tr><td colspan="2">LO2 Create a game design proposal, including graphic material and documentation, in response to a brief</td></tr>
<tr><td>P3 Evaluate game ideas and design considerations in response to a given brief

P4 Prepare a game design proposal and supporting documentation</td><td>M2 Justify choices outlined in game design proposal with regard to how the proposal meets the requirements of a brief</td></tr>
<tr><td colspan="2">LO3 Develop a functional game prototype, through iterative testing and revision, using industry-standard tools and techniques</td></tr>
<tr><td>P5 Create a functional game prototype using industry-standard tools and techniques

P6 Refine a game prototype through iterative testing and revision</td><td>M3 Assess how test data and user feedback inform modifications to a game prototype</td><td>LO3 LO4

D2 Critically evaluate own game prototype, with regard to the application of an iterative development process that integrates test data and feedback to refine the outcome</td></tr>
</table>

Pass	Merit	Distinction
LO4 Present a functional game prototype, highlighting gameplay mechanisms, testing and development process		
P7 Present a functional game prototype to a defined audience **P8** Discuss gameplay mechanisms, testing and the development process involved in the production of a game prototype	**M4** Evaluate a prototype game in relation to intended outcomes, based on testing and feedback	

Recommended resources

Textbooks

ADAMS, E. & DORMANS, J. (2012) *Game Mechanics: Advanced Game Design (Voices That Matter).* Berkeley: New Riders.

GIBSON, J. (2014) *Introduction to Game Design, Prototyping, and Development.* Boston: Addison Wesley.

GREGORY, J. (2014) *Game Engine Architecture.* 2nd ed. London: A K Peters/CRC Press.

KEITH, C. & SHONKWILER, G. (2017) *Gear Up!: Advanced Game Development Practices.* CreateSpace Independent Publishing Platform.

KEITH, C. (2010) *Agile Game Development with SCRUM.* Boston: Addison Wesley.

KOSTER, R. (2014) *Theory of Fun for Game Design.* Sebastopol, CA: O'Reilly Media.

MACKLIN, C. & SHARP, J. (2016) *Games, Design and Play: A Detailed Approach to Iterative Game Design.* Boston: Addison Wesley.

MADHAV, S. (2014) *Game Programming Algorithms and Techniques: A Platform-Agnostic Approach.* Boston: Addison Wesley.

ROGERS, S. (2014) *Level Up!: The Guide to Great Video Game Design.* Hoboken, NJ: John Wiley & Sons.

SCHULTZ, C.P. & BRYANT, J. (2016) *Game Testing All in One.* Herndon, VA: Mercury Learning & Information.

SYLVESTER, T. (2013) *Designing Games: A Guide to Engineering Experiences.* Sebastopol, CA: O'Reilly Media.

Websites

gamasutra.com	Gamasutra: The Art & Business of Making Games (General Reference/Research)
gamasutra.com	Gamasutra “From MDA to DDE” (Article)
gamedev.net	GameDev.net All sections (General Reference/Article/ Discussion Forum)
gamesindustry.biz	Games Industry.biz All sections (General Reference/Research)
gametutorials.com	Game Tutorials All sections (Tutorials)
mcvuk.com	MCV: The Business of Video Games (General Reference/Research)
pixelprospector.com	Pixel Prospector All sections (General Reference)
whatgamesare.com	What Games Are Blog All sections (General Reference)

Links

This unit links to the following related units:

Unit 1: Individual Project (Pearson-set)

Unit 2: Creative Media Industry

Unit 3: Professional Practice

Unit 20: 3D Modelling

Unit 21: Game Development Practices

Unit 22: Games in Context

Unit 30: Principles of Animation

Unit 31: Art Development

Unit 36: Collaborative Project (Pearson-set)

Unit 44: Advanced Game Development Studies

Unit 47: Emerging Technologies

Unit 48: Mobile Game Development

Unit 49: App Development Frameworks

Unit 55: Project Management

Unit 60: Advanced Animation

Unit 61: Advanced 3D Modelling

Unit 70: Scripting for Games

Unit 30: Principles of Animation

Unit code	**L/616/1738**
Unit Level	**4**
Credit value	**15**

Introduction

Animators are responsible for the portrayal of movement in media products, using specialist traditional and digital hardware and software packages. The scope of animation is incredibly broad from the widely-recognised character and narrative-driven films to motion information graphics that enrichen screen-based experiences. The animation industry is increasingly diversified and growing area, spanning multiple media pathways.

Animation is used in all areas of a media production; animators can bring characters to life in TV shows, create the movement of monsters in films, produce slick logos for advertising and allow players to move characters around in games. These skills can also be used in a wider field such as medical, architectural, forensic and education.

While most animation is created using specific software packages, traditional principles and skills are still used within most productions; therefore, an awareness of how these impact on an animator's role remain important.

On successful completion of this unit, students will be aware of different types of animation and how to apply them in a production. They will create animations for use within a production, presenting them in a suitable format for a client.

Learning Outcomes

By the end of this unit students will be able to:

1. Explain the principles and practices of animation
2. Create animations, using industry-standard tools and techniques, in response to a given brief
3. Present a finished animation within a defined media product, in response to a brief
4. Evaluate audience feedback, based on presentation of an animation within a defined media product.

Essential content

LO1 **Explain the principles and practices of animation**

Animation types:

2D animation

3D animation

Cartoon versus realism

Freeform animation

Animation cycles

Scripted animation

In game animation

Cut scene animations

Motion graphics.

Software:

2D software

3D software

Game engines.

Rendering:

Pre-visualisation

Pre-rendered

Real time rendering

Lighting

Effects.

12 Principles of animation:

Squash & stretch

Anticipation

Staging

Straight ahead action/Pose-to-post

Slow in/Slow out

Secondary action

Timing

Exaggeration

Solid drawing

Appeal.

Rigging:

Forward Kinematics (FK)

Inverse Kinematics (IK)

Rig type

Rig limitations.

LO2 **Create animations, using industry-standard tools and techniques, in response to a given brief**

Analysing the brief:

Story/narrative

Project type

Animation type

Aims/objectives.

Software:

2D software

3D software

Game engines.

Planning:

Storyboards

Animatic

Performance considerations

Timescales

Testing

Contingency.

Production:

Pipeline requirements

Rigging

Body mechanics

Keyframes

Inbetweens

Motion graphs

Camera position

Timing

Posing

Acting

Frame rates

Previews

Export formats

Resolution.

LO3 **Present a finished animation within a defined media product, in response to a brief**

Media product:

TV/Film

Presentation/Infographic

Website

Mobile app

Game

Advertisement.

Presentation requirements:

Scene set-up

Lighting

Compositing

Rendering

Editing.

Output:

Format

Resolution

Exporting

Playback.

Audience

Accessibility

Delivery method

Aesthetic quality

LO4 **Evaluate audience feedback, based on presentation of an animation within a defined media product**

Media product:

Technical execution

Client requirements.

Audience Feedback:

Methodologies

Quantitative versus qualitative

Discussion/focus groups

Questionnaire

Observation

Interview.

Learning Outcomes and Assessment Criteria

<table>
<tr><th>Pass</th><th>Merit</th><th>Distinction</th></tr>
<tr><td colspan="2">LO1 Explain the principles and practices of animation</td><td rowspan="5">LO1 LO2

D1 Analyse test animations, based on the application of principles of animation, identifying areas for further development</td></tr>
<tr><td>P1 Discuss the 12 principles of animation and their application within creative media production

P2 Explain the different types of animation and the software that may be used in their production</td><td>M1 Evaluate different types of animation in relation to their application in specific media contexts</td></tr>
<tr><td colspan="2">LO2 Create animations, using industry-standard tools and techniques, in response to a given brief</td></tr>
<tr><td>P3 Evaluate a given brief to determine the requirements for an animation sequence

P4 Develop test animations using industry-standard tools and techniques</td><td>M2 Evaluate animations, through iterative testing, to refine and develop in relation to a given brief</td></tr>
<tr><td colspan="2">LO3 Present a finished animation, within a defined media product, in response to a brief</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>P5 Analyse media product requirements to define the parameters for final animations

P6 Present finished animations, in a format suitable for the intended media product</td><td>M3 Justify the animation approach, with regard to its suitability for integration into a defined media product</td><td>LO3 LO4

D2 Critically evaluate animation output and audience feedback, to highlight how an animated sequence enhances a defined media product</td></tr>
<tr><td colspan="2">LO4 Evaluate audience feedback, based on presentation of an animation within a defined media product</td></tr>
<tr><td>P7 Use industry-standard methods to gather audience feedback, following a presentation

P8 Analyse audience feedback to the presentation of a media product with animation</td><td>M4 Reflect on issues from audience feedback to identify areas of good practice and areas for improvement</td></tr>
</table>

Recommended resources

Textbooks

BEIMAN, N. & JOHNSTON, L. (2010) *Animated Performance: Bringing Imaginary Animal, Human and Fantasy Characters to Life*. London: AVA publishing.

BLAZER, L. (2015) *Animated Storytelling: Simple Steps for Creating Animation and Motion Graphics.* Berkeley: Peachpit Press.

LORD, P. & SIBLEY, B. (2004) *Cracking Animation: The Aardman Book of 3-D Animation*. 2nd ed. London: Thames & Hudson.

MITCHELL, B. (2016) *Independent Animation: Developing, Producing and Distributing your animated films.* Boca Raton, FL: CRC Press.

STANCHFIELD, W. & HAHN, D. (2009) *Drawn to Life: 20 Golden Years of Disney Master Classes: The Walk Stanchfield Lectures – Volume 1.* Boca Raton, FL: QMP/CRC Press.

WHITTAKER, H. & HALAS, J. (2009) *Timing for Animation.* 2nd ed. New York: Focal Press.

WILLIAMS, R. (2009) *The Animators Survival Kit*. London: Faber & Faber

Websites

animationmeat.com	Animation Meat All sections (Research)
animatorisland.com	Animator Island 51-great-animation-exercises-to-master (Tutorials)
cartoonbrew.com	Cartoon Brew All sections (Animation news/Discussion Forum)
11secondclub.com	The 11 second club All sections (Tutorials)
3dtotal.com	3D Total All sections (Industry news/Tutorials/General Reference)

Links

This unit links to the following related units:

Unit 7: Film & Television Practices

Unit 9: Light & Sound

Unit 16: Motion Graphics Practices

Unit 17: Visual Effects & Motion Graphics Cultures

Unit 19: Visual Effects Practices

Unit 26: Editing for Film and Television

Unit 27: Storyboarding

Unit 31: Art Development

Unit 34: Principles of Photography

Unit 39: Advanced Television Studies

Unit 42: Advanced Motion Graphics Studies

Unit 43: Advanced Visual Effects Studies

Unit 46: Advanced Rendering & Visualisation

Unit 47: Emerging Technologies

Unit 52: Web Development Frameworks

Unit 60: Advanced Animation

Unit 61: Advanced 3D Modelling

Unit 64: Advanced Compositing for Film & Television

Unit 67: Scriptwriting for Film & Television

Unit 68: Narrative

Unit 36: Collaborative Project (Pearson-set)

Unit code	**D/616/1744**
Unit type	**Core**
Unit level	**5**
Credit value	**15**

Introduction

This unit is designed to develop interdisciplinary collaboration and creative engagement following a Pearson-set theme. The unit focuses upon the students' engagement with the wider community and provides a platform to explore collaborative working practices within creative media production. Students will have the opportunity to work in small groups, work with external partners or collaborate as an entire cohort to undertake creative media production work as part of a shared experience.

Wherever possible, the unit will simulate working studio conditions, which will enhance and develop professional industry skills and practice.

The ability to define, plan and undertake a project are critical skills throughout the various roles within the creative industries. Identifying appropriate information and analysing this to formulate clear solutions is required to underpin many of the processes that inform applied practice.

***Please refer to the accompanying Pearson-set Assignment Guide and the Theme Release document for further support and guidance on the delivery of the Pearson-set unit.**

Learning Outcomes

By the end of this unit students will be able to:

1. Explain the importance of collaboration as part of creative media production
2. Plan and manage a collaborative project, based on a defined theme
3. Develop a finished creative media production, through collaborative working practices
4. Analyse the results of a collaborative process, highlighting the challenges and benefits in relation to project outcomes.

Essential content

LO1 **Explain the importance of collaboration as part of creative media production**

Collaborative Practice:

Roles

Responsibilities.

Collaborative Workflows:

Studio practices

Remote working.

LO2 **Plan and manage a collaborative project, based on a defined theme**

Collaborative research

Analysing research

Developing a brief:

Objectives

Defining roles & responsibilities.

Project planning:

Deadlines

Milestones

Communication

Deliverables.

Project management:

Methodologies

Recording/Reporting

Resources/Assets.

LO3 **Develop a finished creative media production, through collaborative working practices**

Defining outputs:

Output relationship to deliverables

Format

Production.

Marketing/communication:

Promoting

Presenting

Pitching.

LO4 **Analyse the results of a collaborative process, highlighting the challenges and benefits in relation to project outcomes**

Reflection

Audience feedback

Collaborative review:

Individual performance

Group performance

360-degree feedback.

Learning Outcomes and Assessment Criteria

<table>
<tr><th>Pass</th><th>Merit</th><th>Distinction</th></tr>
<tr><td colspan="2">LO1 Explain the importance of collaboration as part of creative media production</td><td rowspan="5">LO1 LO2

D1 Critically evaluate a defined theme in support of a collaborative strategy and plan for creative media production</td></tr>
<tr><td>P1 Discuss the roles and responsibilities of members of a collaborative team in creative media production

P2 Identify the collaborative workflows associated with a specific type of creative media production</td><td>M1 Compare the potential benefits of studio-based or remote collaboration</td></tr>
<tr><td colspan="2">LO2 Plan and manage a collaborative project, based on a defined theme</td></tr>
<tr><td>P3 Undertake individual and collaborative research to define the scope of a project

P4 Develop a collaborative project brief based on a defined theme</td><td>M2 Use industry-standard project management to record and report on project progress</td></tr>
<tr><td colspan="2">LO3 Develop a finished creative media production, through collaborative working practices</td></tr>
<tr><td>P5 Produce creative media production deliverables, in response to a brief, to meet deadlines

P6 Present a finished creative media production project, highlighting the collaborative process</td><td>M3 Outline a marketing/promotion strategy in support of a creative media production</td><td>D2 Critically analyse the relationship between creative media production output and marketing, to meet the expectations of a defined audience</td></tr>
<tr><td colspan="2">LO4 Analyse the results of a collaborative process, highlighting the challenges and benefits in relation to project outcomes</td><td rowspan="2">D3 Use audience feedback, personal reflection, and 360-degree feedback in examining the effectiveness of collaborative process</td></tr>
<tr><td>P7 Evaluate audience feedback, in response to a creative media production

P8 Discuss examples of good practice and areas for improvement in a collaborative creative media production</td><td>M4 Critically evaluate 360-degree feedback of own and collaborator performance</td></tr>
</table>

Recommended resources

Textbooks

BANFIELD, R. (2017) *Product Leadership: How Top Product Managers Launch Awesome Products and Build Successful Teams*. Sebastopol, CA: O'Reilly Media.

FREEMAN, M. (2016) *Industrial Approaches to Media: A Methodological Gateway to Industry Studies.* London: Palgrave Macmillan.

HARRIN, E. (2016) *Collaboration Tools for Project Managers: How to Choose, Get Started and Collaborate with Technology.* Newton Square, PA: Project Management Institute.

LÖWGREN, J. (2013) *Collaborative Media: Production, Consumption, and Design Interventions.* Cambridge, MA: The MIT Press.

TRAVIS, L. (2017) *Customer-driven Playbook.* Sebastopol, CA: O'Reilly Media.

Websites

basecamp.com	Basecamp All sections (Development Tool)
slack.com	Slack All sections (Development Tool)
trello.com	Trello All sections (Development Tool)

Links

This unit links to the following related units:

Unit 1: Individual Project (Pearson-set)

Unit 2: Creative Media Industry

Unit 3: Professional Practice

Unit 4: Audio Practices

Unit 7: Film & Television Practices

Unit 10: Journalism Practices

Unit 13: Web & App Development Practices

Unit 16: Motion Graphics Practices

Unit 19: Visual Effects Practices

Unit 21: Game Development Practices

Unit 37: Personal Professional Development

Unit 38: Advanced Sound Media Studies

Unit 39: Advanced Television Studies

Unit 40: Advanced Journalism Studies

Unit 41: Advanced Web & App Development Studies

Unit 42: Advanced Motion Graphics Studies

Unit 43: Advanced Visual Effects Studies

Unit 44: Advanced Game Development Studies

Unit 55: Project Management

Unit 37: Personal Professional Development

Unit code	**H/616/1745**
Unit Level	**5**
Credit value	**15**

Introduction

An essential aspect of professional practice is in-depth objective analysis of one's own strengths and weaknesses. This, combined with a clear strategy for presenting one's skills and abilities to potential employers or clients, is critical to future success.

The aim of this unit is to support students in making the transition from study to employment or freelance work. In previous study *(Unit 3: Professional Practice)* students explored the broad areas of professional practice within creative media production, and preparing for employment. Building upon this, students will now apply their skills and knowledge to the development of a strategy for their future career, whether in employment or self-employed.

Topics included within this unit are: career plans, curriculum vitae (CV) writing, interview skills, self-promotional material, legal frameworks, business planning and social and professional networks.

Learning Outcomes

By the end of this unit students will be able to:

1. Evaluate own skills and abilities in support of future employment or self-employment in creative media production
2. Prepare a business plan, reflecting business structure, legal frameworks and legislation related to creative media production
3. Develop material to support future employment or self-employment
4. Present own skills, abilities and work to a potential employer or client.

Essential content

LO1 **Evaluate own skills and abilities in support of future employment or self-employment in creative media production**

Personal Development Plan:

Career aspirations

Mapping own skills to specific job roles

Career trends

Career options.

Work shadowing or placement

LO2 **Develop material to support future employment or self-employment**

Portfolio:

Print

Digital

Still/moving.

Social Networking

Professional networking:

Portfolio sites

Business/social networks

Blogging.

Marketing material

Competitions

Contacting employers:

CV

Letters of application

Artist/Personal statement.

LO3 **Prepare a business plan, reflecting business structure, legal frameworks and legislation related to creative media production**

Small business models:

Mission statement

Market needs

Market approach

USP

Costing of creative work

Cash flow forecast.

Arts/Creative professional bodies:

Membership

Grants

Residencies/Internships.

Tax liabilities:

Tax/VAT

Self-employed/Sole trader.

Legalities:

Public liability insurance

Professional indemnity insurance

Record keeping/Contracts

Intellectual property (e.g. copyright and licensing laws).

LO4 **Present own skills, abilities and work to a potential employer or client.**

Client interview/presentation:

Preparing for interview

'Dress for success'

Getting interview feedback.

Reflection and evaluation of own work & development

Learning Outcomes and Assessment Criteria

<table>
<tr><th>Pass</th><th>Merit</th><th>Distinction</th></tr>
<tr><td colspan="2">LO1 Evaluate own skills and abilities in support of future employment or self-employment in creative media production</td><td rowspan="5">LO1 LO2
D1 Critically evaluate own skills, abilities and work to develop material for seeking employment, highlighting how different materials may support employment or self-employment</td></tr>
<tr><td>P1 Evaluate own skills and knowledge in relation to creative media production
P2 Describe career opportunities related to own skills and knowledge in creative media production</td><td>M1 Compare own development needs for employment against those required for self-employment</td></tr>
<tr><td colspan="2">LO2 Develop material to support future employment or self-employment</td></tr>
<tr><td>P3 Evaluate own work to inform the selection of material for a portfolio/showreel, curriculum vitae and cover letter
P4 Prepare a portfolio of material to be used in seeking employment</td><td>M2 Justify the selection of material for a portfolio/showreel and curriculum vitae, in relation to how they will support future employment prospects</td></tr>
<tr><td colspan="2">LO3 Prepare a business plan, reflecting business structure, legal frameworks and legislation related to creative media production</td></tr>
<tr><td>P5 Discuss the business structures, legal frameworks and legislation associated with creative media production
P6 Develop a business plan for a small creative media production company</td><td>M3 Integrate market research and industry trends into a business plan</td><td>D2 Critically analyse the business requirements for a small company working in creative media production, to make the case for investment in a business plan</td></tr>
</table>

Pass	Merit	Distinction
LO4 Present own skills, abilities and work to a potential employer or client		**D3** Critically evaluate comments from a potential employer or client, to improve presentation techniques and materials
P7 Reflect on own skills and work, to prepare a presentation to a potential employer or client **P8** Present own work, skills and abilities to a potential employer or client	**M4** Justify the selection of work for presentation to a potential employer or client, in regard to their ability to show own skills and abilities	

Recommended resources

Textbooks

COTTRELL, S. (2015) *Skills for Success: Personal Development and Employability.* 3rd ed. London: Palgrave.

GREGORY, G. (2008) *Careers in Media and Film: The Essential Guide.* London: SAGE Publications Ltd.

HESMONDHALGH, D. (2012) *The Cultural Industries.* 3rd ed. London: SAGE Publications Ltd.

HOPE, S. (2015) *Media Career Guide: Preparing for Jobs in the 21st Century.* 10th ed. Boston: Bedford/St. Martin's.

HOWKINS, J. (2013) *The Creative Economy: How People Make Money from Ideas* 2nd ed. London: Penguin.

Websites

mindtools.com	Mind Tools All sections (General Reference)
nationalcareersservice.direct.gov.uk	National Career Service All sections (Development Tool)
skillsyouneed.com	Skills You Need All sections (General Reference)

Links

This unit links to the following related units:

Unit 3: Professional Practice

Unit 36: Collaborative Project (Pearson-set)

Unit 62: Business Practices for Creative Media Production

Unit 65: Marketing & Promotion

Unit 66: Branding & Identity

Unit 69: Social Media Practice

Unit 71: Work-based Learning

Unit 43: Advanced Visual Effects Studies

Unit code	**T/616/1751**
Unit Level	**5**
Credit value	**30**

Introduction

VFX is a technically and creatively demanding discipline and it is impossible for one artist to know and do everything that encompasses VFX production. Industry demands that the VFX artist should have a strong knowledge across many areas of production, but, crucially, should hold an advanced set of skills within a specialised field.

This unit introduces students to a wide range of core, advanced techniques and concepts, supporting them in making well-informed decisions about the specialist direction they want to pursue. The industry pipeline provides the best model to demonstrate where and how different specialists operate, and students are given the opportunity to work in teams that complement each other, to simulate this real-world scenario. Critically, the unit is designed to provide a support structure for students to independently explore and develop those areas within VFX that they have identified as their specialism.

On successful completion of this unit, students will have a thorough understanding of the specialist roles and processes, inter-dependencies and team formats involved in producing VFX material. They will be able to plan and produce or delegate the production of complex VFX shots, integrating their own assets with those acquired elsewhere to achieve a seamless and technically competent final product.

This unit is intended to provide Centres with a framework to support students to develop in-depth knowledge and skills associated with the specialist subject. As a 30-credit unit, delivered over an extended period, Centres will have the option to provide consideration of broad areas of the subject followed by greater specialisation, based on either local needs or student areas of interest.

Learning Outcomes

By the end of this unit students will be able to:

1. Discuss the roles and responsibilities associated with collaborative production of VFX
2. Analyse a brief to define aims and objectives, shots, assets, and production pipeline required to deliver a completed VFX sequence
3. Use industry-standard tools and processes to manage the collaborative production pipeline for a VFX sequence
4. Present a completed VFX sequence developed through a collaborative production process, responding to audience feedback.

Essential content

LO1 **Discuss the roles and responsibilities associated with a collaborative VFX production process**

Roles:

Concept artist

Compositor

Layout artist (3D computer animation)

Lighting technical director

Match move artist

Matte painter

Producer

Rotoscoper

Runner

Technical director

VFX supervisor.

Collaboration:

Organisation

Psychological forces

Behaviour

Performance

Responsibility

Team dynamics.

Process:

Pre-production: Research & development, storyboarding, pre-visualisation (sketching, 2D/3D mock-ups, animatics, reference gathering, pipeline testing)

Production: Filming, Light Detection and Ranging (LIDAR), High Dynamic Range Image (HDRI) capture, performance capture, CGI modelling/texturing, digital sculpting, particle effects, cloth and hair simulations, pyrotechnic and fluid simulations, look development

Post-production: Rigging, tracking & match move, VFX painting, texturing, grading, rotoscoping, animation, plate prep, element shoots/renders, lighting & rendering, effects animation, compositing.

LO2 **Analyse a brief to define aims and objectives, shots, assets, and production pipeline required to deliver a completed VFX sequence**

Brief:

Aims

Objectives

Media format requirements

Genre

Assets

Shot list

Pipeline/workflow

Timeline/deadlines.

Planning:

Risk assessment

Data management

Process documentation

Version control

Budgeting

Recruiting

Scheduling.

Assets/Shots:

Film shots

2D assets

3D assets

Sound assets: Foley, music

Shooting schedule.

LO3 **Use industry-standard tools and processes to manage the collaborative production pipeline for a VFX sequence**

Project management:

Agile/SCRUM

GANTT charts.

Budget management:

Time tracking

Cost tracking.

Team management:

Communication: Asynchronous, real-time

Virtual collaboration tools.

Process/Pipeline management:

Dailies/Rushes

Backups

Versioning.

LO4 **Present a completed VFX sequence developed through a collaborative production process, responding to audience feedback**

Presentation:

Media format

Output quality

Technical execution

Presentation type: Viewing/Screening, demonstration, user interaction.

Gathering Feedback:

Discussion

Focus group

Interview

Survey

User-testing.

Learning Outcomes and Assessment Criteria

<table>
<tr><th>Pass</th><th>Merit</th><th>Distinction</th></tr>
<tr><td colspan="2">LO1 Discuss the roles and responsibilities associated with collaborative production of VFX</td><td rowspan="2">D1 Critically analyse the requirements of a collaborative VFX process, highlighting how team dynamics may affect production</td></tr>
<tr><td>P1 Explain the roles within a collaborative VFX production team

P2 Evaluate the relationship between roles and responsibilities within a VFX production team</td><td>M1 Assess the ways that different roles work together at stages of the VFX production pipeline</td></tr>
<tr><td colspan="2">LO2 Analyse a brief to define aims and objectives, shots, assets, and production pipeline required to deliver a completed VFX sequence</td><td rowspan="4">LO2 LO3

D2 Critically evaluate the requirements of a given brief, to define a collaborative production pipeline for a VFX sequence</td></tr>
<tr><td>P3 Analyse a given brief to determine the aims and objectives of a required VFX sequence

P4 Develop a production plan, highlighting the required shots, assets and scheduling required</td><td>M2 Asses the shots required and schedule to prepare a risk assessment for a VFX production process</td></tr>
<tr><td colspan="2">LO3 Use industry-standard tools and processes to manage the collaborative production pipeline for a VFX sequence</td></tr>
<tr><td>P5 Develop a VFX sequence using industry-standard tools and techniques

P6 Manage a collaborative VFX development process, applying standard project management systems</td><td>M3 Evaluate the collaborative development process through time and budget tracking</td></tr>
</table>

Pass	Merit	Distinction
LO4 Present a completed VFX sequence developed through a collaborative production process, responding to audience feedback		**D3** Critically evaluate how changes to the development team and pipeline would improve the development process
P7 Present a final VFX sequence, gathering audience feedback **P8** Analyse audience feedback, highlighting areas of good practice and for future improvement	**M4** Evaluate the collaborative development process used in VFX production	

Recommended resources

Textbooks

BRINKMAN, R. (2008) *The Art and Science of Digital Compositing: Techniques for Visual Effects, Animation and Motion Graphics*. Burlington, MA: Morgan Kaufman Publishing.

FINANCE, C. & ZWERMAN, S. (2009) *The Visual Effects Producer: Understanding the Art and Business of VFX.* New York: Focal Press.

McCLEAN, S. (2008) *Digital Storytelling: The Narrative Power of Visual Effects.* Cambridge, MA: MIT Press.

MITCHELL, M. (2004) *Visual Effects for Film and Television.* New York: Focal Press.

PRINCE, S. (2011) *Digital Visual Effects in Cinema: The Seduction of Reality.* New Brunswick, NJ: Rutgers University Press.

ZWERMAN, S. & OKUN, J. (2014) *The VES Handbook of Visual Effects: Industry-standard VFX Practices and Procedures.* New York: Focal Press.

Websites

Artofvfx.com	Art of VFX All sections (General Reference)
Awn.com	Animation World Network VFX World Magazine (Magazine)
creativebloq.com	Creative Bloq 3D World Magazine (Magazine)
visualeffectssociety.com	Visual Effects Society All sections (General reference)

Links

This unit links to the following related units:

Unit 7: Film & Television Practices

Unit 8: Film Studies

Unit 16: Motion Graphics Practices

Unit 17: Visual Effects & Motion Graphics Cultures

Unit 20: 3D Modelling

Unit 26: Editing for Film and Television

Unit 27: Storyboarding

Unit 30: Principles of Animation

Unit 31: Art Development

Unit 39: Advanced Television Studies

Unit 46: Advanced Rendering & Visualisation

Unit 47: Emerging Technologies

Unit 60: Advanced Animation

Unit 61: Advanced 3D Modelling

Unit 64: Advanced Compositing for Film & Television

Unit 68: Narrative

Unit 60: Advanced Animation

Unit code	**J/616/1768**
Unit Level	**5**
Credit value	**15**

Introduction

Animation, once a niche genre, is now a mainstream practice utilised in every aspect of the media industry. The need for animation, in feature films, television, commercials, video games and other formats, requires highly trained professionals to undertake a wide variety of animation projects. With the rapid development of high-powered and low-cost computer hardware, the capabilities of animation have increased and, with this, the opportunities and challenges for animators.

Animators need to be able to portray convincing performances through acting, body language, staging, facial animation and many other factors that can impact on the quality and appeal of the final output.

Through this unit, students will learn the process of animating characters and scenes. They will explore the development of body and facial animations of characters for cinema, television and entertainment. Students will engage with the different processes and stages of creating animations.

Learning Outcomes

By the end of this unit students will be able to:

1. Analyse a client brief to define an animation strategy for a given media format
2. Use industry-standard tools and techniques to develop animation-ready characters in support of an animation strategy
3. Create animated characters that express emotion through facial expression and body language, in support of an animation strategy
4. Present finished animations, for a specific media production, gathering audience feedback and comment.

Essential content

LO1 **Analyse a client brief to define an animation strategy for a given media format**

Client requirements:

Project type

Game

Advertising

Film/Television

Journalism

Infographic

Mobile apps

Schedule

Budget.

Project process:

Pre-production

Production

Post-production.

Media Type:

Games: Console, Personal Computer (PC), mobile, VR/AR

Advertising: Film/TV commercials, online

Film/Television: Animation, motion graphics, visual effects

Journalism: Television, online

Infographic.

LO2 **Use industry-standard tools and techniques to develop animation-ready characters in support of an animation strategy**

Character set-up:

Human and animal anatomy

Rigs

Bone Chain construction (e.g. FK, IK, Stretch, Twist)

Controls and constraints

Attributes and custom parameters

Scripts for rigging

Corporal rigging

Facial rigging

Skin

Skin wrap

Muscles

Interfaces

Morph targets

Weighting

Binding.

Animation:

Key frames

Body and facial expression

Timing

References

Storyboards

3D layout

Poses: Body, facial

Lip sync

Cloth

Hair

Anatomy.

Motion capture:

Motion capture types

Software

Cameras

Sensors

Set-up

Character animations.

Rotoscoping:

Scales

Images

Live action

Scanner

Acetates

Photography

Computer

Print.

Post-production:

Effects

Physics and dynamics

Editing

Rendering.

LO3 **Create animated characters that express emotion through facial expression and body language, in support of an animation strategy**

Characters:

Body and facial language

Poses

Takes

Body animations

Facial animations

Lip Sync

Layers

Blend trees.

Acting:

Emotion

Body language

Facial expressions

Hand poses

Secondary actions

Text and subtext

Staging

Lip sync

Dialogue creation

Beats

Contrast

Body mechanics.

Assets and scenes:

Lighting

Materials

Textures

Environment.

LO4 **Present finished animations, for a specific media production, gathering audience feedback and comment**

Present:

Aesthetic quality

Target audiences

Format

Resolution.

Production:

Cameras

Shots

Sequences

Framing

Lens

Angles and movements

Styles and genre

Field of view (FOV)

Depth of field (DOF)

Rendering.

Output:

Exporting

File

Feedback

Testing

Sign off.

Audience feedback:

Q&A

Survey/Questionnaire

Observation

Focus group.

Learning Outcomes and Assessment Criteria

<table>
<tr><th>Pass</th><th>Merit</th><th>Distinction</th></tr>
<tr><td colspan="2">LO1 Analyse a client brief to define an animation strategy for a given media format</td><td rowspan="2">D1 Critically evaluate a client brief to develop an animation strategy that addresses client needs through a proposed animation for a target audience</td></tr>
<tr><td>P1 Analyse a brief to establish project parameters for an animation

P2 Define an animation strategy, recognising development phases, resources and client requirements</td><td>M1 Critically analyse animation strategy requirements for different media types, related to a given brief</td></tr>
<tr><td colspan="2">LO2 Use industry-standard tools and techniques to develop animation-ready characters in support of an animation strategy</td><td rowspan="5">LO2 LO3

D2 Develop animations that reflect a critical analysis of human or animal body mechanics and facial expression, to create emotion through rigged characters</td></tr>
<tr><td>P3 Compile assets required to develop animations, in response to a brief

P4 Rig characters and apply assets for an animation, based on the requirements of an animation strategy</td><td>M2 Critically evaluate own animation-ready characters through an iterative process of testing and revision</td></tr>
<tr><td colspan="2">LO3 Create animated characters that express emotion through facial expression and body language, in support of an animation strategy</td></tr>
<tr><td>P5 Evaluate facial expressions and body language to refine animated characters

P6 Produce animated characters that express emotion</td><td>M3 Evaluate animated characters to modify rigs and poses to enhance an animated character’s ability to express emotion</td></tr>
</table>

Pass	Merit	Distinction
LO4 Present finished animations, for a specific media production, gathering audience feedback and comment		**D3** Justify own finished animation output, based on critical evaluation of the way that the final media production meets client needs for a target audience
P7 Apply post-production techniques to integrate finished animations with a specific media production **P8** Present finished animations for a specific media production and gather audience feedback	**M4** Analyse audience feedback to identify areas of good practice and areas for further development	

Recommended resources

Textbooks

BLAIR, P. (1989) *Cartooning Animation 1 with Preston Blair: Learn How to Draw Animated Cartoons.* London: Walter Foster Publishing.

LAYBOURNE, K. (1998) *The Animation Book.* New York: Crown.

MAESTRI, G. (1999) *Digital Character Animation.* New Providence, NJ: N.R.P. Publishing.

SIBLEY, B. & LORD, P. (1999) *Cracking Animation: The Aardman Book of 3D Animation.* London: Thames and Hudson Ltd.

SUPPA, R. (2007) *Thinking Animation: Bridging the Gap between 2D and CG.* Independence, KY: Cengage Learning.

THOMAS, F. & JOHNSTON, O. (1997*) The Illusion of Life.* New York: Disney Editions.

WHITAKER, H. & HALAS, J. (2000) *Timing for Animation.* New York: Focal Press.

WILLIAMS, R. (2013) *The Animator's Survival Kit.* New York: Faber & Faber

WINDER, C. & DOWLATABADI, Z. (2011) *Producing Animation.* New York: Focal Press.

Websites

animatedviews.com	Animated Views All sections (General Reference)
cgchannel.com	CG Channel All sections (General Reference)
cgsociety.org	CG Society All sections (General Reference)
3dtotal.com	3D Total (General Reference)

Links

This unit links to the following related units:

Unit 7: Film & Television Practices

Unit 9: Light & Sound

Unit 16: Motion Graphics Practices

Unit 19: Visual Effects Practices

Unit 20: 3D Modelling

Unit 21: Game Development Practices

Unit 27: Storyboarding

Unit 30: Principles of Animation

Unit 31: Art Development

Unit 37: Personal Professional Developments

Unit 39: Advanced Television Studies

Unit 42: Advanced Motion Graphics Studies

Unit 43: Advanced Visual Effects Studies

Unit 44: Advanced Game Development Studies

Unit 46: Advanced Rendering & Visualisation

Unit 48: Mobile Game Development

Unit 60: Advanced Animation

Unit 61: Advanced 3D Modelling

Unit 75: Environment & Level Design

Unit 61: Advanced 3D Modelling

Unit code	**L/616/1769**
Unit Level	**5**
Credit value	**15**

Introduction

The role of 3D modelling within the creative industries has grown tremendously, to the point where computer-generated characters and objects are now used in a broad section of the industry. Whether as a photorealistic object in an advertising poster, or a fully animated character in a feature film, a videogame or virtual reality application, the need for accurate 3D models continues to expand.

To be successful and effective in the production of 3D models requires a range of knowledge and skills. Beyond the basic ability to use industry-standard tools and software, there is a need to understand the physical properties of real-world objects and the more complex characteristics of human or animal anatomy.

Through this unit, students will develop a more detailed understanding of the way in which 3D models are developed and deployed. Building upon skills developed in related units, they will construct complex models, assets, and characters, applying materials and textures that will be required in later stages of the production pipeline.

Learning Outcomes

1. Discuss the characteristics of assets, human and animal forms and how they are modelled in 3D software
2. Use industry-standard tools and techniques to model assets and characters for use in creative media productions, in response to a given brief
3. Apply lighting, materials, textures and shaders to 3D models in preparation for rendering, in response to a given brief
4. Present 3D modelled assets and characters, output in a format suitable to a final media production, based on a given brief.

Essential content

LO1 **Discuss the characteristics of assets, human and animal forms and how they are modelled in 3D software**

Characters

Proportions

Size and shape

Sex

Gender

Hair/Fur

Facial features

Reference Plates

Anatomy

Human

Body structure

Physical constraints

Skeletal structures

Muscles & muscle groups

Animals

Body structures

Physical constraints

Skeletal structures

Muscles & muscle groups

Skin

Colouration & discolouration

Elasticity

Assets

Type

Buildings

Trees, plants

Vehicles

Other

Characteristics

Scale

Material

Use

Fully-modelled, immersive

Background/matte

LO2 **Use industry-standard tools and techniques to model assets and characters for use in creative media productions, in response to a given brief**

Polygon modelling

Box modelling

Edge extend

Symmetry

Splines

Compound objects

Vertex

Edge flow

Polygon

Polygon count

Topology

2D base mesh

Surface modelling

NURBS

Edges

Patching

Details

Solid Modelling

Constructive and solid geometry

Surface mesh

Sweeping

Parametric and feature-based modelling

Boolean operations

Traditional sculpting

Materials

Brushes

Wooden tools

Metal tools

Clay

Digital sculpting

3D characters sculpting

Retopology

Hard surface and organic modelling

Cartoon characters

Creation high resolution characters

Fur and hair

Levels of Detail

Use of Alphas and curves

Dynamic geometry

Posing

Cloth sculpting

Workflow

3D print

CAD/CAM

Reference

Splines

NURBS

Patching

LO3 **Apply lighting, materials, textures and shaders to 3D models in preparation for rendering, in response to a given brief**

Lighting types

Point

Omni

Directional

Spot

Area

Shadows

Ambient occlusion

Global illumination

Sub-surface scattering

Materials and shaders

UV mapping techniques

Cel shading

Standard

DirectX

Procedural shaders

Render passes

Textures

Diffuse

Normal

Specular

Metal

Roughness

Displacement

Bump mapping

Height

Alpha

Resolution

Projection textures

Texture painting

Tile Textures

LO4 **Present 3D modelled assets and characters, output in a format suitable to a final media production, based on a given brief**

Output

Format

Resolution

Scales

Export and rendering

Model testing

Asset management and storage

Backup

Transfer

Media production types

Cinema

Television

Games

PC

Console

Mobile

Online

Print

News/infographics

Emerging technologies (e.g. virtual reality, augmented reality)

Learning Outcomes and Assessment Criteria

<table>
<tr><th>Pass</th><th>Merit</th><th>Distinction</th></tr>
<tr><td colspan="2">LO1 Discuss the characteristics of assets, human and animal forms and how they are modelled in 3D software</td><td rowspan="3">D1 Critically evaluate the physical characteristics of surface and underlying structure, in human and animal forms, to define the features that may be modelled</td></tr>
<tr><td>P1 Explain the features and characteristics associated with human and creature forms, required for 3D modelling

P2 Discuss the physical characteristics of buildings and other assets that may be used in 3D models for creative media productions</td><td>M1 Compare the characteristics of human and animal forms with those of other assets, highlighting the different approaches they require in 3D modelling</td></tr>
<tr><td colspan="2">LO2 Use industry-standard tools and techniques to model assets and characters for use in creative media productions, in response to a given brief</td></tr>
<tr><td>P3 Evaluate a given brief to determine the assets and characters required for a creative media production

P4 Create 3D modelled assets and characters, using industry-standard tools and techniques</td><td>M2 Justify the modelling approach used to generate 3D assets and characters, based on their use in a specific creative media production</td><td rowspan="3">LO2 LO3

D2 Critically analyse a given brief to define the modelling approach, materials and lighting required for a defined media production output</td></tr>
<tr><td colspan="2">LO3 Apply lighting, materials, textures and shaders to 3D models in preparation for rendering, in response to a given brief</td></tr>
<tr><td>P5 Apply UV mapping techniques and develop model projections to extract bitmaps for characters and assets

P6 Develop lighting set-ups for 3D modelled assets and characters</td><td>M3 Evaluate 3D models, through test renderings, to iteratively refine models, textures, shaders and lighting</td></tr>
</table>

Pass	Merit	Distinction
LO4 Present 3D modelled assets and characters, output in a format suitable to a final media production, based on a given brief		**D3** Critically evaluate the final output of 3D modelled assets and characters, with regard to their use in a defined media production and meeting the requirements of a brief, highlighting areas for future development
P7 Evaluate media production requirements to define output parameters for 3D models and assets **P8** Present 3D modelled assets and characters for a defined media production	**M4** Justify the final output of 3D modelled assets and characters, based on how they meet the requirements of a given brief	

Recommended resources

Textbooks

JONES, P. (2016) *The Anatomy of Style: Figure Drawing Methods.* London: Korero Press.

LEGASPI, C. (2015) *Anatomy for 3D Artists: The Essential Guide for CG Professionals.* London: 3dTotal Publishing.

OSIPA, J. (2010) *Stop Staring: Facial Modelling and Animation Done Right.* Indianapolis, IN: Wiley Publishing, Inc.

PAQUETTE, A. (2009) *Computer Graphics for Artists II: Environments and Characters.* Berlin: Springer.

RATNER, P. (2009) *3-D Human Modelling and Animation.* 3rd ed. Hoboken, NJ: John Wiley & Sons.

VAUGHAN, W. (2011) *Digital Modelling.* Berkeley, CA: New Riders.

Websites

Highend3d.com	HighEnd3D All sections (General Reference/Tutorials)
hippydrome.com	Hippydrome All sections (General Reference)
3dtotal.com	3D Total All sections (Tutorials)

Links

This unit links to the following related units:

Unit 20: 3D Modelling

Unit 31: Art Development

Unit 46: Advanced Rendering & Visualisation

Unit 47: Emerging Technologies

Unit 48: Mobile Game Development

Unit 60: Advanced Animation

Unit 64: Advanced Compositing for Film & Television

Unit 75: Environment & Level Design

Unit 64: Advanced Compositing for Film & Television

Unit code	**L/616/1772**
Unit Level	**5**
Credit value	**15**

Introduction

Compositing is the process of layering, combining and merging disparately created visual elements to create the illusion of a cohesive whole. It is critical to VFX production and a large portion of time and skill in industry is dedicated to this practice. It is the stage where a shot is finalised before it is submitted for editing. Editing, in turn, involves the assembly of final shots with sound and dialogue, often from a variety of sources, into a coherent, filmic narrative or sequence. Again, the role of an editor is not simply to mechanically piece together sections of film, music and dialogue, but rather it is a practice requiring deep knowledge about viewer's perspectives, anticipation, visual rhythm and storytelling.

This unit involves the exploration of a range of digital, non-linear post-production software (compositing and editing) available for the creative enhancement of media production. Students will develop an approach that takes into consideration narrative, motive and, critically, direction, before designing practical strategies for editing and compositing.

On successful completion of this unit, students will be able to composite shots, layering and manipulating plates at an advanced level, as well as editing projects from professionally shot rushes for a director/producer, which will further help to strengthen students' experience of navigating complex relationships with stakeholders.

Learning Outcomes

By the end of this unit students will be able to:

1. Discuss the compositing techniques involved in producing high-end VFX shots
2. Analyse a given brief, to define a compositing strategy that ensures visual consistency across a shot-sequence
3. Use industry-standard tools and techniques to edit a composited VFX sequence
4. Evaluate a composited and edited VFX sequence, following presentation to a defined audience.

Essential content

LO1 **Discuss the compositing techniques involved in producing high-end VFX shots**

Principles:

Foundation

Context

Motive

Colour Space

Dynamic range

Format.

Technical deconstruction:

Layering versus nodes

Types of assets/plates

Mattes and roto

Camera matching

Tracking

Stereoscopy

Input/output

VFX-CGI

VFX-2D & 3D

Physical

CG lighting

Colour correction

Green screen

Keying.

LO2 **Analyse a given brief, to define a compositing strategy that ensures visual consistency across a shot-sequence**

Strategy:

Goals and objectives

Infrastructure

File management

Resolution

Frame rate

Aspect ratios

Limitations

Risk assessment

Technology

Software

Team.

Development:

Rushes

Assets/plates

2D, 2.5D, 3D

Interpreting Alpha

High Dynamic Range (HDR)

Bit depth

Channels

Gamma

Mattes

Keying

Basic math operation

Blending modes

Filters

Animation

Tracking.

LO3 **Use industry-standard tools and techniques to edit a composited VFX sequence**

Principles:

Unobtrusive art

Narrative

Immersion

Segmentation

Continuity

Influence.

Terms and Techniques:

Cuts: Jump cut, L & J cut, cutaway, match cut, smash cut

Parallel editing (cross cutting)

Montage

One shot

Overlaps

Over shoot

Tilt & pan

Cross dissolve

Wipes and fades

Run-in and run-out.

Implementation:

Character focus

Story

Rhythm & tempo

Contrast

Matches: Eyeline, graphic, action

Lines

Audio

Trimming

Holding.

Editing styles:

Realism

Classicism

Formalism

Context

Continuity

Montage

Elliptical.

LO4 **Evaluate a composited and edited VFX sequence, following presentation to a defined audience**

Presentation format:

Cinematic/projected

Television

PC

Mobile

Virtual reality/Augmented reality

Resolution

File format

Compression.

Technical Execution:

Continuity

Colour matching

Lighting

Audio levels.

Interpretation:

Emotion

Anticipation

Dialogue

Performance

Pacing.

Learning Outcomes and Assessment Criteria

<table>
<tr><th>Pass</th><th>Merit</th><th>Distinction</th></tr>
<tr><td colspan="2">LO1 Discuss the compositing techniques involved in producing high-end VFX shots</td><td rowspan="5">LO1 LO2

D1 Critically analyse a given brief, using precedents to support the approach to compositing of a VFX sequence</td></tr>
<tr><td>P1 Evaluate the colour space of a VFX shot

P2 Explain the compositing techniques used in a given VFX shot</td><td>M1 Compare the use of different techniques to achieve similar results in VFX shots</td></tr>
<tr><td colspan="2">LO2 Analyse a given brief, to define a compositing strategy that ensures visual consistency across a shot-sequence</td></tr>
<tr><td>P3 Analyse a given brief to identify potential risks that may impact on the compositing pipeline

P4 Show how colour correction ensures consistency in style across sequential shots</td><td>M2 Compare sequential shots to show how visual consistency may be achieved through a compositing strategy</td></tr>
<tr><td colspan="2">LO3 Use industry-standard tools and techniques to edit a composited VFX sequence</td></tr>
<tr><td>P5 Analyse shots and assets to carry out compositing of a VFX sequence

P6 Use industry-standard tools and techniques to edit a composited VFX sequence</td><td>M3 Evaluate rushes and tests of a composited VFX sequence, to refine output for editing</td><td rowspan="3">LO3 LO4

D2 Critically evaluate the impact of compositing and editing decisions on audience perception and reaction to a VFX sequence</td></tr>
<tr><td colspan="2">LO4 Evaluate a composited and edited VFX sequence, following presentation to a defined audience</td></tr>
<tr><td>P7 Present a composited and edited VFX sequence to a defined audience

P8 Review the technical execution and interpretation in a presented VFX sequence</td><td>M4 Analyse audience response to highlight areas for further development in a VFX sequence</td></tr>
</table>

Recommended resources

CABRERA, U. (2014) *Digital Painting Techniques: Volume 6*. Worcester: 3Dtotal Publishing.

FINANCE, C. (2015) *The Visual Effects Producer: Understanding the Art and Business of VFX*. New York: Focal Press.

GRESS, J. (2014) [Digital] *Visual Effects and Compositing*. Berkeley, CA: New Riders.

LANIER, L. (2017) *Advanced Visual Effects Compositing: Techniques for Working with Problematic Footage*. New York: Focal Press.

MATTINGLEY, D. (2011) *The Digital Matte Painting Handbook*. Indianapolis, IN: John Wiley & Sons.

WRIGHT, S. (2017) *Digital Compositing for Film and Video*. London: Routledge.

Websites

fxguide.com	Fxguide The Art of Deep Compositing (Online Magazine)
premiumbeat.com	The Beat Invisible VFX: The Art of Compositing (Article)

Links

This unit links to the following related units:

Unit 3: Professional Practice

Unit 7: Film & Television Practices

Unit 16: Motion Graphics Practices

Unit 19: Visual Effects Practices

Unit 20: 3D Modelling

Unit 21: Games Development Practices

Unit 26: Editing for Film and Television

Unit 27: Storyboarding

Unit 30: Principles of Animation

Unit 31: Art Development

Unit 34: Principles of Photography

Unit 39: Advanced Television Studies

Unit 42: Advanced Motion Graphics Studies

Unit 43: Advanced Visual Effects Studies

Unit 44: Advanced Game Development Studies

Unit 46: Advanced Rendering & Visualisation

Unit 60: Advanced Animation

Unit 61: Advanced 3D Modelling

Unit 74: Asset Capture & Management

Unit 75: Environment & Level Design

Unit code	**A/616/1783**
Unit Level	**5**
Credit value	**15**

Introduction

The growth in popularity, complexity and immersive narratives of modern video games means that the environment in which the gameplay occurs has become a critical part of creating an engaging experience. Specialist skills are required to develop and implement the relationship between gameplay, challenge and achievement embodied in the game levels.

Level designers are involved in all aspects of the creation of the gameplay space. They take the game designer's vision and craft the direct experience players have within an environment. As such, level designers need a skillset that encompasses initial design through to creation of game assets that a player will see within the level. To achieve immersive and compelling levels for a game requires knowledge of game design theory as well as the ability to use complex 3D software to create and implement the play space. To this is added the need to create textures and materials to apply to the 3D models, along with implementing the lighting styles for the world. All of this must work in support of the narrative and aesthetic direction that will inform the overall game experience.

Through this unit, students will develop the knowledge and skills necessary to design and develop levels for video games. Utilising digital assets, they will explore the aesthetic and technical requirements for levels and environments that enhance the user experience.

Learning Outcomes

By the end of this unit students will be able to:

1. Discuss the key principles and practices that inform level design
2. Design game levels, through an iterative design process, in response to a given brief
3. Utilise assets, materials and lighting in the development of a functioning level design prototype
4. Evaluate final level design, in support of a functioning prototype, based on testing and review.

Essential content

LO1 **Discuss the key principles and practices that inform level design**

Aesthetics:

Theme

Art style

Shape

Colour theory

Lighting

Narrative

Architecture

Environmental setting.

Game design:

Game engines

Level editors

Game platform: PC, console, mobile

Game genre

Game play: Player perspectives, difficulty, navigation, goals, reward systems, immersion, narrative, puzzles/challenges, Artificial intelligence (AI)

Game environment: Polygon limits, draw calls, frame rate, boundaries.

Precedent research:

Game designs

Game artwork

Level designs

Gameplay research

Player experiences.

LO2 **Design game levels, through an iterative design process, in response to a given brief**

Level design:

Sketching

Map making

Control systems

Achievements

Wayfinding

Navigation

Choke points

Areas of interest

Collectibles

Spawn points

Goals

Hazard

Field of View (FOV).

Game production:

White boxing

Scripting

Input devices

Triggered events

AI

Occlusion culling

Animation

Feedback

Review.

Project management:

Production schedule

Bug tracking

File names

Version control

Backup

Play testing

Feedback.

LO3 **Utilise assets, materials and lighting in the development of a functioning level design prototype**

Assets:

Limitations

Source

Asset fatigue

Importing

Scale

Prefabs

Compression.

Materials:

Physical based rendering (PBR)

Normal maps

Textures

Reflection

UV mapping

Animation

Alphas.

Lighting:

Forward lighting

Deferred lighting

Baked lights

Static objects

Point lights

Spot lights

Directional lights

Shadows

Ambient occlusion

Light probes.

LO4 **Evaluate final level design, in support of a functioning prototype, based on testing and review**

Testing:

User testing

Play testing

Stress testing

Observation.

Feedback:

Survey/questionnaire

Focus group

Interview.

Review*:*

Target market

Competition

Technical execution.

Learning Outcomes and Assessment Criteria

<table>
<tr><th>Pass</th><th>Merit</th><th>Distinction</th></tr>
<tr><td colspan="2">LO1 Discuss the key principles and practices that inform level design</td><td rowspan="2">D1 Critically analyse different game genres to identify their requirements for level designs</td></tr>
<tr><td>P1 Discuss level design practices and their impact on a player's experience

P2 Explain the way that aesthetic considerations inform level design</td><td>M1 Evaluate the relationship between level design and gameplay, based on precedent research</td></tr>
<tr><td colspan="2">LO2 Design game levels, through an iterative design process, in response to a given brief</td><td rowspan="4">LO2 LO3

D2 Critically evaluate results of playtests to identify areas for improvement and optimisation of level design, assets, materials and lighting</td></tr>
<tr><td>P3 Analyse a given brief, to define requirements for game levels

P4 Develop game levels, through an iterative process of experimentation and testing</td><td>M2 Justify proposed game levels in relation to gameplay and user experience</td></tr>
<tr><td colspan="2">LO3 Utilise assets, materials and lighting in the development of a functioning level design prototype</td></tr>
<tr><td>P5 Identify assets for chosen level design to meet the requirements of a given brief

P6 Apply assets, lighting and material in a game level, using industry-standard tools and techniques</td><td>M3 Compare the aesthetic quality of a game level and gameplay, in relation to the impact of adding assets, materials and lighting</td></tr>
<tr><td colspan="2">LO4 Evaluate final level design, in support of a functioning prototype, based on testing and review</td><td rowspan="2">D3 Critically evaluate own proposed level design prototype in relation to a target market and existing competition</td></tr>
<tr><td>P7 Undertake different forms of testing to gather feedback on level designs

P8 Analyse feedback from testing, to identify areas for further development</td><td>M4 Justify selected forms of testing, in relation to how the feedback gathered informs future development of game levels</td></tr>
</table>

Recommended resources

Textbooks

AHEARN, L. (2017) *3D Game Environments: Create Professional 3D Game Worlds.* 2nd ed. London: CRC Press.

BYRNE, E. (2005) *Game Level Design (Charles River Media Game Development).* Newton: Massachusetts: Charles River Media.

FO RSEY, J. (2013) *Aesthetics of Design*. Oxford: Oxford University Press.

KREMERS, R. (2009*) Level Design: Concept, Theory, and Practice.* 1st ed. London: A K Peters/CRC Press.

LIDWELL, W. (2010) *Universal Principles of Design, Revised and Updated: 115 Ways to Enhance Usability, Influence Perception, Increase Appeal, Make Better Design Decisions and Teach Through Design.* Beverly, MA: Rockport.

NORMAN, A.D. (2002) *The Design of Every Day Things*. New York: Basic Books.

ROGERS, S. (2014) *Level Up!: The Guide to Great Video Game Design.* 2nd ed. Hoboken, NJ: John Wiley & Sons.

TOTTEN, W. (2014) *An Architectural Approach to Level Design.* 1st ed. London: CRC Press.

Websites

creativebloq.com	Creative Bloq All sections (Tutorials/General Reference)
gamasutra.com	Gamasutra All sections (Tutorials/General Reference)
level-design.org	level-design.org All sections (General Reference/Tutorials)
worldofleveldesign.com	World of Level Design All sections (General Reference/Tutorials)
80.lv	80 Level All sections (Tutorials/General Reference)

Links

This unit links to the following related units:

Unit 20: 3D Modelling

Unit 21: Game Development Practices

Unit 22: Games in Context

Unit 23: Game Design

Unit 30: Principles of Animation

Unit 31: Art Development

Unit 44: Advanced Game Development Studies

Unit 70: Scripting for Games