

## Course Specification

Course Summary Information			
1	<b>Course Titles</b>		BSc (Hons) Computer Games Technology with Foundation Year
2	<b>BCU Course Codes</b>	<b>UCAS Codes</b>	BSc (Hons) US0667F
3	<b>Awarding Institution</b>		
4	<b>Teaching Institution(s)</b> (if different from point 3)		
5	<b>Professional Statutory or Regulatory Body (PSRB) accreditation</b> (if applicable)		

6	Course Description
	<p>BSc (Hons) Computer Games Technology is a course that focusses on the technical expertise required to develop computer games. The core modules deep-dive into 2D and 3D graphics rendering, physics, artificial intelligence and human-computer interaction required for the development of high-end computer games platforms. The course will also involve working in small and large multi-disciplinary (creative and technical) teams for the development of computer games.</p> <p>While studying your computer games degree, you will use our state-of-the-art computer games technology lab, which is kitted with high-performance PCs with dual monitors and cutting-edge GPUs, Sony PlayStation, Nintendo Switch and XBox development kits, as well as a variety of industry standard software.</p> <p>Our collaborations with Microsoft, Unity and Sony, coupled with our state-of-the-art technology will help you develop the skills you need to be successful in the games industry and beyond.</p> <p>This course aims to develop critical, current, analytical and agile graduates, who:</p> <ul style="list-style-type: none"> <li>• produce computer games in a legal and ethical manner;</li> <li>• have a diverse understanding of the key issues that exist in games development;</li> <li>• combine the critical faculties that derive from a traditional academic degree with the professional skills and flexibility needed to get the best jobs in the games development industry;</li> <li>• can manage their own personal development and lifelong learning;</li> <li>• are equipped to be familiar with a variety of contemporary industry tools and agile enough to respond to new technologies and consumer trends.</li> </ul> <p><b>What's covered in the course?</b></p> <p>On the course, you will learn a range of technical and professional skills, including understanding fundamentals and advanced coding practices, graphics programming, network communications and artificial intelligence. You will work independently and in teams, as well as develop strong written and oral communication skills.</p>

	<p>The course philosophy highlights the importance of going beyond your studies – therefore, we encourage you to participate in many extracurricular activities. As we are located in the heart of Birmingham City Centre, we are close to many independent game studios, who host events throughout the year. We also regularly participate in international game development competitions such as Global Game Jam and Microsoft’s Imagine Cup, all of which give you the opportunity to showcase your talent on a wider stage, and network with others in the industry.</p> <p>You will not only learn about mainstream and traditional video game development, but also explore allied and emerging disciplines such as serious and educational game development, augmented and virtual reality, as well as simulations.</p> <p>You’ll have the opportunity to execute a 30-week work placement in the industry, which you can complete at home or overseas. The experience allows you to place the specialist knowledge and skills acquired on the course in a real world working context. The experience will allow you to create a network of professional contacts, and build your CV, both of which are essential for entering the job market.</p> <p>Upon graduation, you could progress into a range of careers in the game industry, for example game or graphics programmer, tools programmer or QA tester in either larger companies or independent studios. You will also have the skills to enable you to work in allied disciplines such as a serious or educational game developer. Alternatively, you could work in more traditional computing or software engineering roles, start your own company or progress into further education.</p>
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<b>7</b>	<b>Programme Awards</b>		
<b>7a</b>	<b>Possible Final Awards for the Computer Games Technology course</b>	<b>Level</b>	<b>Credits Awarded</b>
	<b>For BSc (Hons):</b>		
	Bachelor of Science with Honours Computer Games Technology	6	360 (480)*
	Bachelor of Science with Honours Computer Games Technology with Professional Placement Year	6	480 (600)*
<b>7b</b>	<b>Possible Exit Awards and Credits Awarded for the Computer Games Technology course</b>		
	Foundation Certificate Computing	3	120
	Certificate of Higher Education Computer Games Technology	4	120 (240)*
	Diploma of Higher Education Computer Games Technology	5	240 (360)*
	Bachelor of Science Computer Games Technology	6	300 (420)*
	(*)* - including Foundation Year credits		

<b>8</b>	<b>Derogation from the University Regulations</b>
	Not applicable

<b>9 Delivery Patterns</b>			
<b>Mode(s) of Study</b>	<b>Location</b>	<b>Duration of Study</b>	<b>Code</b>
Foundation Year	City Centre	1 year	US0667F
BSc (Hons) Full Time	City Centre	3 years	US0667
BSc (Hons) with Professional Placement Year	City Centre	4 years	US1084

<b>10 Entry Requirements</b>	
<p>The admission requirements for this course are stated on the course page of the BCU website at <a href="https://www.bcu.ac.uk/">https://www.bcu.ac.uk/</a> or may be found by searching for the course entry profile located on the UCAS website.</p>	

<b>11 Course Learning Outcomes</b>	
<b>Knowledge &amp; Understanding</b>	
<b>1</b>	Understand the different processes and life cycles that are needed to develop games.
<b>2</b>	Understand the role different technologies play in developing games.
<b>3</b>	Understand the importance that different communication strategies play in articulating ideas and achievements to a range of audiences.
<b>4</b>	Understand the need to respond to technical and business changes associated with the industry sector on a local and global level.
<b>Cognitive &amp; Intellectual Skills</b>	
<b>5</b>	Justify and explain approaches and decisions made in developing games.
<b>6</b>	Differentiate and evaluate a range of approaches and tools that are needed to develop games.
<b>7</b>	Appreciate the importance of interdisciplinary collaboration; embrace differing viewpoints and acknowledge diverse input into the development of games.
<b>8</b>	Apply reflective skills and be able to critically evaluate information and subsequently formulate conclusions.
<b>Practical &amp; Professional Skills</b>	
<b>9</b>	Develop a wide range of intellectual, practical and technical skills that can be applied to the development of games and to other allied computing sectors.
<b>10</b>	Gain confidence to learn to implement a range of industry standard technologies that are needed to make games
<b>11</b>	Appreciate the wider and global context of the impact of the work.
<b>12</b>	Develop organisation and presentations skills to a professional standard.
<b>Key Transferable Skills</b>	
<b>13</b>	Research, devise and implement solutions to problems.
<b>14</b>	Develop confidence to learn new skills.
<b>15</b>	The ability to work independently and within teams in order to solve complex problems.
<b>16</b>	Communicate and articulate ideas, concepts and solutions effectively to diverse audiences.

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<b>12a</b>	<p><b>Level 3:</b></p> <p><i>In order to complete this course a student must successfully complete all the following CORE modules (totalling 120 credits):</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #ffffcc;">Module Code</th> <th style="background-color: #ffffcc;">Module Name</th> <th style="background-color: #ffffcc;">Credit Value</th> </tr> </thead> <tbody> <tr><td>CMP3010</td><td>Fundamental Mathematics</td><td>20</td></tr> <tr><td>CMP3014</td><td>Fundamentals of Digital Technology</td><td>20</td></tr> <tr><td>CMP3012</td><td>Web Application Design</td><td>20</td></tr> <tr><td>CMP30xx</td><td>Emerging Technologies</td><td>20</td></tr> <tr><td>CMP30xx</td><td>Independent Practice</td><td>20</td></tr> <tr><td>CMP3009</td><td>Foundations of Programming</td><td>20</td></tr> </tbody> </table> <p><b>Level 4:</b></p> <p><i>In order to complete this course a student must successfully complete all the following CORE modules (totalling 120 credits):</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #ffffcc;">Module Code</th> <th style="background-color: #ffffcc;">Module Name</th> <th style="background-color: #ffffcc;">Credit Value</th> </tr> </thead> <tbody> <tr><td>CMP4264</td><td>2D Game Programming</td><td>20</td></tr> <tr><td>CMP4274</td><td>3D Game Programming</td><td>20</td></tr> <tr><td>CMP4272</td><td>Data Structures and Algorithms</td><td>20</td></tr> <tr><td>DIG4172</td><td>Modelling</td><td>20</td></tr> <tr><td>CMP4293</td><td>Game Asset Pipeline</td><td>20</td></tr> <tr><td>CMP4271</td><td>Professional Practice for Game Development</td><td>20</td></tr> </tbody> </table> <p><b>Level 5:</b></p> <p><i>In order to complete this course a student must successfully complete all the following CORE modules (totalling 120 credits):</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #ffffcc;">Module Code</th> <th style="background-color: #ffffcc;">Module Name</th> <th style="background-color: #ffffcc;">Credit Value</th> </tr> </thead> <tbody> <tr><td>DIG5116</td><td>Collaborative Practice</td><td>20</td></tr> <tr><td>CMP5362</td><td>Game Studio Production</td><td>20</td></tr> <tr><td>CMP5359</td><td>Computer Graphics</td><td>20</td></tr> <tr><td>CMP5360</td><td>Web Game Development</td><td>20</td></tr> <tr><td>CMP5327</td><td>C++ Programming for Games</td><td>20</td></tr> <tr><td>CMP5363</td><td>Game Engine Architecture</td><td>20</td></tr> </tbody> </table> <p><b>Professional Placement Year (optional)</b></p> <p><i>In order to qualify for the awards of Bachelor of Science with Honours Computer Games Technology with Professional Placement Year or Integrated Masters of Science Computer Games Technology with Professional Placement Year, a student must successfully complete all of the modules listed as well as the following Level 5 module:</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #ffffcc;">Module Code</th> <th style="background-color: #ffffcc;">Module Name</th> <th style="background-color: #ffffcc;">Credit Value</th> </tr> </thead> <tbody> <tr> <td style="background-color: #ffffcc;">PPY5004</td> <td style="background-color: #ffffcc;">Professional Placement</td> <td style="background-color: #ffffcc;">120</td> </tr> </tbody> </table>	Module Code	Module Name	Credit Value	CMP3010	Fundamental Mathematics	20	CMP3014	Fundamentals of Digital Technology	20	CMP3012	Web Application Design	20	CMP30xx	Emerging Technologies	20	CMP30xx	Independent Practice	20	CMP3009	Foundations of Programming	20	Module Code	Module Name	Credit Value	CMP4264	2D Game Programming	20	CMP4274	3D Game Programming	20	CMP4272	Data Structures and Algorithms	20	DIG4172	Modelling	20	CMP4293	Game Asset Pipeline	20	CMP4271	Professional Practice for Game Development	20	Module Code	Module Name	Credit Value	DIG5116	Collaborative Practice	20	CMP5362	Game Studio Production	20	CMP5359	Computer Graphics	20	CMP5360	Web Game Development	20	CMP5327	C++ Programming for Games	20	CMP5363	Game Engine Architecture	20	Module Code	Module Name	Credit Value	PPY5004	Professional Placement	120
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**Level 6:**

*In order to complete this course a student must successfully complete all the following CORE modules (totalling 120 credits):*

Module Code	Module Name	Credit Value
CMP6200	Individual Honours Project	40
CMP6206	Artificial Intelligence for Games	20
CMP6187	Mobile Game Development	20
CMP6181	Console Game Development	20
DIG6107	Game Audio	20

**12b Structure Diagram**

<b>Semester</b>	<b>Level 3 – Year 1</b>		
<b>1</b>	Fundamental Mathematics 20 Credits	Fundamentals of Digital Technology  20 Credits	Web Application Design 20 Credits
<b>2</b>	Independent Practice  20 Credits	Independent Practice 20 Credits	Emerging Technologies  20 Credits
<b>Semester</b>	<b>Level 4 – Year 2</b>		
<b>1</b>	Professional Practice for Game Development  20 Credits	Modelling  20 Credits	2D Game Programming  20 Credits
<b>2</b>	Data Structures and Algorithms  20 Credits	Game Asset Pipeline  20 Credits	3D Game Programming  20 Credits
<b>Level 5 – Year 3</b>			
<b>1</b>	Game Studio Production  20 Credits	Web Game Development  20 Credits	C++ Programming for Games 20 Credits
<b>2</b>	Collaborative Practice  20 Credits	Computer Graphics  20 Credits	Game Engine Architecture  20 Credits
<b>Professional Placement - Year 4 (optional)</b>			
<b>Professional Placement Module 120 Credits</b>			
<b>Level 6 – Year 5</b>			
<b>1</b>	Mobile Game Development  20 Credits	Artificial Intelligence for Games  20 Credits	Individual Project  40 Credits
<b>2</b>	Game Audio  20 Credits	Console Game Development  20 Credits	

## 13 Overall Student Workload and Balance of Assessment

Overall student *workload* consists of class contact hours, independent learning and assessment activity, with each credit taken equating to a total study time of around 10 hours. While actual contact hours may depend on the optional modules selected, the following information gives an indication of how much time students will need to allocate to different activities at each level of the course.

- *Scheduled Learning* includes lectures, practical classes and workshops, contact time specified in timetable
- *Directed Learning* includes placements, work-based learning, external visits, on-line activity, Graduate+, peer learning
- *Private Study* includes preparation for exams

The *balance of assessment* by mode of assessment (e.g. coursework, exam and in-person) depends to some extent on the optional modules chosen by students. The approximate percentage of the course assessed by coursework, exam and in-person is shown below.

### Level 3

#### Workload

#### 37% time spent in timetabled teaching and learning activity

Activity	Number of Hours
Scheduled Learning	456
Directed Learning	400
Private Study	344
<b>Total Hours</b>	<b>1200</b>

#### Balance of Assessment

Assessment Mode	Percentage
Coursework	78%
Exam	0
In-Person	22%

### Level 4

#### Workload

#### 24% time spent in timetabled teaching and learning activity

Activity	Number of Hours
Scheduled Learning	288
Directed Learning	350
Private Study	562
<b>Total Hours</b>	<b>1200</b>

#### Balance of Assessment

Assessment Mode	Percentage
Coursework	80%
Exam	0
In-Person	20%

**Level 5**
**Workload**
**24% time spent in timetabled teaching and learning activity**

<b>Activity</b>	<b>Number of Hours</b>
Scheduled Learning	288
Directed Learning	418
Private Study	494
<b>Total Hours</b>	<b>1200</b>

**Balance of Assessment**

<b>Assessment Mode</b>	<b>Percentage</b>
Coursework	80%
Exam	0
In-Person	20%

**Level 6**
**Workload**
**17% time spent in timetabled teaching and learning activity**

<b>Activity</b>	<b>Number of Hours</b>
Scheduled Learning	202
Directed Learning	288
Private Study	710
<b>Total Hours</b>	<b>1200</b>

**Balance of Assessment**

<b>Assessment Mode</b>	<b>Percentage</b>
Coursework	74%
Exam	0
In-Person	26%