Functional Area - Operations Management

Title	Create low polygon models
Code	107927L4
Description	This unit of competency applies to all Digital Media Technology (DMT) practitioners who are involved in game graphics designing. Low polygon is a polygon mesh in 3D computer graphics that has a relatively small number of polygons and frequency occurs in real-time game applications. This UoC is concerned with the activities and steps in creating low polygon models as part of the game applications development.
Level	4
Credit	3

Competency	Performance Requirements
	1. Knowledge for low polygon models
	
	- Understand the details about textures and materials
	- Understand the effects of diffusion, specular and ambient light
	- Understand how to do shading with a computer program (shader) in the process of game application development
	- Possess good knowledge in creating low resolution (low-res) models
	- Possess the ability to perform UV (the 2 axes of the 2D texture) mapping and unwrap UV
	- Master the techniques in using 3D modelling software, such as:
	    o 3DSMax
	    o Maya
	    o Blender, etc.
	
	2. Create low polygon models
	
	- Gather requirements towards low polygon models creation as part of the graphics designing tasks
	- Decide what the optimal polygon limit should be and come up with a reasonable polygon count, for examples:
	    o A rock on the side of the road may be comprised of only 10-30 polygons
	    o An eye-catching building needs more details and may need 350-550 or more polygons
	- Consider the following factors to determine the threshold for a low polygon mesh:
	    o The time the meshes were designed and for what types of hardware
	    o The details required in the final mesh
	    o The shape and properties of the object in question, etc.
	- Use designated 3D modelling software to create the low-res models, which are typically polygons less than 10K in size
	- Arrange the polygon mesh so that joints are ready for animation
	- Unwrap UV for texture creation and normal map creation
	- Create materials to indicate how the surfaces interact with light
	- Make appropriate adjustments to the low polygon models until the desired results are achieved
	- Present the completed low polygon models to the game development team for comment and seek agreement for adoption
	
	3. Exhibit professionalism

Specification of Competency Standards
for the Information & Communications Technology Industry
Unit of Competency

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	• Always create the low polygon models with a proper balance between optimal game performance and possibly undesirable appearance in the resulting graphics • Always carry out the low polygon models creation tasks strictly according to requirements, without avoiding any difficulties or problems
Assessment Criteria	The integrated outcome requirements of this UoC are the abilities to: • Complete the low polygon models creation on time and within budget constraints; and • Deploy fully designated resources and support to complete the low polygon models creation tasks
Remark	