Australian Government

Department of Education, Employment and Workplace Relations

ICAGAM402A Identify and apply principles of games design and game playing

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 identify and apply principles of games design and game playing.

Application of the Unit

This unit applies to concept artists, games 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. Analyse and document methodology relating to various computer game genres	1.1 Review ***game-play elements*** in an example of a chosen or given ***game genre*** 1.2 Identify objectives of play in an example of a chosen or given game genre
2. Interpret consumer demographics for various games products	2.1 Identify the ***target markets*** for various types of games 2.2 Interpret the choices and patterns of buyers and players 2.3 Review social, emotional, and cognitive aspects of contemporary interactive game play
3. Review historical aspects of game-play and game design	3.1 Review and describe the history of the ***games industry*** 3.2 Review game play and design for ***non-computer based games*** 3.3 Review the uses of games in commercial, industrial, education, military training, and therapeutic and assessment contexts
4. Identify industry game-design principles	4.1 ***Research*** and identify current industry ***game-design principles*** 4.2 Identify game-design principles for a chosen or given game
5. Outline the development of a computer game	5.1 Outline game design and play strategies 5.2 Outline ***technical limitations and constraints*** of current hardware and software

Required Skills and Knowledge

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

Required skills

- communication skills to:
  - collect, interpret and communicate in visual and written forms
  - communicate clearly using speech and text
  - communicate complex designs in a structured format drawn from industry standards, styles and techniques
  - communicate technical requirements related to software development, graphics requirements and code development to supervisors and other team members
- initiative and enterprise skills to exercise a high level of creative ingenuity in game design and innovation
- literacy and numeracy skills to read briefs, work instructions and technical and conceptual information
- research skills to:
  - analyse quantitative and qualitative data
  - identify relevant information
  - obtain information
  - sort and summarise information
  - undertake practical technical desktop research into game design and game-play principles
  - use a range of sources of materials and information
- technical skills to:
  - develop concepts and use visualisation skills
  - resolve basic hardware, software and other technical issues associated with games production.

Required knowledge

- procedures and processes for computer game development, including specific terminology
- current game-play hardware and software products
- technical constraints that hardware imposes on software development, graphics requirements, code development and creative visual design.

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: • differentiate game genres • differentiate game design and play principles.
Context of and specific resources for assessment	Assessment must ensure access to: • computer hardware, software, games engines and file storage • internet access for research purposes • 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
	• verbal questioning concerning aspects of game design and game-play principles, including:
	  • industry standards for game design
	  • game genres
	  • design of non-computer based games
	  • history of games industry.

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.

Game-play elements may include:	• buildings
	• command
	• cooperation
	• core game play
	• damage states
	• edge
	• enemies
	• fight
	• game flow
	• player activity
	• shoot
	• special talents:
	  • magic
	  • power
	• steer
	• switches
	• terrain objects
	• transportation
	• transformations
	• traps
	• weapons.

Game genre may include:	• adventure • alternative reality • ancient • casino • cyberpunk • educational • edutainment • fantasy • first person shooter • flight shooter • flight simulation • futuristic • god simulation

	• massively multi-player online games
	• massively multi-player online role-playing games
	• medieval
	• modern
	• multi-player
	• post-apocalyptic
	• puzzle
	• racing shooter
	• racing simulation
	• real-time strategy
	• role-playing games
	• science fiction
	• side-scrolling shooter
	• single player
	• sports
	• strategy, including:
	  • action strategy
	  • turn-based strategy
	• tactical combat.

Target markets may include:	• age-specific consumer segments:
	  • children
	  • adolescents
	  • adults
	• educational market segments
	• gender-specific consumer segments.

Games industry may include:	• Australian games • international games.
Non-computer based games may include:	• board games • card games • non-computerised arcade games, such as Pinball • table-top games.
Research may include:	• contact with industry associations • game play • reading newspapers, books, magazines, conference papers, industry organisation papers, and other references • research on audience, including research on attitudes toward game play from various viewpoints, including cultural, societal, national, and age group • talking and listening to experts • use of the internet • user surveys.

Game-design principles may include:	• closed environments • complexity management and slow bullets • constant positive feedback with sporadic negative feedback • discovery and exploration • movement versus animation • player control • third-person presentation • use of 'weenies' • use of maps.
Technical limitations and constraints may include:	• current technology • future technology and release date • pixels • platforms • polygon count • software capability.

Unit Sector(s)

Game development