Module name | Games Technology
---|---
Module code | IN2026
School | Mathematics, Computer Science and Engineering
Department or equivalent | Department of Computing
UK credits | 15
ECTS | 7.5
Level | 5
Delivery location (partnership programmes only) | 

**MODULE SUMMARY**

Module outline and aims

Focus on the core skills of game development, from design to implementation.

The module will introduce aspects of both game and game engine design, including an overview of the structure of a typical game development company. Different genres of computer and video games will be discussed, set within their historical context. You will cover typical technologies contributing to a video game engine including graphics, sound, user interface and simple artificial intelligence (AI). A series of practical implementation tasks will provide the opportunity to develop the components of a game engine corresponding with these technologies. You will use the knowledge and skills taught in this module to implement a simple playable game prototype in C++.

Content outline

- Overview of game history and genres.
- Game design issues including real-time and NPC behaviours.
- Game components, including: 2D graphics programming in C++.
Game engine architecture, including sound, physics and networked gaming.

**Pre-requisite Modules**

<table>
<thead>
<tr>
<th>Module Code</th>
<th>Module Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN1007</td>
<td>Programming in Java</td>
</tr>
<tr>
<td>IN2029</td>
<td>Programming in C++</td>
</tr>
</tbody>
</table>

**WHAT WILL I BE EXPECTED TO ACHIEVE?**

On successful completion of this module, you will be expected to be able to:

**Knowledge and understanding:**

- Explain the components of a core game engine.
- Explain specialist issues concerned with real-time games design.
- Explain the principles of simple game design, including their historical context.

**Skills:**

- Define and animate 2-D graphic objects under program control.
- Define and implement simple game audio, non-player character behaviours, and simple game user interfaces.
- Design, create and animate a simple 2-D game world.

**Values and attitudes:**

- Develop a professional approach to management of a programming project.

**HOW WILL I LEARN?**

Lectures and Laboratory Sessions.

*Teaching pattern:*

<table>
<thead>
<tr>
<th>Teaching component</th>
<th>Teaching type</th>
<th>Contact hours</th>
<th>Self-directed study hours</th>
<th>Placement hours</th>
<th>Total student learning hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures</td>
<td>Lecture</td>
<td>20</td>
<td>60</td>
<td>0</td>
<td>80</td>
</tr>
<tr>
<td>Games Laboratory</td>
<td>Practical classes and workshops</td>
<td>10</td>
<td>60</td>
<td>0</td>
<td>70</td>
</tr>
</tbody>
</table>

**Totals**

|               | 30 | 120 | 0 | 150 |

**WHAT TYPES OF ASSESSMENT AND FEEDBACK CAN I EXPECT?**

*Assessments*

Written Examination and a Simple Games Demonstration.
In case of failure, the reassessment tasks will be set according to the University Assessment Regulations.

Assessment pattern:

<table>
<thead>
<tr>
<th>Assessment component</th>
<th>Assessment type</th>
<th>Weighting</th>
<th>Minimum qualifying mark</th>
<th>Pass/Fail?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple Games Demonstration</td>
<td>Written assignment, including essay</td>
<td>30</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>Written Examination</td>
<td>Written Exam</td>
<td>70</td>
<td>0</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Assessment criteria

Assessment Criteria are descriptions of the skills, knowledge or attributes you need to demonstrate in order to complete an assessment successfully and Grade-Related Criteria are descriptions of the skills, knowledge or attributes students need to demonstrate to achieve a certain grade or mark in an assessment. Assessment Criteria and Grade-Related Criteria for this module’s assessment will be made available to you at the beginning of the module in the handbook available on Moodle. The module leader will also discuss these in one of the face to face sessions.

Feedback on assessment

Feedback will be provided in writing via Moodle following the marking and moderation of your assessment in line with the Assessment Regulations and Policy. This will happen within three weeks of your submission.

You can arrange to see the module leader or your personal tutor about any feedback you have been given and are advised to use this in future modules when the criteria relate to transferable areas such as presentation, use of literature and theory and ability to analyse, evaluate or synthesise.
Assessment Regulations

The Pass mark for the module is 40%. The Programme Specification contains information on what happens if you fail an assessment component or the module.

INDICATIVE READING LIST


Further reading will be provided in class and on-line in the website for this module on Moodle (moodle.city.ac.uk).