

MODULE CODE: M4X02235
TITLE: 3D CAD and Visualisation
DATED: 29/07/2016

LEVEL: 4
CREDITS: 20

JACS CODE: W240

AIM(S)

- To introduce the student to the fundamental techniques and industrial design practice of computer aided three-dimensional modelling and two-dimensional concept visualisation using industry standard software.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to demonstrate the ability to:

- understand and effectively apply fundamental solid and surface modelling construction techniques to generate simple 3D objects in virtual environments using appropriate software applications;
- understand and effectively apply visualisation techniques in a range of 2D digital image creation software tools to develop and communicate design concepts.

INDICATIVE CONTENT

- Students will be introduced to the fundamental techniques and workflows in the industry standard digital tools, for example;
 - 3D CAD – Solidworks, Autodesk Fusion 360, Autodesk Alias.
 - 2D CAD – Adobe Photoshop & Illustrator / Autodesk SketchBook Pro.

LEARNING AND TEACHING STRATEGY

Lectures and demonstrations will introduce students to the fundamental techniques of the software. Students will then be supervised in practical CAD studio sessions where online tutorials, courseware and subject specific 'how to' exercises will be used to develop practical skills and understanding of the software applications. Practical skills tasks will enable students to relate their technical knowledge and skills to the implementation of 2D and 3D CAD within industrial design studio practice.

The allocation of teaching to deliver the module is:

Activity type	Hours	Percentage
Scheduled learning	90	45
Independent learning	110	55
Placement learning	0	0
TOTAL	200	100%

ASSESSMENT

Assessment Component 1 – 50%

Practical – 2D digital composition.

Exemplar

Demonstrate competency within the digital environment in composing and presenting predefined design layouts using:

- 2D visualisation and technical commands

Assessment Component 2 – 50%

Practical – 3D Solid and Surface Modelling.

Exemplar

Demonstrate competency within the virtual environment in modelling and presenting predefined design scenarios/artefacts using:

- 3D construction and assembly commands
- Rendering and technical drawings commands

Assessment Summary

Activity type	Percentage
Written	0
Coursework	0
Practical	100
TOTAL	100%

BIBLIOGRAPHY

Essential

<http://help.autodesk.com/view/ALIAS/2014/ENU/>
<https://www.solidworks.com/sw/resources/solidworks-tutorials.htm>
<http://tv.adobe.com>

Recommended

Lombard, M. (2013) Solidworks 2013 Bible. John Wiley & Sons.
Adobe Creative Team. (2012) Adobe Photoshop CS6 Classroom in a Book. Adobe.
Adobe Creative Team. (2012) Adobe Illustrator CS6 Classroom in a Book. Adobe.
Dayley, B & Dayley, D. (2012) Adobe Photoshop CS6 Bible. John Wiley & Sons.
Alias Learning Tools (2006) Learning Design with Alias Studio Tools. John Wiley & Sons.

Background

Dewey, A. (2012) How to Illustrate and Design Concept Cars. Veloce Publishing Ltd
Henry, K. (2012) Drawing for Product Designers (Portfolio Skills). Laurence King Publishing Ltd.

Websites

<http://www.solidworkscommunity.com>
<http://www.sketchbook.com>
<http://www.carbodydesign.com/tutorials/2d/sketchbook-pro-tutorials/>

<http://www.carbodydesign.com/tutorials/3d/alias-studio-tutorials/>
<http://www.idsketching.com>
<http://idcreatures.com>
<http://www.core77.com>