PROGRAMME SPECIFICATION - UNDERGRADUATE PROGRAMMES

KEY FACTS

Programme name	Computer Science with Games Technology (with Integrated Foundation Year)
Award	BSc (Hons)
School	School of Mathematics, Computer Science and Engineering
Department or equivalent	Computer Science
UCAS Code	G49F
Programme code	USGTEF
Type of study	Full Time, Professional Pathway
Total UK credits	480
Total ECTS	240

PROGRAMME SUMMARY

The BSc (Hons) in Computer Science with Games Technology (with Integrated Foundation Year) will prepare you for a successful career in technical areas of the computing profession, specialising in computer games technology. You will develop expertise in programming and the design and build of a broad range of computer systems; core skills that are sought after throughout the computing industry & games development businesses.

The programme establishes the theoretical underpinning of computer science and builds practical skills such as programming and software engineering as a foundation to enable you to progress onto advanced topics with a focus on practical application for games development and wider computing roles whilst maintaining a strong theoretical underpinning. A 450 hour individual project will allow you to carry out an extended piece of work under the supervision of one of our specialist academic and research staff, applying your skills in games technology The programme will also provide you with the professional skills essential for developing your career in todays computing industry.

The BSc (Hons) in Computer Science with Games Technology (with Integrated Foundation Year) is a full-time four-year Undergraduate Programme, with the option of a one-year industrial placement and a place on our Professional Pathway Scheme. The programme consists of four Programme Stages, each corresponding to an academic year. Programme Stage 0 is intended to bring you up to the same standard as students joining the main degree directly into the first year. The programme shares Programme Stage 1 with the BSc (Hons) Computer Science with Games Technology, the BSc (Hons) and MSci (Hons) in Computer Science, the MSci (Hons) in Computer Science with Cyber Security and you can transfer to/from these programmes at the end of Programme Stage 1. The programme also shares Programme Stage 2 with MSci (Hons) Computer Science with Games Technology and it is possible to transfer to this programme at the end of Programme Stage 2. Additionally, it is possible to transfer from this programme to the BSc (Hons) or MSci (Hons) Computer Science programmes and to the MSci (Hons) Computer Science with Cyber Security at the end of Programme Stage 2. These transfers allow you to choose your final degree programme based on at least a year's experience of university study.

Each of the four Programme Stages of the programme consists of 120 credits:

- Programme Stage 0 consists core material in computing and mathematics with an additional course on employability.

- Programme Stage 1 develops the foundational material and key computing skills, including programming and databases.

- Programme Stage 2 consists of further compulsory core computer science subject matter, specialist games technology and includes a 30-credit team project.

- You may elect to take an industrial placement between Programme Stage 2 and Programme Stage 3.

- Programme Stage 3 consists of one core module and four elective modules allowing you to develop specialisms in computer games technology, and a large, 45-credit individual project supervised by a member of academic staff

WHAT WILL I BE EXPECTED TO ACHIEVE?

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

Knowledge and understanding:
- Demonstrate knowledge of a range of aspects of computer games technology

- Explain techniques used in games development

- Use and explain the core concepts and theories of computer science and computer applications

- Discuss scientific and engineering practice and theory in computing and extend your knowledge through self-led study

- Discuss management issues concerning the planning, design and delivery of computer-based systems

- Identify and model requirements for specialised computing systems and propose and evaluate solutions to fulfil them

- Demonstrate knowledge of systems architecture

- Use appropriate theories, practices and tools for the specification, design, implementation and evaluation of computer-based systems

- Explain security issues in relation to the design and use of computer systems

- Explain the concepts of computer programming and critically evaluate and predict their utility in models, tools and applications

- Demonstrate advanced, specialist theoretical and practical knowledge in a range of computer science sub-fields

- Explain the legal, social, ethical and professional issues involved in the exploitation of computer technology with respect to good professional practice

Skills:
- Develop games software using appropriate programming languages and concepts

- Apply knowledge of computer games technology to manage and execute a practical applications of computer games technology

- Apply concepts in software design to games development

- Develop and critically evaluate specifications for specialist computer systems

- Analyse, develop and select algorithms for computational tasks

HOW WILL I LEARN?

The programme is delivered and assessed via a coordinated combination of: lectures (including programmed student activity); supervised tutorials; supervised laboratory work; independent coursework; group project work; and individual project work and dissertation.

The teaching and assessment methods used are largely constant throughout the programme, though the level of each module determines the level at which assessment is carried out; i.e. it is the nature of the problems encountered and the solutions required that determine the level of the modules, not the activities performed. The intention is to require greater levels of analysis, autonomy, etc. as the student progresses through the programme. This is reflected in the programme structure: fundamental concepts and skills are addressed first, followed by core knowledge that builds on this, which in turn prepares students for advanced electives and a large individual project in the final Programme Stage.

The majority of the taught modules are each delivered through a series of 20 lectures and 10 hours of tutorials/laboratory sessions. Each lecture and tutorial/laboratory session lasts 1 or 2 hours.

Project work plays an important part in computing undergraduate programmes. The Team Project provides students with experience of the issues involved in software development projects as well as enhancing team-working and related transferrable skills.

You are expected to undertake independent study, including substantial coursework assignments for each module, which will be spent working on background reading, revision of notes, work on tutorial problems, coursework and individual or group work on projects.

In the Individual Project students are expected to carry an independent investigation of a significant computing problem allowing them to apply what they learnt through the programme. This activity is carried out under the supervision of academic staff, offered through a series of supervision sessions.

Lectures are normally used to: (a) present and explain the theoretical concepts underpinning a particular subject; (b) highlight the most significant aspects of a module's syllabus; and (c) indicate additional topics and resources for private study. Tutorials are used to help students to develop skills in applying the concepts covered in the lectures of the relevant module normally in practical problem solving contexts.

Laboratory sessions serve a similar purpose as the tutorials but their strategy will be to demonstrate application of concepts and techniques through the use of software development tools and environments.

Project supervision sessions will be used to indicate theories, methods, techniques and concepts which are relevant to the issues being investigated by the particular project as well as ways of applying these instruments in specific problem solving

WHAT TYPES OF ASSESSMENT AND FEEDBACK CAN I EXPECT?

Assessment and Assessment Criteria

A broad range of skills and knowledge are in demand in the computing profession and assessments are tailored to the particular activity being undertaken and to your learning needs. Assessed activities include the development of working software, the application of theory to practical problems, team work, project work and the communication of problem analysis and solutions through reports and presentations. The assessment of these activities are guided by assessment criteria. Some modules are assessed by project work or coursework only, while others are assessed by a combination of coursework and invigilated exam.

Assessment Criteria are descriptions, based on the intended learning outcomes, of the skills, knowledge or attitudes that you need to demonstrate in order to complete an assessment successfully, providing a mechanism by which the quality of an assessment can be measured. Grade- Related Criteria are descriptions of the level of skills, knowledge or attributes that you need to demonstrate in order achieve a certain grade or mark in an assessment, providing a mechanism by which the quality of an assessment can be measured and placed within the overall set of marks. Assessment Criteria and Grade-Related Criteria will be made available to you to support you in completing assessments. These may be provided in programme handbooks, module specifications, on the virtual learning environment or attached to a specific assessment task.

Feedback on Assessment

Feedback on assessment is given in a variety of ways to maximise your learning opportunities. For written reports or problem solving tasks the feedback may be written, while feedback on more qualitative work may be through audio files. Face-to-face feedback is given for lab work, presentations and some group work. In all cases feedback is given so that you can learn the most you can from the work that you have done and apply that learning to future activities.

Feedback will be provided in line with our Assessment and Feedback Policy. In particular, you will normally be provided with feedback within three weeks of the submission deadline or assessment date. This would normally include a provisional grade or mark. For end of module examinations or an equivalent significant task (e.g. an end of module project), feedback will normally be provided within four weeks. The timescale for feedback on final year projects or dissertations may be longer.

The full policy can be found at:
http://www.city.ac.uk/__data/assets/word_doc/0003/69249/s19.doc

Assessment Regulations

In order to pass your Programme, you should complete successfully or be exempted from the relevant modules and assessments and will therefore acquire the required number of credits. You also need to pass each Programme Stage of your Programme

WHAT AWARD CAN I GET?

Bachelor's Degree with Honours:

Programme Stage	Credits required	HE Level	Weighting (%)	Class	%
0	120	3	0	I	70
1	120	4	0	II upper division	60
2	120	5	40	II lower division	50
3	120	6	60	III	40

In addition 360 credits must be achieved excluding IN3027.

Diploma of Higher Education:

Programme Stage	Credits required	HE Level	Weighting (%)	Class	%
0	120	3	0	With Distinction	70
1	120	4	50	With Merit	60
2	120	5	50	Without Classification	40

Certificate of Higher Education:

WHAT WILL I STUDY?

Programme Stage 0

To pass Programme Stage 0 you must have acquired 120 credits at level HE3 as specified in the programme scheme. To progress from Programme Stage 0 to Programme Stage 1 of the degree, the Foundation Year requirements must have been satisfied. In particular, as stated above, a minimum overall year 0 average of 60% must be achieved.

Module Title	SITS Code	Module Credits	Core/ Elective	Can be compen- sated?	Level
Introduction to Programming with Python	IN0005	20	C	N	3
Web Development	IN0006	20	C	N	3
Computer Fundamentals	IN0007	20	C	N	3
Discrete Mathematics	MA0002	20	C	N	3
Introduction to Probability and Statistics	MA0004	20	C	N	3
Employability and Transferable Skills	IN0008	20	C	N	3

Programme Stage 1

To pass Programme Stage 1, an Honours degree student must have acquired 120 credits as specified in Programme Stage 1 of the Programme Scheme. In addition a student must complete, achieving a mark of 100%, an online assessment covering risk/safety for safe operation of computing equipment. This online assessment is an exception to the assessment regulations; it has unlimited attempts but must be passed with a mark of 100% in order to progress to stage 2.

This part consists of 4 compulsory core modules, worth 15 credits each, and 2 compulsory core modules, worth 30 credits

Module Title	SITS Code	Module Credits	Core/ Elective	Can be compen- sated?	Level
Introduction to Algorithms	IN1002	15	C	Y	4
Mathematics for Computing	IN1004	15	C	Y	4
Systems Architecture	IN1006	15	C	Y	4
Programming in Java	IN1007	30	C	N	4
Databases and Web Development	IN1010	30	C	N	4
Operating Systems	IN1011	15	C	Y	4

Programme Stage 2

To pass Programme Stage 2, an Honours degree student must have acquired 120 credits as specified in Programme Stage 2 of the Programme Scheme. For an Honours degree student to progress from Programme Stage 2 to Programme Stage 3, Programme Stage 2 requirements must have been satisfied.

This Programme Stage consists of 6 core modules each of which is worth 15 credits, and a core Project module, which is worth 30 credits.

Students may transfer into this programme route at the start of Programme Stage 2 if:

TO WHAT KIND OF CAREER MIGHT I GO ON?

When you graduate with the BSc (Hons) in Computer Science with Games Technology you would be expected to progress directly into games technology or computer science related disciplines. These roles can be in programming and design of games engines, AI, graphics, physics and audio systems. Computer games production and management roles are also available as career paths. In addition, the degree could lead to roles in a broad range of computing areas, including all forms of software or hardware development, design and analysis of algorithms data structures and systems/data analysis. Graduates starting a new business can benefit from City's London City Incubator and City's links to Tech City, providing support for start-up businesses. Graduates may also choose to continue onto Masters degree (subject to successful application).

If you would like more information on the Careers support available at City, please go to: http://www.city.ac.uk/careers/for-students-and-recent-graduates.

WHAT PLACEMENT OPPORTUNITIES ARE AVAILABLE?

Students have the opportunity to undertake a placement in a diverse range of companies and roles working at blue-chip multinational corporations or dynamic start up ventures both in the UK and internationally. The broad spectrum of roles available will represent the developing nature of the Computer Science and Information Technology industry allowing students to focus on their interests whilst being exposed to new experiences and challenges.

Students have the opportunity to follow two placement routes whilst completing their study at City University; a one year placement or the Professional Pathway scheme.

The one year placement can be undertaken following successful completion of Programme Stage 2 and will be required to last for a minimum of 9 months.

Students can join the Professional Pathway scheme after successful completion of Part 1 (early entry) or after successful completion of Programme Stage 2 or a one year placement (late entry). On this scheme students will attend university for one day a week whilst under contract to their placement provider with the placement lasting for two or more years.

The following criteria apply to both placement routes.
In order to join a placement route, students must successfully complete the preceding academic year.

Students will need to source and apply for any placement opportunities independently however support and guidance will be provided throughout the application process by the Professional Liaison Unit.

In order to receive credit and successfully complete the placement, students will be required to submit deliverables for and pass a Professional Placement & Career Development module. Further information on this module and the associated deliverables can be found in the module guidance notes.

Students undertaking a placement must adhere to specific rules and regulations regarding placement conduct and other obligations as set out by the Professional Liaison Unit.

For further information on placement opportunities please go to the Professional Liaison webpage at https://www.city.ac.uk/mathematics-computer-science-engineering/placements-and-internships/about-professional-liaison-unit

WILL I GET ANY PROFESSIONAL RECOGNITION?

Accrediting Body: British Computer Society

Nature of Accreditation

Partial CEng accreditation

Certificate
Diploma
Professional Graduate Diploma
PGD Project (on condition that students pass at the first attempt a practical problem-solving project)

HOW DO I ENTER THE PROGRAMME?

The Foundation Year is designed as an entry route for students who were unable to obtain the required A Level grades to access the corresponding BSc programme directly.

Our standard offer for BSc Computer Science with Games Technology (with Integrated Foundation Year) is CCC at A-Level.

In addition, GCSE English Language grade 4 and GCSE Mathematics grade 5 is required.

Each application is treated on its own merit. This is to allow us to weight in work experience, personal statements, and other factors, as and when appropriate.

Scholarships

Details of scholarships available to new undergraduate students can be found on the University's website at

http://www.city.ac.uk/study/why-study-at-city/fees-and-finance/scholarships

Version: 1.0
Version date: September 2020
For use from: 2021-22