

COMP220

Graphics & Simulation



20 credits
Compulsory for BSc Computing for Games
Brian McDonald

Introduction

On this module you will develop your understanding of 3D graphics rendering and physics simulation used in modern computer games. Using the OpenGL library, you develop your coding skills in the context of graphics technologies and pipelines and gain an understanding of the operation of simulated virtual environments. You will also engage practically and creatively to draft physics processing and graphics rendering pipelines in order to change their behaviours and create distinctive visual styles suited to your individual or group game concept.

Aims

This module aims to help you:

- ▶ Gain an understanding and knowledge of graphics and simulation technology
- ▶ Build an understanding of rendering and physics pipelines
- ▶ Gain experience of how to creatively leverage the capabilities of graphics and simulation technologies

LO**Learning Outcomes**

- 1 Show a basic understanding of creative computing solutions using professional techniques.
- 2 Show a basic understanding of how to communicate effectively with stakeholders in writing, verbally and through adherence to coding standards.
- 3 Show a basic development of the ability to reflect critically on and evaluate working methods and solutions.
- 4 Show a basic understanding of the ability to conduct research, present knowledge in an academic format and apply that research to practice.
- 6 Show a basic understanding of methods used to help set goals, manage workloads to meet deadlines and to work collaboratively.

Assessment Criteria

- Change the way that a graphics engine behaves and demonstrate an understanding of graphics rendering engines.
- Show a basic understanding of how to communicate effectively with stakeholders in writing, verbally, and through adherence to coding standards. Annotate software to communicate with others effectively.
- Reflect critically on the behaviour change intended and its visual structure and explain the rationale for working method and graphics-based solution.
- Understand and apply knowledge of rendering pipelines used to produce changes in graphics engine behaviour.
- Show understanding of how to plan and organise time to meet deadlines and fulfil a brief.

Academic Staff	Brian McDonald Dr Edward Powley (Moderator)	
Assignments	Portfolio of Game Engine Components Research Journal	90% 10%
Indicative Hours	Sessions Directed Reading Portfolio of Game Engine Components Integration into Collaborative Game Research Journal Self-Directed Study Self-Directed Studio Practice	36 hours 18 hours 55 hours 20 hours 7 hours 24 hours 40 hours 200 hours

Each study block represents 600-hours of study. This means that 40 hours of study per week (including contact time) is expected, alongside a further 120-hours of studio practice across the assessment period.

Additional Resources

Session Plans & Materials:

<http://learningspace.falmouth.ac.uk/course/view.php?id=1255>

Assignment Briefs:

<http://github.com/falmouth-games-academy/bsc-assignment-briefs/tree/2017-18/comp220>

Reading List:

<http://resourcelists.falmouth.ac.uk/modules/comp220>