UNIVERSITI TEKNOLOGI MARA

GDG482: 3 DIMENSIONAL DESIGN

Course Name (English)	3 DIMENSIONAL DESIGN APPROVED
Course Code	GDG482

MQF Credit	3

Course Description	This course introduces three-dimensional (3D) computer graphics for digital visualization designed for motion design applications. Topics include the fundamental of 3D modelling, texturing, lighting, animation, rendering and Post Production.

Transferable Skills	Demonstrate ability to apply creative, imaginative and innovative thinking and ideas to problem solving. Demonstrate professional skills, knowledge and competencies.

Teaching Methodologies	Lectures, Blended Learning, Studio, Practical Classes, Tutorial, Presentation

CLO		
	CLO1	Explain the fundamental steps in producing three-dimensional computer graphics
	CLO2	Construct of the three-dimensional computer graphics for digital visualization.
	CLO3	Justify ideas and opinion regarding three dimensional models (objects) using appropriate computer graphic software.

Pre-Requisite Courses	No course recommendations

Topics
1. Overview of Three-Dimensional (3D) computer modeling. 1.1) Computer Graphics evolution and applications.
2. Understanding the virtual space. 2.1) 3D coordinates.
3. 3D Modeling 3.1) Polygon. 3.2) Nurbs.
4. Texturing 4.1) Materials. 4.2) Surface mapping techniques.
5. Lighting 5.1) Lighthing techniques.
6. Animation (Basic walk through animation) 6.1) The mechanic of motion. 6.2) Walkthrough animation.
7. Rendering and Post Production 7.1) Rendering 7.2) Digital Compositing 7.3) Digital Printing 7.4) 3D Printing

Assessment Breakdown	%
Continuous Assessment	100.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	Assignment 2: Construct three dimensional objects based on geometric or organic forms. Apply surface mapping, lighting, camera angle and rendering of the final composition.	30%	CLO2
	Assignment	Assignment 3: Final Project and Presentation	40%	CLO3
	Written Report	Assignment 1: Style, issues and trend in three dimensional visualization.	30%	CLO1

Reading List	Recommended Text	• **Sharkawi Che Din 2017, *Animasi 3D lanjutan*, Dewan Bahasa dan Pustaka Kuala Lumpur [ISBN: 9789834907150]** • **Sharkawi Che Din 2016, *Media digital*, Dewan Bahasa dan Pustaka Kuala Lumpur [ISBN: 9789834617783]**
	Reference Book Resources	• **Paul Wells 2006, *The Fundamentals of Animation*, AVA Publishing [ISBN: 9782940373024]** • **Brian Hall 2015, *Understanding Cinematography*, The Crowood Press [ISBN: 9781847979919]** • **Christopher J. Bowen, Roy Thompson 2013, *Grammar of the Shot*, Taylor & Francis [ISBN: 9780240526010]** • **Andrew Chong, Andrew McNamara 2008, *Basics Animation 02: Digital Animation*, AVA Publishing [ISBN: 2940373566]** • **Robin Beauchamp 2005, *Designing Sound for Animation*, Taylor & Francis [ISBN: 0240807332]** • **Benjamin Bratt 2011, *Rotoscoping*, Taylor & Francis [ISBN: 9780240817040]** • **Harold Whitaker, John Halas, Tom Sito 2009, *Timing for Animation*, Focal Press [ISBN: 9780240521602]** • **Roland Hess 2011, *Tradigital Blender*, Taylor & Francis [ISBN: 9780240817576]** • **Roland Hess 2010, *Blender Foundations*, Taylor & Francis [ISBN: 9780240814308]** • **SendPoints Publishing Co. 2015, *Motion Graphics in Branding*, Ginko [ISBN: 9789881383570]** • **Nigel Chapman, Jenny Chapman 2009, *Digital Multimedia*, Wiley [ISBN: 9780470512166]** • **Shamus Culhane 1990, *Animation*, St. Martin's Griffin [ISBN: 0312050526]**
Article/Paper List	This Course does not have any article/paper resources	
Other References	This Course does not have any other resources	