



**Australian Government**

# **ICTGAM501 Create design concepts for digital games and 3-D media**

**Release: 1**

# ICTGAM501 Create design concepts for digital games and 3-D media

## Modification History

| Release   | Comments                                                                                                     |
|-----------|--------------------------------------------------------------------------------------------------------------|
| Release 1 | This version first released with ICT Information and Communications Technology Training Package Version 1.0. |

## Application

This unit describes the skills and knowledge required to work innovatively in game development, using thoughtful strategies and well-developed technical skills to accommodate a specified design brief.

It applies to individuals who support the design, development and programming of interactive 3-D media and digital games as part of a larger development team.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

## Unit Sector

Game development

## Elements and Performance Criteria

| ELEMENT                                                                       | PERFORMANCE CRITERIA                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Elements describe the essential outcomes.</i>                              | <i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>                                                                                                                                                                                                                                                                                                         |
| 1. Identify and analyse commonly used design concepts for games and 3-D media | 1.1 Obtain the project brief and other relevant organisational documents and procedures<br>1.2 Research and identify commonly used design concepts in digital games and interactive 3-D media<br>1.3 Analyse and interpret chosen common design concepts used in digital games and interactive 3-D media<br>1.4 Discuss design considerations for designing a digital game or an interactive 3-D media concept |
| 2. Identify appropriate                                                       | 2.1 Identify and review the appropriate range of industry-standard                                                                                                                                                                                                                                                                                                                                             |

| ELEMENT                                                                              | PERFORMANCE CRITERIA                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| software packages used for a digital game and 3-D concept design                     | software available to develop design concepts<br>2.2 Assess the software related to the concept design process requirements<br>2.3 Discuss the technical specifications for the development process<br>2.4 Select the software package                                                                                                                                                                          |
| 3. Use a chosen software package                                                     | 3.1 Run the selected software package and become familiar with the user interface<br>3.2 Create new files, organise and develop a file structure<br>3.3 Learn the required tools and components used to create, and develop a digital game, or interactive 3-D media concept                                                                                                                                    |
| 4. Create and develop the concept components for a digital game or interactive media | 4.1 Design a heads-up display for a digital game or 3-D interactive media<br>4.2 Consider specific processes for the heads-up display elements<br>4.3 Document the design, necessary programming process and requirements needed to implement the heads-up display<br>4.4 Use the chosen software package to create and develop the visual design elements, and components, to be used for the heads-up display |
| 5. Implement a design concept into a game or 3-D interactive media                   | 5.1 Load in the images required and write the code to implement the heads-up display into an existing framework<br>5.2 Write code to demonstrate heads-up display capabilities with implemented concepts                                                                                                                                                                                                        |
| 6. Evaluate the implementation                                                       | 6.1 Demonstrate implementation to the relevant personnel<br>6.2 Accept feedback to incorporate into the final design<br>6.3 Assess and refine the concept with the relevant personnel<br>6.4 Evaluate the usability of the concept's components<br>6.5 Reflect on possible changes to improve the visual design and capabilities of the components                                                              |

## Foundation Skills

*This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.*

| Skill                | Performance Criteria                                  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Learning             | 3.3                                                   | <ul style="list-style-type: none"> <li>Uses a range of investigative and analysis techniques to acquire the knowledge needed to use tools, and other components, effectively for digital games and 3-D media production</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Reading              | 1.1, 1.3                                              | <ul style="list-style-type: none"> <li>Interprets and comprehends a large range of textual and diagrammatic information to inform instructional, technical, and conceptual requirements</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Writing              | 1.1, 3.2, 4.1, 4.3, 5.1, 5.2, 6.2, 6.3                | <ul style="list-style-type: none"> <li>Uses correct spelling and grammatical structures, clear language, and technical terminology when explaining technical and design requirements</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Oral Communication   | 1.1, 1.4, 2.3, 6.2                                    | <ul style="list-style-type: none"> <li>Elicits information using effective listening and open questioning techniques</li> <li>Speaks clearly and concisely, converting highly technical language and terminology into plain English, when providing information</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Numeracy             | 4.1, 4.3, 4.4                                         | <ul style="list-style-type: none"> <li>Uses whole numbers, decimals and percentages, when manipulating software to achieve the required technical and design components</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Interact with others | 6.1, 6.3                                              | <ul style="list-style-type: none"> <li>Cooperates and collaborates with others as part of routine activities, and to elicit support and feedback</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Get the work done    | 1.1-1.4, 2.1-2.4, 3.1-3.3, 4.1-4.4, 5.1, 5.2, 6.1-6.5 | <ul style="list-style-type: none"> <li>Actively sources, analyses and evaluates applications, with the potential to meet 3-D design requirements</li> <li>Understands the purposes and uses the key features of specific digital systems, and tools, and operates them effectively to complete design tasks</li> <li>Understands the importance of file structure, and takes responsibility for data integrity and management</li> <li>Uses creativity and initiative in 3-D design</li> <li>Plans, organises and completes work according to defined requirements and schedules taking responsibility for decisions, and sequencing tasks to achieve efficient outcomes</li> <li>Uses a systematic process to evaluate work and to implement improvements</li> </ul> |

## Unit Mapping Information

| Code and title<br>current version                                | Code and title<br>previous version                                | Comments                                        | Equivalence status |
|------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------|--------------------|
| ICTGAM501 Create design concepts for digital games and 3-D media | ICAGAM501A Create design concepts for digital games and 3-D media | Updated to meet Standards for Training Packages | Equivalent unit    |

## Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2>

## Assessment Requirements for ICTGAM501 Create design concepts for digital games and 3-D media

### Modification History

| Release   | Comments                                                                                                     |
|-----------|--------------------------------------------------------------------------------------------------------------|
| Release 1 | This version first released with ICT Information and Communications Technology Training Package Version 1.0. |

### Performance Evidence

Evidence of the ability to:

- demonstrate original and innovative approaches to the creative development of a game
- implement game development and production strategies
- maintain the integrity of the design brief
- develop concept art and design specifications for heads-up displays, splash screens, start screens and game field screens, consistent with an identified game genre
- develop technical specifications for game mechanics, artificial intelligence, physics, sound, game play and overall usability
- implement a working heads-up display with basic functionalities.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

### Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- explain basic programming techniques
- discuss the capabilities and constraints of game engines
- outline concept development and visualisation skills
- discuss computer game development, including specific terminology
- describe current game-play hardware and software products
- outline the human resources required in the process of creating a game and their respective skills and technology requirements
- summarise work health and safety (WHS) requirements for:
  - ergonomics
  - electrical safety
- discuss risk and critical path management
- summarise the technical constraints that hardware imposes on:

- software development
- graphics requirements
- code development
- creative visual design.

## Assessment Conditions

Gather evidence to demonstrate consistent performance in conditions that are safe and replicate the workplace. Noise levels, production flow, interruptions and time variances must be typical of those experienced in the game development field of work, and include access to:

- computer hardware and software
- games engines
- file storage
- the internet for research purposes.

Assessors must satisfy NVR/AQTF assessor requirements.

## Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2>