1. **Title of the module**

EL326/DIGM3260 Virtual Environment Design

1. **Division or partner institution which will be responsible for management of the module**

Computing, Engineering and Mathematical Sciences

1. **The level of the module (Level 4, Level 5, Level 6 or Level 7)**

Level 4

1. **The number of credits and the ECTS value which the module represents**

15 credits (7.5 ECTS)

1. **Which term(s) the module is to be taught in (or other teaching pattern)**

Spring

1. **Prerequisite and co-requisite modules**

None.

1. **The course(s) of study to which the module contributes**

BSc Digital Design

BSc Digital Design with a Year in Industry

BSc Digital Design with a Year Abroad

1. **The intended subject specific learning outcomes.  
   On successfully completing the module students will be able to:**

8.1 Understand basic concepts related to developing real-time applications such as asset management and level design

8.2 Make creative use of visual media to express complex information

8.3 Develop technical skills in real-time 3D development platforms scripting

8.4 Understand and apply principles of virtual environments design workflow to the production of a real-time application.

1. **The intended generic learning outcomes.  
   On successfully completing the module students will be able to:**
   1. Use Information and Communication Technologies

9.2 Present and communicate their creative and technical work in a timely manner

9.3. Work in flexible, creative and independent ways and to think critically

1. **A synopsis of the curriculum**

This module introduces you to the theory, principles and practice behind designing Virtual Environments and enables you to create a real-time application demonstrating the acquired core skills. The module will cover specific production skills needed for the development of assets for various applications, programming concepts for navigating and interacting in Virtual Environments, AI, user interfaces. Theory is followed by practical workshops in different aspects of Virtual Environment design, culminating in project.

1. **Reading list (Indicative list, current at time of publication. Reading lists will be published annually)**

Hocking, J. (2019). Unity in action. Chicago

Okita, A. (2014). Learning C# programming with Unity 3D. CRC Press.

Jacobsen, J., Schlenker, T., & Edwards, L. (2012). *Implementing a digital asset management system: for animation, computer games, and web development*. CRC Press.

Buttfield-Addison, P., Manning, J., & Nugent, T. (2019). Unity Game Development Cookbook: Essentials for Every Game. O'Reilly Media. Chicago

1. **Learning and teaching methods**

Contact hours: 30

Private Study Hours: 120

Total Study Hours: 150

1. **Assessment methods**

13.1 Main assessment method

Assessment of the module is 100% by coursework.

* Project proposal (10%) – 800 words, group work, individually assessed
* Virtual environment design and development (70%) – 9 weeks of development work, group work - individually assessed
* Video essay (20%) – a 3-5 minute video on virtual environment design reflection, individual work

13.2 Reassessment methods

100% coursework.

1. ***Map of module learning outcomes (sections 8 & 9) to learning and teaching methods (section12) and methods of assessment (section 13)***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Module learning outcome** | 8.1 | 8.2 | 8.3 | 8.4 | 9.1 | 9.2 | 9.3 |
| **Learning/teaching method** |  |  |  |  |  |  |  |
| **Private Study** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |
| *Lectures* | **X** | **X** | **X** | **X** |  |  |  |
| *Workshops* | **X** | **X** | **X** | **X** | **X** | **X** |  |
| **Assessment method** |  |  |  |  |  |  |  |
| *Project proposal* |  | **X** |  |  | **X** | **X** | **X** |
| Virtual environment design and development | **X** | **X** | **X** | **X** | **X** | **X** | **X** |
| Video essay |  |  |  | **X** | **X** |  |  |

1. **Inclusive module design**

The Division recognises and has embedded the expectations of current equality legislation, by ensuring that the module is as accessible as possible by design. Additional alternative arrangements for students with Inclusive Learning Plans (ILPs)/declared disabilities will be made on an individual basis, in consultation with the relevant policies and support services.

The inclusive practices in the guidance (see Annex B Appendix A) have been considered in order to support all students in the following areas:

a) Accessible resources and curriculum

b) Learning, teaching and assessment methods

1. **Campus(es) or centre(s) where module will be delivered**

Canterbury

1. **Internationalisation**

Abilities to develop Virtual Environments are already in global demand with increased interest in applications for medicine, architecture, archaeology/heritage, e-commerce, education, training, and the visual arts. This module introduces students to industry-standard software and concepts necessary for developing practical applications in a variety of settings, such as medical, engineering, etc.

**DIVISIONAL OFFICE USE ONLY**

**Revision record – all revisions must be recorded in the grid and full details of the change retained in the appropriate committee records.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date approved | Major/minor revision | Start date of delivery of revised version | Section revised | Impacts PLOs (Q6&7 cover sheet) |
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