Liverpool John Moores University

Title: Design Presentation
Status: Definitive
Code: **5002PDE**   (120083)
Version Start Date: 01-08-2019

Owning School/Faculty: Electronics and Electrical Engineering
Teaching School/Faculty: Electronics and Electrical Engineering

Team	Leader
Fang Guo	Y

Academic Level: FHEQ5   **Credit Value:** 20   **Total Delivered Hours:** 72

Total Learning Hours: 200   **Private Study:** 128

Delivery Options
Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	24
Practical	24
Tutorial	24

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Test	3dS test	3dS modelling test	40	
Portfolio	3dS design	3dS design portfolio	60	

Aims

Provide knowledge and skills required to produce high quality presentation visuals using existing CAD data with graphics software tools.

Learning Outcomes

After completing the module the student should be able to:

1 Create a concept through 3D graphic package
2 To compose a scene, apply materials / textures, configure lighting and cameras and create photorealistic renders
3 Apply appropriate post-processing techniques in order to present concept for publication or client review

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

3dS modelling test   1   2

3dS design portfolio   3

Outline Syllabus

Module introduction
Module guide; aims; learning outcomes; assessment and marking schemes. Outline syllabus; module timetable and student feedback. Availability and license agreement of the student version of Autodesk 3ds Max; minimum system requirements e.g. hard disk space, memory required, processor, video card.

3D Software
Commercial and open source software for modelling and rendering 3D scenes. Import and export file types and associated requirements.

Autodesk 3ds Max
Overview; visualisation workflow.

Interface
Menus and toolbars; status bar; the command panel; setting the project folder and configuring user paths; viewport configuration and navigation; object selection.

Basic functions
Modelling with primitives; applying transforms; sub-object mode; reference coordinate systems and transform centres; cloning and grouping; box modelling; statistics in viewport.

Design Configuration
Video modes; preferences; configure Paths; units setup; customising the user interface.

Assembling project files
Data linking and importing; DWG link and import options; layer and object properties.

3D Modelling from 2D Objects
Drawing 2D lines; the lathe modifier; 2D Booleans; terrain objects; the extrude

modifier; Boolean operations; the sweep modifier; loft objects; using snaps for precision.

Material types and parameters
How materials work; understanding maps and materials; materials and material libraries; managing materials. Standard materials; multi/sub-object materials; opacity, bump, and reflection mapping; mental ray shaders and materials; arch & design materials; ProMaterials; other material types; creating a decal texture.

Mapping coordinates and scale
Mapping coordinates; mapping scale; spline mapping.
Lighting
Local vs. global illumination; choosing a lighting strategy; fundamentals of standard lighting; types of standard lights; shadow types; photometric light objects; exposure control; daylight lighting.

Rendering
Fundamentals of mental ray; mental ray interior rendering; controlling mental ray quality; mental ray proxies; iterative rendering; single vs. double-sided rendering; camera parameters; background images; the print size wizard; selected rendering options; rendering pre-sets.

Learning Activities

This module will be delivered through an integrated series of lectures, tutorials, practical sessions, guided design activities and case studies. The learning activities are to be student focused and develop the students design knowledge through experiential learning.

Notes

This module is delivered using a variety methods including lectures, seminars, tutorials and practical sessions. The module will be delivered from a engineering and product design perspective.