**Liverpool** John Moores University

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| Title: | INTERACTIVE MEDIA AND GAMES DEVELOPMENT |
| Status: | Definitive |
| Code: | **4012COMP**   (119635) |
| Version Start Date: | 01-08-2015 |

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

| Team | Leader |
|---|---|
| William Hurst | Y |
| Thar Shamsa | |
| Abdennour El-Rhalibi | |

| **Academic Level:** | FHEQ4 | **Credit Value:** | 24.00 | **Total Delivered Hours:** | 72.00 |
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| **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 | Development of interactive web application | 50.0 | |
| Artefacts | AS2 | Development of 2D game | 50.0 | |

**Aims**

*-To introduce students to the principles and concepts of Web technologies and interactive Web-based media.*
*-To use Web media to design and develop an interactive Web portal.*
*-To introduce students to the principles, concepts and techniques of digital game*

*production.*
*-To apply programming concepts for the design development of a 2D computer game.*

## Learning Outcomes

After completing the module the student should be able to:

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| 1 | Discuss the principles and concepts in the production of interactive web-based media. |
| 2 | Apply the principles and related techniques to design and develop interactive web-based media software. |
| 3 | Explain the principles and concepts in the production of game software. |
| 4 | Apply the basic principles and techniques in game development using appropriate technologies to produce simple a 2D computer game. |

## Learning Outcomes of Assessments

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

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|---|---|---|
| Web application development | 1 | 2 |
| Development of 2D game | 3 | 4 |

## Outline Syllabus

*-Media development workflow: pre-production, production and post-production.*
*-Media production for Web and games: creation, authoring and editing of media.*
*-User experience design: definition of user experience, importance of user experience, art versus function.*
*-Web design techniques, validation and accessibility, cross-browser development, quirks.*
*-HTML (tags, elements, headers, mark-up, texts, tables, and organisation of data/elements).*
*-Web technologies (Client-Server paradigm, HTTP POST/GET requests, introduction to server side scripting, the different web technologies).*
*-Simple interactive web media development using existing tools and library.*
*-Relating the media development workflow to the game development process and lifecycle: story, design, implementation.*
*-Modern game development: development teams, development tools, version-control.*
*-Elements of a modern computer game: intro screen, user interface and menus, loading screens, main game loop, HUD, in-game-menu.*
*-Game program structure: initialisation, resource allocation, the update-render loop, releasing resources, finalisation.*
*-Applying programming concepts to game design.*
*-Managing memory: heap and stack memory, allocating and freeing memory.*
*-Event based interaction, update-render distinction, use of time deltas.*
*-2D Canvas rendering.*

*-Interaction and interactive input.*
*-Basic audio techniques: sound samples, in-game event-based sound, in-game music.*
*-Development tools: graphics, maps, tools programing, standardised development tools.*
*-Game deployment: bundling the game together, deploying as a Web download.*

**Learning Activities**

Formal lectures will deliver theoretical concepts while practical-based workshop sessions, which take place in the computer laboratories, will be used to introduce specific techniques and methods used in the production of interactive media and digital games.

**Notes**

This module introduces students to the principles, concepts and technical aspects of interactive Web-based media and games development. The knowledge of Web technologies built up in the first semester will allow the student to create a Web-space to host the game portfolio that they will go on to develop throughout the rest of their degree. This Web-space will also be the focus of the first coursework. The second semester will build on their programming skills to cover the core game development capabilities and technical elements needed to allow them to develop their own interactive game software.