



Australian Government

Department of Education, Employment and Workplace Relations

ICAGAM409A Create 3-D characters for interactive games

Release: 1

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Modification History

Release	Comments
Release 1	This Unit first released with <i>ICAll Information and Communications Technology Training Package version 1.0</i>

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to design and build 3-D characters for commercial games.

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
<i>Elements describe the essential outcomes of a unit of competency.</i>	<i>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.</i>

Elements and Performance Criteria

1. Research and analyse characters	<p>1.1 Determine and agree <i>character style</i> according to <i>client requirements</i></p> <p>1.2 Determine and agree <i>character type</i> and <i>profile</i></p> <p>1.3 Determine and agree <i>character role</i> and name</p> <p>1.4 Create animations for each of the 3-D models based on a study of the original character's animations</p> <p>1.5 Compare animations with originals for quality</p>
2. Design characters	<p>2.1 Develop <i>concept illustration</i> for character</p> <p>2.2 Conduct <i>focus testing</i> of concept illustration with client and representatives of target market audience</p> <p>2.3 Develop <i>character schematics</i> based on feedback and submit to client for approval</p>
3. Develop character models	<p>3.1 Construct a 3-D character model on a turntable based on character schematics</p> <p>3.2 Construct 3-D costumes, tools and accessories for character model</p> <p>3.3 Shade, texture and light complete character model</p> <p>3.4 Develop animations of key poses and transitions in consultation with animation personnel for approval</p> <p>3.5 Compare 3-D models and animations to original concept illustration for verification of quality and conformity to brief</p> <p>3.6 Submit to client for approval</p>

Required Skills and Knowledge

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

Required skills

- communication skills to liaise with project team and clients
- literacy skills to read technical documents and specifications
- planning and organisational skills to manage time and resources
- research skills to conduct research into character attributes and styles
- technical skills to:
 - create 2-D character schematics to construct industry grade 3-D models
 - create industry grade fully textured animated 3-D game characters using 3-D and 2-D graphics software tools
 - create 3-D characters models that meet agreed target market, technical and design requirements.

Required knowledge

- advanced features of 3-D software packages to create 3-D character models for games
- how to interpret game design briefs
- methods of 3-D character modelling within technical parameters and constraints of game development
- technical limitations for creation of 3-D character models for games.

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	<p>Evidence of the ability to:</p> <ul style="list-style-type: none"> • use 2-D and 3-D software applications to develop and realise characters for games • develop character designs that comply with games design brief and client requirements • develop character designs that are innovative and competitive with characters in games currently in the marketplace • test responses to character designs for aesthetic suitability with intended audience and act on feedback.
Context of and specific resources for assessment	<p>Assessment must ensure access to:</p> <ul style="list-style-type: none"> • computer hardware, software, games engines and file storage • character reference materials, such as models, illustrations, art and design books, and character photographs • range of state of the art games across all platforms and genres • range of the latest consoles and hand-held game devices • 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	<p>A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:</p> <ul style="list-style-type: none"> • discussion or written report of the nominated techniques applied to character design and development • verbal questioning regarding reasons for use of particular hardware and software options • direct observation of the learner undertaking character design activities • project or work activities that demonstrate capacity for research to support character development • review of portfolios of evidence • completed character models on a turntable.
Guidance information	Holistic assessment with other units relevant to the industry

for assessment	<p>sector, workplace and job role is recommended, where appropriate.</p> <p>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.</p> <p>Indigenous people and other people from a non-English speaking background may need additional support.</p> <p>In cases where practical assessment is used it should be combined with targeted questioning to assess required knowledge.</p>
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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.

<i>Character style</i> may include:	<ul style="list-style-type: none"> • abstract • caricatured • cartoon-like • comic • cute • exaggerated • highly realistic • hybrid • idealised • robotic • scary • stylised • symbolic.
<i>Client requirements</i> may include:	<ul style="list-style-type: none"> • design and platform constraints: <ul style="list-style-type: none"> • 1500 to 3000 polygons • maximum of 40 bones for animation • up to four 256 by 256 texture maps • game design brief: <ul style="list-style-type: none"> • draft pencil concept illustrations of the player character and a few of the non-player characters • details of player characters, including: <ul style="list-style-type: none"> • control mechanisms • number and types of interaction with other non-player characters • number of animations • intended audience, genre, platform and control devices • introduction and game overview, including list of special features and selling points • list of all non-player and player characters • other illustrations or graphics that enhance the comprehension of the document • title and cover art • wants, needs and interest of the target market audience identified for the game.

<p><i>Character type</i> may include:</p>	<ul style="list-style-type: none"> • alien • animal • anthropomorphised food • anthropomorphised machine • anthropomorphised toy • anthropomorphised vehicle • human • spiritual entity • terrestrial • vegetable.
<p><i>Character profile</i> may include:</p>	<ul style="list-style-type: none"> • age • aspects of behaviour • change of circumstances, e.g. rich to poor • counterintuitive props and clothing • courage • cowardice • definitive visual cues • exaggerated physical characteristics • fangs • gender • intelligence • interpretive visual cues • mental and emotional attributes and personality traits • motivation or goals • naivety • physical attributes • profession • professional uniforms • props • race • religion • shyness • social butterfly • social status • strength • tools • wheelchairs.
<p><i>Character role</i> may include:</p>	<ul style="list-style-type: none"> • antagonists • extras • minor characters • objects of desire • partners or sidekicks

	<ul style="list-style-type: none"> • protagonists • secret agendas • supporting roles.
Concept illustration may include:	<ul style="list-style-type: none"> • 2-D hand rendered drawing • 2-D or 3-D digital illustration • 2-D sketch • collage or montage • photograph • storyboard.
Focus testing may include:	<ul style="list-style-type: none"> • analysis and written summary of focus test discussions, outcomes and results • audience perceptions of: <ul style="list-style-type: none"> • age that character appeals to • 'coolness' factor • value of character • consultation with groups representing target market audience for finished game.
Character schematics may include:	<ul style="list-style-type: none"> • scaled 2-D Illustrations of front, back, side and top of the character • scaled 2-D illustration to illustrate the character in various action poses, including: <ul style="list-style-type: none"> • greeting, hitting, pushing, pulling and colliding • jumping, crawling, climbing, shooting and rolling • sitting and riding • walking and running • scaled 2-D sketches of the character face in various expressions: <ul style="list-style-type: none"> • happy, angry, sad and confused • situational responses • viseme set, such as facial expressions while talking • scale comparison illustrations, including character next to: <ul style="list-style-type: none"> • a building • a vehicle • other characters • scale or dimension indicators.

Unit Sector(s)

Game development