

## BSc (Hons) COMPUTER GAMES SOFTWARE DEVELOPMENT (July 2010)

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| <b>1. Qualification</b><br>BSc (Hons)   | <b>2. Programme Title</b><br>Computer Games<br>Software<br>Development | <b>3. UCAS Code</b><br>3 Year <b>G450</b><br>short form<br><b>BSC/CGD</b> | <b>4. Programme Type</b><br>Modular Single and<br>Joint<br>Full-time and Part<br>time |
| <b>5. Main Purposes and Distinctive Features of the Programme</b> <ol style="list-style-type: none"> <li>i. To provide students with a broad education in computer game design, development and technology, with a special emphasis on the technical aspects of game production.</li> <li>ii. To equip students with the skills (especially programming) and knowledge necessary to pursue a successful career in industries specialising in the creation and distribution of leisure and entertainment computing technologies.</li> <li>iii. To use Computer Games Software Development methods and techniques as a vehicle for introducing the theoretical, intellectual, creative and dynamic aspects of computing.</li> <li>iv. To promote innovation and creativity assisted by rapid technological change.</li> </ol> <p><b>Special Features</b><br/>         Students' software development and problem solving skills are in high demand in the job market.</p> |  |   |   |

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| <b>6. What a Graduate should know and be able to do on completion of the Programme</b><br>The programme outcomes have reference to the benchmark statement for Computing <b>(C)</b> , and the International Game Developers Association curriculum framework. <b>(GDA)</b><br><br><p style="text-align: center;"><b>(Objectives and Learning Outcomes)</b></p> Graduates will have demonstrated:   |   |
| <i>Knowledge and understanding in the context of the subject</i> <ol style="list-style-type: none"> <li>i. formal understanding of game play &amp; game design. <b>(GDA)</b></li> <li>ii. knowledge of the underlying theory, concepts and principles of computer game development. <b>(C)</b></li> <li>iii. an understanding of the business constraints and financial requirements in computer game development.<b>(C)</b><br/><b>(GDC)</b></li> <li>iv. adequate breadth of skill and knowledge to ensure flexibility.</li> </ol> | <i>Subject-specific practical/professional skills</i><br>Ability to: <ol style="list-style-type: none"> <li>i. Use appropriate theory, practice and tools, for the specification, design, and implementation of computer-based games. <b>(C)</b></li> <li>ii. Use core analytical techniques and design tools. <b>(GDA)</b></li> <li>iii. Work as part of a development team. <b>(C)</b></li> <li>iv. Write computer programs.</li> </ol> |
| <i>Cognitive skills in the context of the subject</i><br>Ability to: <ol style="list-style-type: none"> <li>i. critically evaluate games software in both conceptual and completed forms.<br/><b>(GDA) (C)</b></li> </ol>  | <i>Other skills (e.g. key/transferable) developed in subject or other contexts</i><br>Capacity to: <ol style="list-style-type: none"> <li>i. make effective use of general IT facilities <b>(C)</b></li> <li>ii. communicate effectively, orally</li> </ol>   |

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| ii. analyse and specify computer based systems for use in interactive entertainment. <b>(GDA) (C)</b><br>iii. Deploy effectively the methods and tools used in the definition, construction and development of fully functioning computer games. <b>(GDA) (C)</b> | electronically and in writing. <b>(C)</b><br>iii. manage and organise. <b>(C)</b><br>iv. solve numerical problems and analyse information. <b>(C)</b><br>v. solve practical programming problems.<br>vi. independent study, self-appraisal (reflection) and goal setting<br>vii. literature review skills<br>viii. employability skills |
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| <b>7. Qualities, Skills &amp; Capabilities Profile</b><br>The educational and training goals of the programme seek to develop and demonstrate the following qualities, skills, capabilities and values in its graduates  |  |  |  |
|--|--|--|--|
| Cognitive  | Practical  | Personal & Social  | Other  |
| Game design and documentation.<br>Applied Problem solving.<br>Analysis of information.   | Software design, implementation and testing.<br>Hardware evaluation and effective use. | Self-motivation.<br>Organisation, communication and time management. | Technical report writing.<br>Presentation skills.<br>Investigation skills. |
| <b>8. Duration and structure of Programme</b><br>BSc in Computer Games Software Development.<br><br>3 years full-time; organised on a 2 semester per academic year basis.<br><br>120 credits at level HE4.<br>120 credits at level HE5.<br>120 credits at level HE6.<br><br>All modules are mandatory. |  |  |  |

## **9. Learning, Teaching and Assessment Strategy**

### **Learning and teaching methods**

Active learning is promoted by lecturers, seminars, demonstrations, tutorials, videos and guided student-centred activities.

Practical skills will be acquired through laboratory sessions, demonstrations, assignments and projects.

### **Assessment methods**

Assessment tasks are linked to the learning outcomes of each module, and are normally completed by the end of each module.

Written examinations (closed / open book), essays, assignments, projects, in-class tests (practical, written or online), demonstrations and viva voce.

### **Modules for BSc (Hons) Computer Games Software Development**

| Level | Module Code | Module Title                                       | Credits |
|-------|-------------|--|---------|
| HE4   | CGD1001     | Applied Physics                                    | 20      |
|       | CGD1003     | Programming for Games ( <i>two semesters</i> )     | 40      |
|       | CGD1004     | Games Mathematics                                  | 20      |
|       | GAD1004     | Games Design 1 ( <i>two semesters</i> )            | 40      |
| HE5   | CGD2000     | Mathematical Physics                               | 20      |
|       | CGD2001     | Games Hardware and Peripherals                     | 20      |
|       | CGD2003     | Data Structures for Games                          | 20      |
|       | LCT2500     | Games Entertainment Technology 2                   | 20      |
|       | LCT2502     | Software Engineering                               | 20      |
|       | LCT2614     | Project Skills                                     | 20      |
| HE6   | CGD3002     | Advanced Games Technology ( <i>two semesters</i> ) | 60      |
|       | LCT3001     | Project ( <i>two semesters</i> )                   | 40      |
|       | LCT3003     | Business of Computer Games                         | 20      |

**BSc (Hons) Computer Games Software Development module learning outcome map**

| LEARNIG OUTCOME | CGD1003 | GAD1004 | CGD1001 | CGD1004 | LCT2500 | LCT2502 | CGD2001 | CGD2000 | CGD2003 | LCT2614 | LCT3003 | LCT3001 | CGD3002 |
|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| K1              | X       | X       |         |         | X       |         |         |         | X       |         |         |         | X       |
| K2              | X       | X       |         |         | X       | X       |         |         | X       |         |         | X       | X       |
| K3              |         |         |         |         |         |         |         |         |         |         | X       |         |         |
| K4              | X       | X       | X       | X       | X       | X       |         | X       | X       |         | X       | X       | X       |
| S1              | X       | X       | X       | X       | X       | X       | X       | X       | X       |         |         | X       | X       |
| S2              | X       | X       | X       | X       | X       | X       | X       | X       | X       |         |         | X       | X       |
| S3              |         | X       |         |         |         |         |         |         |         |         | X       |         | X       |
| S4              | X       |         | X       |         | X       | X       | X       | X       | X       |         |         |         | X       |
| C1              |         | X       |         |         |         |         |         |         |         | X       |         |         | X       |
| C2              | X       | X       |         |         | X       | X       | X       |         | X       |         |         |         | X       |
| C3              | X       | X       | X       | X       | X       | X       | X       | X       | X       |         |         |         | X       |
| O1              | X       | X       | X       | X       | X       | X       | X       | X       | X       | X       | X       | X       | X       |
| O2              | X       | X       | X       | X       | X       | X       | X       | X       | X       | X       | X       | X       | X       |
| O3              | X       | X       |         |         | X       | X       |         | X       | X       | X       | X       | X       | X       |
| O4              | X       |         | X       | X       | X       | X       |         | X       | X       | X       |         | X       | X       |
| O5              | X       |         |         |         | X       | X       | X       |         | X       |         |         |         | X       |
| O6              |         | X       |         |         |         |         |         |         |         | X       |         |         | X       |
| O7              |         | X       |         |         |         |         |         |         | X       | X       | X       | X       | X       |
| O8              |         | X       |         |         |         |         |         |         | X       | X       | X       | X       | X       |

**Mapping of Assessment Methods to Modules:** Approximate balance of assessment methods by modules

| ASSESEMENT METHOD (%) | CGD1001 | CGD1003 | CGD1004 | GAD1004 | CGD2000 | CGD2001 | CGD2003 | LCT2500 | LCT2502 | LCT2614 | CGD3002 | LCT3001 | LCT3003 |
|-----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| PRESENTATION          |         | 5       |         | 5       |         |         |         | 5       |         |         | 10      | 10      | 10      |
| PRACTICAL TESTS       |         | 50      |         | 20      |         |         |         |         |         |         |         |         |         |
| COURSE WORK           | 40      | 45      | 50      | 75      | 50      | 50      | 100     | 95      | 50      | 100     | 70      | 90      | 40      |
| IN CLASS TEST         | 30      |         |         |         |         |         |         |         |         |         |         |         |         |
| EXAMINATION           | 30      |         | 50      |         | 50      | 50      |         |         | 50      |         | 20      |         | 50      |

## LEARNING OUTCOMES

### ***Knowledge and understanding***

Graduates will have demonstrated:

- K1 formal understanding of game play & game design.
- K2 knowledge of the underlying theory, concepts and principles of computer game development.
- K3 an understanding of the business constraints and financial requirements in computer game development.
- K4 adequate breadth of skill and knowledge to ensure flexibility.

### **Subject-specific practical/professional skills**

Ability to:

- S1 Use appropriate theory, practice and tools, for the specification, design, and implementation of computer-based games.
- S2 Use core analytical techniques and design tools.
- S3 Work as part of a development team.
- S4 Write computer programs.

### ***Cognitive skills***

Ability to:

- C1 critically evaluate leisure software in both conceptual and completed forms
- C2 analyse and specify computer-based systems for use in interactive entertainment.
- C3 Deploy effectively the methods and tools used in the definition, construction and development of fully functioning computer games.

### ***Other skills***

Capacity to:

- O1 make effective use of general IT facilities
- O2 communicate effectively, orally electronically and in writing.
- O3 manage and organise.
- O4 solve numerical problems and analyse information.
- O5 solve practical programming problems.
- O6 independent study, self-appraisal (reflection) and goal setting
- O7 literature review skills
- O8 employability skills