## MODULE DESCRIPTOR

### Module Title

C++ for Graphics

| Reference | CM3115 | Version | 1 |
|---|---|---|---|
| Created | April 2017 | SCQF Level | SCQF 9 |
| Approved | August 2017 | SCQF Points | 15 |
| Amended | | ECTS Points | 7.5 |

### Aims of Module

To provide the student with the ability to build interactive 3D graphics applications using relevant technologies.

### Learning Outcomes for Module

On completion of this module, students are expected to be able to:

| | |
|---|---|
| 1 | Explain and analyse techniques used for designing and managing computer graphic scenes. |
| 2 | Evaluate and assess algorithms underlying principles of 2D graphics. |
| 3 | Design and implement interactive programs for creating and implementing 2D objects. |
| 4 | Design and develop graphics applications and environments. |

### Indicative Module Content

Introductions to C++ Programming; Introductions to essential computer graphics concepts and theories; Object Oriented programming for 2D graphics; Algorithms design for 2D graphics; Graphic interface creations and implementations.

### Module Delivery

Key concepts are introduced and illustrated through lectures and directed reading. The understanding of students is tested and further enhanced through interactive tutorials. In the laboratories, the student will progress through a sequence of exercises to develop sufficient knowledge and skills in C++ programming for computer graphics.

| Indicative Student Workload | Full Time | Part Time |
|---|---|---|
| Contact Hours | 48 | N/A |
| Non-Contact Hours | 102 | N/A |
| Placement/Work-Based Learning Experience [Notional] Hours | N/A | N/A |
| TOTAL | 150 | N/A |
| *Actual Placement hours for professional, statutory or regulatory body* | | |

## ASSESSMENT PLAN

*If a major/minor model is used and box is ticked, % weightings below are indicative only.*

### Component 1

| Type: | Coursework | Weighting: | 100% | Outcomes Assessed: | 1, 2, 3, 4 |
|---|---|---|---|---|---|

Description: Graphics development assignment assessing the modules learning outcomes.

## MODULE PERFORMANCE DESCRIPTOR

### Explanatory Text

The calculation of the overall grade for this module is based on 100% weighing of C1. An overall minimum grade D is required to pass the module.

| Module Grade | Minimum Requirements to achieve Module Grade: |
|---|---|
| A | The student needs to achieve an A in C1. |
| B | The student needs to achieve an B in C1. |
| C | The student needs to achieve an C in C1. |
| D | The student needs to achieve an D in C1. |
| E | The student needs to achieve an E in C1. |
| F | The student needs to achieve an F in C1. |
| NS | Non-submission of work by published deadline or non-attendance for examination |

### Module Requirements

| Prerequisites for Module | CM2100 Advanced Software Design and Development or equivalent. |
|---|---|
| Corequisites for module | None. |
| Precluded Modules | None. |

## INDICATIVE BIBLIOGRAPHY

| 1 | C++ How to Program (Early Objects Version) Paperback - 19 Dec 2016, by?Paul Deitel?(Author), Harvey Deitel (Author). |
|---|---|
| 2 | Beginning C++ Through Game Programming, Fourth Edition, by Michael Dawson, July 2014. |
| 3 | Beginning C++, by Ivor Horton, Apress, November 2014. |
| 4 | C++ Recipes, A Problem-Solution Approach, by Bruce Sutherland. Apress; May 2015. |
| 5 | C++ Standard Library Quick Reference, by Peter Van Weert, Marc Gregoire, Apress; June 2016. |
| 6 | Learn C++ for Game Development, by Bruce Sutherland, Apress; June 2014. |