Birmingham City University
Faculty of Computing, Engineering and the Built Environment

Undergraduate Programme

Programme Specification

BSc (Hons) Computer Games Technology

Date of Course Approval/Review	Version Number	Version Date
7 May 2009	3.04	17 May 2017

CONTENTS

Definitive Documents and Version Control

This document has a version number and reference date in the footer.

The process leading to the introduction of new courses, major changes to courses, and minor changes to courses and modules follows the appropriate formal procedure as described in the Faculty's Academic Procedures and Quality Manual.

On the front sheet of this document, the date of course approval/review refers to the most recent full approval/review event. The version date will be that of the most recent event at which formal consideration was given to course changes.

Further details about the course and document development may be obtained from minutes of the approval or minor changes board. A history of the document since the last full approval/review event is summarised in the table below and further information relating to past versions can be obtained from the Faculty Office.

Version	Event	Date of event	Authorised by
3.01	Approval meeting	7 May 2009	Dean of Faculty
3.02	Approval meeting - conditions	11 June 2009	Panel Chair
3.03	Minor changes Board of Studies	18 June 2010	Dean of Faculty
3.04	Minor changes Board of Studies	17 May 2017	Dean of Faculty

Programme Specification

BSc (Hons) Computer Games Technology

Date of Publication to Students: September 2009

NOTE: This specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes advantage of the learning opportunities that are provided. More detail on the specific learning outcomes, indicative content and the teaching, learning and assessment methods of each module can be found (1) at https://mytid.bcu.ac.uk, (2) in the Module Specifications and (3) in the Student Handbook.

The accuracy of the information contained in this document is reviewed by the University and may be checked within independent review processes undertaken by the Quality Assurance Agency.

Awarding Institution / Body:	Birmingham City University
Teaching Institution:	Birmingham City University
Interim Awards and Final Award:	Cert HE / Dip HE / BSc / BSc (Hons)
Programme Title:	Computer Games Technology
Main fields of Study:	Computer game development, programming and technology. Mobile and web technology. Artificial intelligence.
Modes of Study:	FT/PT/SW
Language of Study:	English
UCAS Code:	G450
JACS Code:	H600

Professional Status of the programme (if applicable):

The programme will be submitted for accreditation by the Institution of Engineering and Technology (IET) and by Skillset.

Relevant subject benchmark statements and other external reference points used to inform programme outcomes:

QAA benchmarks statements for engineering.
Skillset accreditation criteria.

Programme philosophy and aims

Computer games industry is established but still rapidly developing. It spans traditional entertainment through to a means of supporting education and training - what has become known as serious games.

The course is intended to take a holistic approach to video game development. Emphasis is placed on technological skills, for example hardware / software aspects of game development, as well as the people and communication skills that are necessary for effective software development such as teamwork, management and documentation.

The breadth of subjects taught on this course, together with the embedded transferable skills means that employment possibilities are expected to extend beyond the games industry with graduates having the opportunity to expand their skills into other computing specialities or related industries.

The aims of the programme are to provide:

- a broadly-based curriculum which combines study of computer technology, programming and creative media applications relevant to the games industry;
- opportunities for development of intellectual and creative abilities through the application of technical knowledge and practical skills for the design and implementation of a range of game and game related technologies;
- transferable knowledge and skills applicable to a variety of roles in the computer games and associated industries;
- a rewarding educational experience through involvement in participative and active learning approaches;
- an appreciation of business, legal and ethical issues relating to computer games industries;
- a foundation of principles and techniques which facilitate future professional development and lifelong learning;
- qualification designed to satisfy accreditation requirements of relevant professional bodies.

Intended learning outcomes and the means by which they are achieved and demonstrated:

Learning Outcomes
On completion of the course, students should be able to:

1. Knowledge and Understanding

KU1. Demonstrate knowledge and understanding of essential facts, concepts, theories and principles of computer games, and its underpinning science and mathematics;

KU2. demonstrate appreciation of the wider multidisciplinary computer game technology and programming and its underlying principles;

KU3. demonstrate appreciation of the social, environmental, ethical, economic and commercial considerations that impact on the processes of computer networking;

KU4. apply business management and organisational theories and techniques applied to a successful computer game technology with the legal and regulatory systems within which they operate;

KU5. demonstrate understanding of relevant ethical, legal and professional issues applicable to rapidly evolving technology based business.

2. Intellectual Skills

IS1. Use proficiently information and materials from a variety of sources for independent enquiry and learning;

IS2. demonstrate creative and innovative ability in the synthesis of solutions for computer games systems;

IS3. draw independent conclusions based on a rigorous, analytical and critical assessment of argument, opinion and data;

IS4. apply appropriate quantitative techniques and engineering tools to the analysis of problems;

IS5. demonstrate creative and innovative ability in the synthesis of solutions and in formulating designs in computer games;

IS6. select appropriate hardware and software tools and techniques for the implementation of computer games technology;

IS7. use relevant analytical and modelling techniques for specification and design of computer games systems;

3. Practical Skills

PS1. demonstrate practical skills acquired through work carried out in laboratories and workshops in individual and/or group project work;

PS2. manage a major project in a computer games technology field;

PS3. design and implement hardware and software solutions in computer games technologies;

PS4. set up, test and administer systems for effective use;

PS5. implement applications using appropriate methodologies, tools and techniques;

PS6. troubleshoot and diagnose network systems using appropriate procedures and tools.

4. Transferable/Key Skills

TS1. monitor, record, present, analyse and interpret data;

TS2. use Information and Communications Technology;

TS3. communicate effectively through written and presentation tasks;

TS4. manage time, prioritise activities and work to timescales;

TS5. reflect on progress and plan for personal and career development.

Learning teaching, and assessment methods used

Knowledge and understanding are acquired through formal lectures, computer networked practical areas, laboratory experiments, seminars and other directed independent learning activities.
A range of assessment methods are employed, the criteria for each module being published within each specified module guide and assignment briefs.
Knowledge is assessed, formatively and summatively, by a number of methods, including seminars, coursework, examinations (seen and unseen, open- and closed-book), presentations, and practical work.

Intellectual skills are developed through teaching and learning programme previously outlined.

Analytical and problem solving skills are developed using a range of case-studies

and problem / task based learning scenarios.

Assessment activities include practical work, individual and group work, presentations, written coursework, laboratory experimentation, examinations (seen and unseen, open and closed book).

The acquisition of appropriate **practical skills** is central to the learning strategy of the programme. Initiative and independence are fostered throughout, and develop incrementally as the course progresses. Emphasis is placed on guided, self-directed and student-centred learning, with increasing independence of approach, thought and process.

Learners develop **research skills** in module activities and assessments and by undertaking a major individual project and completing a related dissertation.

Transferable/key skills are core to the learning strategy of the programme. They are pervasive, and are incorporated into modules and assessments as appropriate, e.g. team-working skills are fostered via group, task-based practical projects.

Learners are encouraged to plan their own work schedules and are required to meet deadlines.

Reflection and self awareness are fostered by keeping logbooks and attending tutor interviews in support of personal performance.

The use of information technology plays an active role throughout the course.

Assessment methods include practical projects, presentations, coursework, peer- and self-assessment.

Programme structure and requirements, levels, modules, credits and awards

The structure of the course, the modules, levels and credit values, and the awards which can be gained are shown in the diagram below.

BSc (Hons) Computer Games Technology

Level 6 (Year 3)

30 credits CMP6102 Individual Project UG3	15 Credits CMP6168 Mobile and Web Technology I UG3	15 Credits CMP6204 Mobile Development for games	15 Credits CMP6087 Artificial Intelligence and Machine Learning UG3	15 Credits CMP6171 Artificial Intelligence For Games UG3	15 Credits CMP6066 Games Graphics Programming UG3	15 Credits CMP6067 Games Console Programming UG3

Level 5 (Year 2)

15 Credits CMP5313 Technology Start Up UG2	15 Credits CMP5067 Open Systems UG2	15 Credits CMP5315 Network Game Programming UG2	15 Credits CMP5312 Quality of Service in Network Environments UG2	15 Credits CMP5314 Games Engines II UG2	15 Credits CMP5316 3D Game Development UG2	15 Credits CMP5136 C++ Programming for Game Engines UG2	15 Credits CMP5137 Programming Game Engines UG2

Level 4 (Year 1)

15 Credits CMP4 262 Data Structures and Algorithms UG1	15 Credits CMP4097 Data Analysis UG1	30 Credits CMP4096 Computer Systems Technology UG1	15 Credits CMP4183 Game Engines UG1	15 Credits CMP4184 Game Design UG1	15 Credits CMP4185 Introduction to 2D Game Programming UG1	15 Credits CMP4185 Introduction to 3D Game Programming UG1

Awards
Successful completion of Modules at Level 4 leads to the award of Certificate of Higher Education
Successful completion of Modules at Level 4 and 5 leads to the award of Diploma of Higher Education
Successful completion of Modules at Level 4, 5 and 6 leads to the award of Bachelor of Science with Honours.

Support for Learning including Personal Development Planning (PDP)

Students are encouraged to identify and, with guidance, to reflect on their own learning needs and are offered the following support as appropriate to meet those needs:

- an induction programme dealing with orientation and the dissemination of essential information, including an introduction to PDP;
- a dedicated Learning Centre with open access learning materials, resources and full-time staff specialising in a variety of support areas;
- a Student Handbook, containing information relating to the University, Faculty, course and modules;
- access to administrative staff and to academic staff, including the Tutors, Course Director and Programme Manager, at reasonable times;
- support staff to advise on pastoral and academic issues, and to offer support and assistance with the keeping of Students' Progress Files;
- access to Faculty resources, including a range of IT equipment and the services of, and guidance from, IT support staff;
- access to the University's Student Services, including those offered by the careers service, financial advisers, medical centre, disability service, crèche, counselling service and chaplaincy;
- resources for Professional Development Planning (PDP) to enable reflection on learning, performance and achievement and to plan personal, educational and career development. The university offers a range of on-line courses (www.moodle.bcu.ac.uk) to support PDP topics including: Reflection, Career & Employability, Action Planning, Self Awareness and Self Employment.

Criteria for admission

Candidates must satisfy the general admissions requirements of the programme, which are as follows:

Entry requirements are in accordance with section D of the University's Academic Regulations and Policies.

All applicants must have GCSE (grade C or above) in Mathematics and English Language, or equivalent. In addition, applicants should have one of the following, for which the typical tariff offer is 280 points for Curriculum 2000, or equivalent for other qualifications. Actual tariff offers may vary from 280 points.

Qualification	**Requirements**
Curriculum 2000, A Levels	Five GCSEs/GCEs including at least two subjects at A2 level. Points tariff can include AS level
Curriculum 2000, AVC.	Two 6-unit or one 12-unit AVCE.
Irish Leaving Certificate	Passes in four subjects at the higher grade.
Scottish Certificate of Education	Passes in four subjects at the higher grade.
International Baccalaureate or European Baccalaureate	
BTEC/Edexcel National Certificate/National Diploma	
A pass in a recognised Access or Foundation Year course	
An appropriate Advanced General National Vocational Qualification	
A professional qualification of an appropriate standard	
A qualification deemed equivalent to one of the above	

Other learning and experience may be considered for entry to the programme. A student may be allowed entry to the course if he or she does not have the standard entry qualifications but can provide evidence of necessary knowledge and skills to successfully enter and complete the programme.

Applicants with a Higher National Certificate or Higher National Diploma, including Merits, in an appropriate subject, or an equivalent qualification, may be offered entry with advanced standing.

UCAS applicants are invited to register for one of the CEBE's special programme of UCAS visit days held throughout the academic year. UCAS visit days include a tour of facilities and an introduction to the CEBE's courses and activities. Meetings are arranged between course tutors and prospective students to ensure opportunity is provided for individual questions and clarification of the course content.

Methods for evaluation and enhancement of quality and standards including listening and responding to views of students

The following Faculty committees are involved in evaluation and enhancement of quality, standards and student experience:

- Student Feedback Forums,
- Student Academic Boards,
- Faculty Academic Board, and the
- University's Academic Board.

These are supported by the

- Student Experience, Learning and Teaching Committee
- Student Voice Committee
- Technology Enhanced Learning and Teaching Committee
- Student Complaints, Appeals and Discipline Committee
- Academic Standards and Quality Enhancement Committee, including sub-Boards and Panels

The complete structure can be seen below.

Review and evaluation processes in which students are involved include annual course and module reviews, course review and re-approval events, professional body accreditation visits and external examiner visits.

Mechanisms for student input include meetings with course tutors, feedback questionnaires, faculty and university student satisfaction surveys and representation on the faculty committees referred to above.

External examiners are members of examination boards and their remit includes meeting students and monitoring and reporting on academic standards.