Liverpool John Moores University

Title:	ASSET MANAGEMENT AND GRAPHICS TECHNOLOGIES
Status:	Definitive
Code:	**5522YCOM** (118259)
Version Start Date:	01-08-2012
Owning School/Faculty:	Computing and Mathematical Sciences
Teaching School/Faculty:	Kolej Teknologi YPC-ITWEB

Team	Leader
Sud Sudirman	Y

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 introduce students to the principles and concepts of modern databases and database system.
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, popular data archive formats (JAR, MPQ).
Introduction to Databases, database concepts and terminology, data independence, DBMS architecture. Entities, attributes, identifiers, relationships, queries.
Introduction to Relational Databases and RDBMS (e.g., MySQL, Access, ORACLE).
Resource Manager Architecture: Resource organization, directories, GUID.
Successful Resource Database Design case studies (Unreal Engine, OGRE Engine, HOMURA).
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 font.

Programming Motion: speed, direction, tweening, random, timer, transformation, curves.

Learning Activities

Formal lectures and lab based practical workshops.

References

Course Material	Book
Author	Casey Reas and Ben Fry
Publishing Year	2010
Title	Getting Started with Processing
Subtitle	
Edition	
Publisher	Make
ISBN	144937980X

Course Material	Book
Author	Daniel Shiffman
Publishing Year	2008
Title	Learning Processing: A Beginner's Guide to Programming Images, Animation, and Interaction, Morgan Kaufmann Series in Computer Graphics
Subtitle	
Edition	
Publisher	Morgan Kaufmann
ISBN	0123736021

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

Course Material	Book
Author	Kostas Terzidis
Publishing Year	2009
Title	Algorithms for Visual Design Using the Processing
Subtitle	
Edition	

Publisher	Wiley
ISBN	0470375485

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

Course Material	Book
Author	Connolly,T. Begg,C. Strachan, A.
Publishing Year	2005
Title	Database Systems: A Practical Approach to Design, Implementation and Management
Subtitle	
Edition	4th
Publisher	Addison Wesley
ISBN	0321210255

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.