

# Unit Title: **VFX Fundamentals for the Games, Animation and VFX Industries**



Unit Level:	<b>Three</b>
Guided Learning Hours:	<b>100</b>
Ofqual Unit Reference Number:	<b>K/507/3222</b>
Unit Review Date:	<b>31/07/2017</b>
Unit Sector:	<b>9.3 Media and Communication</b>

## **Unit Overview**

This module aims to provide learners with the knowledge and skills to set up a single camera shoot to acquire visual materials (elements) for visual effects projects. The curriculum will take the students through crewing, production planning, location management, health and safety, and acquiring lighting and motion references for use in post-production. The module intends to take learners through each step of a Visual Effects (VFX) 2D production pipeline, from Acquisition of live action elements through to Compositing and Colour Grading.

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## **Learning Outcomes**

### ***The learner will:***

- VFXF 1** Be able to plan, design and implement a shoot to acquire elements for a visual effect
- VFXF 2** Be able to convert acquired elements from camera to computer in preparation for compositing phase
- VFXF 3** Be able to use compositing tools and techniques to create a sequence that blends live footage with computer generated elements
- VFXF 4** Demonstrate an appropriate critical eye for detail and good aesthetic judgement
- VFXF 5** Know how to organise post production pipeline and scheduling

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## **Indicative Content**

- How to generate a production plan, form a film crew and generate a risk assessment document
- Camera, exposure and the importance of image quality in VFX
- Simple camera set up: Assembling camera systems, configuration and menus, setting exposures and focus - Shooting a series of static camera shots for use in post-production
- Principles of lenses, framing and camera motion
- Implementing lenses, framing and camera motion
- On set survey and referencing
- Introduction to character lighting, and green screen set up and lighting
- Green screen studio set up and lighting

### ***Visual Effect Compositing***

- Introduction to editing and colour management

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- How to operate the software for footage conversion and uploading elements from acquisition session to the computer - basic editing, neutral grading
- How to track a shot using motion reference from acquisition session
- Introduction to Digital Compositing
- Basic compositing and matte generation
- Green screen compositing and CGI compositing
- Introduction to green screen matte extraction and compositing
- Introduction to CGI composite

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### **Assessment**

This unit is assessed using the following assessment method:

- Asset Development Portfolio (Assessment Pack)

See the assessment section of the qualification specification and Assessment Pack for full details on the assessment.

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### **Delivery**

#### **Acquisition of Footage for Visual Effects Production**

The first part of the unit will involve teaching the Acquisition side of VFX where theoretical underpinnings of image making such as framing and composition will be delivered alongside the practical aspects of setting up and configuring cameras and lights. The theory section is essential for the students as it will introduce them to the primary aesthetic judgements necessary to achieve well composed, high quality images, which will facilitate the post production work delivered in the other part of the unit. The practical section is essential for the students in order to learn and practice with the technology, cementing the principles learnt during the theory session. The students will be also encouraged to discuss the material acquired after the camera workshops, which will develop their critical skills.

#### **Visual Effects Compositing**

This part of the unit will involve teaching the discipline of Post production and Digital Compositing. This will allow the students to make use of the elements acquired during the practical acquisition workshops and also the elements generated from the 3D Modelling and its Applications for Animation, Games and VFX 1 and 2 Unit and blend them together seamlessly as if they were shot with the same camera and under the same lighting. This part of the module will also blend theoretical principles and practical software implementation. The understanding of the core theory principles as well as the software practice will provide the students with transferrable and problem solving skills.

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## **Resources**

To shoot live action elements of sufficient quality for successful visual effects the following items will be needed:

- **Camera** - one per group (with a maximum group size of five). This can be a DSLR camera which records HD video. Certain elements, such as backgrounds can be safely shot to the on-board data card, but this is typically of insufficient quality for demanding tasks such as green screen or blue screen. Therefore it's essential that the camera is able to output high quality video via either HDMI or SDI. This output must be clean - in that there are no superimposed viewfinder icons, so that it can be plugged into an external recorder (such as the Atmos Samurai or Ninja) which can record a higher quality, lower compression image that is suitable for keying in compositing software.
- **Lenses** - there should be a range of prime (fixed focal length) lenses, in wide angle, standard and telephoto fields of view. There should be robust, heavy weight (to stop any vibration during shots) tripod with a fluid pan and tilt head.
- **Rig** - for moving camera shots that should be a rig to allow shoulder mounting of the camera, and a loupe which allows the student to put their eye to the viewfinder when the camera is within the shoulder rig.
- **Studio** - There should be studio, or room that can be used as a studio, where students can set up green screen or blue screen - and use mains powered movie lights. The ideal lighting units would be LED units, in both large 'softbox' format (for illuminating the screen) and smaller, hard lights for illuminating the subject. Alternatively, standard tungsten halogen lights should be available, with attachable softboxes or reflectors.
- **Workstation/software** - for work with visual effects software, there should be sufficient workstations for each student to be able to have one for taught sessions. This should have a good quality graphics card and monitor, and sufficient memory for efficient 3D rendering. The ideal software suite would be Nuke for compositing and Maya for 3D Computer Animation, supported by the suite of Adobe products including Photoshop, Lightroom, Premier Pro and After Effects (which has limited camera tracking and 3D Animation facilities built in). There are further specialist camera tracking plugins available for After Effects, which exceed the capabilities of the included tools.