Australian Government

Department of Education, Employment and Workplace Relations

ICAGAM410A Develop 3-D components for interactive games

Release: 1

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Modification History

Release	Comments
Release 1	This Unit first released with *ICA11 Information and Communications Technology Training Package version 1.0*

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to design and create 3-D components within a games environment.

Application of the Unit

This unit applies to concept artists, game designers, games programmers, animators and other personnel working in the game development industry.

Licensing/Regulatory Information

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement but users should confirm requirements with the relevant federal, state or territory authority.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Element	Performance Criteria
Elements describe the essential outcomes of a unit of competency.	*Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.*

Elements and Performance Criteria

1. Confirm component requirements within game context	1.1 Identify definition and purpose of ***3-D components*** with examples 1.2 Identify context of ***component design*** within game design document 1.3 Create list of required components
2. Identify component integration methods within game architecture	2.1 Discuss component ***format***, file extensions and the ramifications of choice 2.2 Establish methods of component loading and usage
3. Establish content creation pipeline	3.1 Finalise required component list 3.2 Discuss hardware and ***software*** required for the creation of 3-D components and assets 3.3 Discuss methods of file archiving and naming of components and assets 3.4 Establish deadlines for component creation
4. Integrate components for testing and analysis	4.1 Identify evaluation methods for quality assurance 4.2 Ensure that produced components meet the established quality requirements 4.3 Make changes to components as required by testing and evaluation 4.4 Submit finalised assets with archiving format outlined in assignment brief

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

- initiative and enterprise skills to:
  - create components and assets suitable for project theme
  - demonstrate creativity in the production of a consistent, repeatable style between 3-D components
- planning and organisational skills to:
  - establish clear goals and deadlines to achieve project and assignment outcomes
  - meet project deadlines and criteria
- teamwork skills to:
  - contribute as a functioning member of a productive team
  - ensure that individual assets are delivered on time
- technical skills to:
  - resolve basic hardware, software and other technical issues
  - use correct file formats and archiving procedures.

Required knowledge

- current game hardware and software products
- game-engine architecture and methods used in component importing
- processes and techniques related to:
  - creation of 3-D objects within industry standard modelling software
  - use of industry formats for the development of 3-D models and objects.

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the ability to: • generate 3-D components for games • follow a clearly defined schedule and production pipeline for assets.
Context of and specific resources for assessment	Assessment must ensure access to: • computer hardware, software, games engines and file storage • copyright and intellectual property legislation • OHS legislation and enterprise policy • appropriate learning and assessment support when required • modified equipment for people with special needs.

Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:
	• evaluation of work samples or simulated workplace activities and fault-finding exercises
	• verbal or written questioning to determine candidate's knowledge of:
	  • game-engine architecture and methods used in component importing
	  • current game hardware and software products
	• review of reports and logbooks.

Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, where appropriate. Assessment processes and techniques must be culturally appropriate, and suitable to the communication skill level, language, literacy and numeracy capacity of the candidate and the work being performed. Indigenous people and other people from a non-English speaking background may need additional support. In cases where practical assessment is used it should be

	combined with targeted questioning to assess required knowledge.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

3-D components may include:	• 3-D landscapes • buildings, walls, houses and other structures • character models • graphical user interface (GUI) widgets • items and collectables • light sources and effects • trees, shrubs and bushes • vehicles.
Component design may involve:	• development time line constraints • researching current video game products and the components implemented • limitations of available technology • using game engine or interactive media architecture.
Format may include:	• Direct X • Ogre • OpenGL • eXtensible markup language (XML).
Software may include:	• After Effects • Avid • Blender • Combustion • D2 Nuke • Digital Fusion • Final Cut Pro • Flame • Flint • Fusion • Illustrator • Inferno • Inferno • Lustre • Photoshop • Premier • Renderman

	• Shake.

Unit Sector(s)

Game development