NEW ZEALAND INSTITUTES OF TECHNOLOGY AND POLYTECHNIC QUALIFICATIONS IN INFORMATION & COMMUNICATIONS TECHNOLOGY

PRESCRIPTION: DG600 DYNAMIC GRAPHICS

AIM OF MODULE:	To provide students with the skills and knowledge to enable them to develop 2D and 3D animated objects for use in Multimedia and Web based projects.
CREDITS:	14
KNOWLEDGE ASSUMED FROM:	MA600 Multimedia
STUDENT LEARNING HOURS:	140
CONTENT REVISED:	2008
PRESCRIPTION EXPIRY DATE:	Nov 2011

Level and Assessment Schedule

TOPICS	R	C	A	P	Suggested Assessment Percentage
1. Creating Graphics			*		10
2. 2D Animation			*		20
3. 3D Modelling with Primitives				*	40
4. Animating Models & Building Scenes				*	15
5. Rendering/Lighting, Audo & Editing				*	15
					100

LEARNING OUTCOMES

The student will:

A   1   Use the tools of graphics design programs to create realistic scenes.

A   2   Create animated GIFs and Flash movies to demonstrate 2D animation.

P   3   Create a design brief and design a storyboard for a 3D animation sequence. Design realistic 3D models (at least one to be anthropomorphic) with suitable surface textures.

P   4   Create realistic animations for the models previously created and insert them into a realistic environment.

P   5   Render the animation with suitable lighting effects, include appropriate audio and edit the final product to meet the design brief.

CONTENT

1   CREATING GRAPHICS

➢   Demonstrate object insertion and removal with appropriate cloning tools to render the changes unnoticeable.

2   2D ANIMATION

➢   Create a GIF animation suitable for a web page logo.

➢   Create a Flash animation (for example a simple cartoon using line drawings and tweening).

3   3D MODELLING WITH PRIMITIVES

➢   Explore wireframes, splines, lathing, lofting, extruding; boolean addition and subtraction.

➢   Use textures, bump maps and materials for realistic surface creation.

➢   Use inverse kinematics for realistic motion.

4   ANIMATING MODELS & BUILDING SCENES

➢   Insert models into appropriate scenes.

➢   Create motion paths for object animation. Explore object hierarchies and pivot points.

➢   Use onion skinning (ghosting), key frames and tweening.

5   RENDERING/LIGHTING, AUDIO & EDITING

➢   Explore the effects of different lighting on scenes and the use of effects like fog and shadows.

➢   Experiment with shifting camera positions and using a moving camera.

➢   Create suitable audio to accompany the animation.

➢   Edit for maximum impact – in and out points; frame removal; transitions between scenes.

➢   Use different rendering techniques to later the quality & size taking into account the playback limitations.

TEACHING/LEARNING METHODS

Students must have access to suitable software to accomplish all aspects of this module. The emphasis should be on learning appropriate generic techniques that would serve the student if they advanced to commercial use of these skills. Many of the commercial packages are extremely expensive and require equally expensive workstations to run on but there are enough simpler tools available to carry out the aims of the module and give the student the necessary skills.

LEARNING RESOURCES

There are a number of inexpensive programs available, many of which can be downloaded from the appropriate Internet web sites for free.