

Liverpool John Moores University

Title: ASSET MANAGEMENT AND GRAPHICS TECHNOLOGIES
Status: Definitive
Code: **5058COMP** (117392)
Version Start Date: 01-08-2014

Owning School/Faculty: Computing and Mathematical Sciences
Teaching School/Faculty: Computing and Mathematical Sciences

Team	Leader
Sud Sudirman	Y
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Academic Level: FHEQ5 **Credit Value:** 24.00 **Total Delivered Hours:** 72.00
Total Learning Hours: 240 **Private Study:** 168

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	24.000
Workshop	48.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Artefacts	AS1	Resources management using a game engine.	50.0	
Technology	AS2	Development of interactive graphics application.	50.0	

Aims

To introduce students to a wide range of resource types and storage formats used in graphics and visualisation systems.

To expose students to a wide range of resource management systems used on modern game engines.

To teach basic computer graphics operations using a modern graphical API.

To provide students with the skill necessary to produce basic interactive graphical application.

Learning Outcomes

After completing the module the student should be able to:

- 1 Identify different types of resources and use an appropriate technique to store and load the resource.
- 2 Use an asset management system of a game engine in the development of a simple interactive application.
- 3 Explain the principles behind 2D computer graphics.
- 4 Use modern graphics API to develop an interactive graphical application.

Learning Outcomes of Assessments

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

Resources management	1	2
Interactive graphic app	3	4

Outline Syllabus

Asset/Resource Management:

Resources in Interactive Graphics Systems (meshes, textures, sound, sprites), file formats.

Basic file Input Output, metadata, introduction to tagging, data archiving, data compression, and popular data archive formats (JAR, MPQ).

Resource Manager Architecture: Resource organization, directories, GUID.

Content Pipeline in Game Engines

Procedurally Generated Contents

Study of existing successful Resource Database Design

Workshop using the asset management system of game engines.

Computer Graphics:

Introduction to Computer Graphics: History and definition of terms of 2D and 3D graphics technologies.

Overview of modern graphics APIs and application to modern hardware (graphics and display devices).

Programming constructs: variables, arithmetic operations, logical and relational statement, iteration, arrays and procedures.

Programming Interactivity: Mouse and Keyboard Events.

Programming Graphics: Point, lines, shapes and colour.

Programming Media: Image and Fonts.

Programming Graphical User Interface

Collision Detection

Physics Simulation

Particle Systems

Learning Activities

Formal lectures and lab based practical workshops.

References

Course Material	Book
Author	Greenberg, I.
Publishing Year	2007
Title	Processing: Creative Coding and Computational Art
Subtitle	
Edition	
Publisher	Friends of Ed
ISBN	159059617X

Course Material	Book
Author	Shreiner, D.
Publishing Year	2009
Title	OpenGL Programming Guide: The Official Guide to Learning OpenGL, Versions 3.0 and 3.1
Subtitle	
Edition	7th
Publisher	Addison Wesley
ISBN	0321552628

Course Material	Book
Author	Gregory, J.
Publishing Year	2009
Title	Game Engine Architecture
Subtitle	
Edition	
Publisher	A.K. Peters Ltd.
ISBN	1568814135

Course Material	Book
Author	Cawood, S and McGee, P
Publishing Year	2009
Title	Microsoft ® XNA Game Studio Creators Guide
Subtitle	
Edition	
Publisher	McGraw-Hill Osborne Media
ISBN	0071614060

Course Material	Book
Author	Jaegers, K

Publishing Year	2010
Title	XNA 4.0 Game Development by Example: Beginner's Guide
Subtitle	
Edition	
Publisher	PACT Publishing
ISBN	1849690669

Course Material	Book
Author	Sharp, J
Publishing Year	2013
Title	Microsoft Visual C# 2012 Step by Step
Subtitle	
Edition	1st
Publisher	Microsoft Press
ISBN	0735668019

Notes

This module introduces students to the concepts and technical aspects of asset/resource management, the principles of 2D computer graphics and modern graphics API which are essential in the development of interactive graphic solutions.