Australian Government

Department of Education, Employment and Workplace Relations

ICAGAM301A Apply simple modelling techniques

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 apply simple modelling techniques.

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. Clarify work requirements	1.1 Clarify ***requirements*** and ***purpose*** for 3-D digital ***modelling techniques*** and refer to ***production documentation*** 1.2 Clarify work flow sequences in consultation with ***relevant personnel*** to ensure that ***production*** schedule deadlines are met 1.3 Select ***software*** that best suits the type of production and ***delivery platform*** for which simple 3-D modelling techniques are being applied 1.4 Gather and analyse ***reference materials*** to help with application of modelling techniques
2. Apply simple 3-D modelling techniques	2.1 Apply simple 3-D modelling techniques to create 3-D models 2.2 Use software features to block out models to determine correct proportions related to reference materials 2.3 Manipulate software features to apply basic lighting and shaders as required 2.4 Ensure that models' topology allows appropriate deformation, as required 2.5 ***Progressively refine*** and check ***integrity*** of models until they meet design requirements 2.6 Submit models to relevant personnel for comment on whether production requirements have been met and make final adjustments as required 2.7 Render and output models in required ***format*** and submit to relevant personnel by agreed deadlines 2.8 Make backup copies of files and complete workplace documentation according to enterprise procedures

Required Skills and Knowledge

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

Required skills

- communication, teamwork and literacy skills to:
  - complete workplace documentation
  - interpret and clarify written or verbal instructions
  - respond constructively to feedback received from other team members
  - work as a member of a production team, both independently on assignment and under direction
- initiative and creativity skills to design, visualise and create 3-D digital models of a range of inanimate objects using simple 3-D modelling techniques
- self-management and planning skills to:
  - meet deadlines
  - prioritise work tasks
  - seek expert assistance when problems arise
- technical skills to:
  - make backup copies of files and store appropriately
  - manage files and directories using standard naming conventions and version control protocols
  - use industry-current software applications to create 3-D models to specifications.

Required knowledge

- 3-D digital model design techniques
- 3-D digital modelling techniques
- basic knowledge of the stages in the production process from initial design through to finished product
- features of a range of delivery platforms
- geometry as it applies to the creation of realistic 3-D digital models
- issues and challenges that arise in the context of creating 3-D digital models
- OHS standards as they relate to working for periods of time on computers
- roles and responsibilities of project team members in the relevant industry sector
- scale, form, weight and volume.

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:
	• design 3-D digital models
	• create 3-D digital models that:
	  • demonstrate the application of simple 3-D modelling techniques
	  • demonstrate efficient use of geometry and attention to detail
	  • meet design requirements
	• work collaboratively with other members of the design and development team
	• meet deadlines.

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 • direct observation of candidate liaising with client and other members of the production team • verbal or written questioning of issues and challenges that arise in the context of creating 3-D digital models • review of fault-finding exercises • evaluation of reports or 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.

Requirements may include:	• assets for integration • collaboration with other team members • creative expectations • design specifications • output format • technical specifications • time lines.

Purpose of 3-D digital models may be for:	• animations
	• digital simulations:
	  • architectural models
	  • e-learning resources
	  • demonstration of processes and procedures.

Modelling techniques may include:	• NURBS • polygonal • primitives • sculpt • splines and patches.
Production documentation may include:	• animatics • brief • storyboard • technical specifications.
Relevant personnel may include:	• 3-D designer or concept artist • 3-D modeller • art director • director • head of department • matte painter • other technical or specialist personnel • producer • project manager • storyboard artist • supervisor • technical director.

Production may include:	• animated productions
	• commercials
	• digital media products:
	  • e-learning resources
	  • games
	  • simulations
	  • virtual worlds or environments
	• documentaries
	• feature films
	• filmed events or performances
	• music video
	• short films
	• television productions.

Software may include:	• 3-D:
	  • Studio Max
	  • Maya
	  • Softimage
	• graphics:
	  • Illustrator
	  • Photoshop.

Delivery platform may include:	• broadcast television • CD • DVD • film • internet • kiosk • mobile phone • personal digital assistant (PDA) • other digital devices.
Reference materials may include:	• books • concept drawings and designs • direct observation of actions to be simulated in 3-D models • real object on which models are to be based • still images • videos.
Progressively refine may relate to:	• achieving required shape • achieving required topology.
Integrity may include checking aspects of:	• double faces • isolated vertices • pivot points

	• resetting transform • scale of models relative to other components in final sequences.
Format may include:	• AVI • IFF • JPEG • MPEG • PNG • Quicktime • Targa • TIFF.

Unit Sector(s)

Game development