Programme Specification

Award and title:

BSc (Hons) Games Development

BSc (Hons) Games Development with a year in industry[1]

School:	Science, Technology and Health	
Subject area:	Computer Science	
Entry from academic year:	2024-25	
in the month(s) of	September	
Awarding institution:	York St John University	
Teaching institution:	York St John University	
Delivery location:	York St John University	
Programme/s accredited by:	BCS	
Exit awards:	Certificate of Higher Education Games Development Diploma of Higher Education Games Development Diploma of Higher Education Games Development with a year in industry BSc (Ord) Games Development BSc (Ord) Games Development with a year in industry	
UCAS code / GTTR / other:	I100	
Joint Honours combinations:	Not applicable	
QAA subject benchmark statement(s):	Computing (March 2022)	
Mode/s of study:	full time for 3 years part time for 6 years	full time for 4 years (with year in industry)
Language of study:	English	
Paired with Foundation Year	No	
Study abroad opportunities:	No	
Opt-in YSJU Placement Year opportunity:	No	

Introduction and special features

The Games Development programme at York St John University is committed to developing employable graduates with relevant technical, professional and entrepreneurial skills that grasp the complexity of the above conditions. The programme is designed for those who want to develop games and seek a career in the games industry. Games Development at York St John University provides you with a rigorous education in core computational skills including applied mathematics, computational languages acquisition, algorithm design, game mechanics, games programming, 3D graphics, systems design and analysis; with optional modules in Artificial Intelligence for Games, Procedural Content Generation, Agile Game Development and Immersive Computing. With this, you are also taught foundational design principles to enhance your ability

[1] The Year in Industry programmes are available in full time study only

to carry projects through from conceptualisation to realisation. To encourage the consolidation of knowledge, you are offered continual opportunities throughout your study to apply learnt skills through a series of 'live' projects that engage real world challenges.

Computer Games are now an established part of our social and cultural experience. Technologies such as fast broadband and mobile communications have allowed games to move from being solitary activities to social endeavours, shared between multiple people in different spaces and sometimes different time zones. Theories of games have been developed both within and beyond the field of computer science. These theories have been used to enhance computer game play, but also to think about other fields such as politics, economics and education. It is becoming apparent that as we develop a digital layer to our social sphere, games and their mechanics are becoming a prevalent part not only of how we socialise but also how we think about our society. It is therefore logical that game developers will come to have an increasing significance in society, not only as creators of entertainment but also as makers of new kinds of social experiences and producers of new kinds of social orders. With this comes the recognition that technical decisions regarding game mechanics, character and user interface design also become ethical, political and philosophical decisions since games offer a space for social interaction and the exploration of new sensations and experiences. Thus, games are increasingly becoming part of how we understand and explore our world, both individually and as a society.

Complementing this, you will enhance your understanding of the contextual discourses surrounding games programming and computation as a broad field. Through modules that explore key critical discourses, you are encouraged to consider the ramifications of how games have come to alter how we relate to and understand ourselves as human beings and as a society.

Special features of our programme

Some of the programme's uniqueness around teaching and learning strategy includes a practical degree, a small number of students per session/class with practical content and research elements; assessments strategy mainly focuses on portfolio and industry-related project-based assessments.

Inclusivity within the programme: course materials, assessment types, tasks, and practical working environment are available online and accessible to you at your convenience. The practical learning platforms are primarily game engines and software that are free to enable you to practice your learning at your convenience with less effort and at any time and place.

Dedicated Resources: you will study in our dedicated workspace, which serves as home "base" for our students - all years have their specialist labs with specialized hardware and software resources, including our virtual lab resources on a dedicated/separate network allowing you to do what is required for Games Development.

CPD: As part of your continuous professional development, you will be offered professional certification courses and participation, including Microsoft certificates with access to the Microsoft tools and materials. Alongside your degree qualification, you will be supported to obtain industry-recognized certifications for various technologies to augment your degree and validate your skills needed to succeed across various Games Development careers.

Sustainability: By creating environmental and social sustainability games with tools and methods, you will be introduced to a new practise of computational sustainability.

Learning support: You will be supported with appropriate learning resources including academic, administrative, and technical staff, dedicated computing and communication facilities which include appropriate software tools, and specific and general learning facilities including access to appropriate digital and print-based information and effective academic advice and guidance.

You will acquire essential professional skills by identifying suitable techniques and implementing principled solutions within a professional, legal, and ethical framework to address data management and use, security, EDI, sustainability, and entrepreneurship. You'll be assisted to enhance your skills through activities including reflecting on work-based practise to reinforce your important skills and problem-based learning to address complicated real-world issues.

Programme Design: the programme is designed to support you in being:

- Adaptable to change.
- Ethical
- Astute in terms of problem solving.
- Innovative
- Critical
- Entrepreneurial
- Client-centred
- Professional

Future focussed: our Games Development programme will provide you with subject-specific and key transferable skills and a creative and ethical approach to your games development carrier, equipping you with the critical and analytical knowledge to play your part in shaping the future.

The programme will provide you with:

- The ability to apply practical and analytical skills
- Games Development knowledge, understanding and skills
- The ability to self-manage a significant piece of work
- Computational problem-solving and Intellectual skills
- Interpersonal and team working skills
- Critical self-evaluation of the process
- An underpinning of computation as a creative, problem-solving practice
- A focus on formative philosophical discourses and ethics, within the industry and wider society
- A balanced focus on technical theory, practice, and ability to recognise the legal, social, ethical and professional issues around the subject
- Professional practice and Entrepreneurship
- Integrated professional practice and certifications opportunities
- Live projects working with and to industry specifications
- Organised trips to experience a spectrum of applications of the subject
- Team working opportunities the degree, which reflect and prepare students for careers working in industry.

Admissions criteria

You must meet the University's general entry criteria for undergraduate study.

If your first language is not English, you may need to take an IELTS test or an equivalent qualification accepted by the University (see https://www.yorksj.ac.uk/international/how-to-apply/english-language-requirements/).

If you do not have traditional qualifications, you may be eligible for entry on the basis of Accredited Prior (Experiential) Learning (APL/APEL). We also consider applications for entry with advanced standing.

Programme aim(s)

The purpose of this programme is to provide you with an excellent education experience with the necessary technical and higher-level reasoning skills that enables you to become a Games Development expert/specialist, with multiple opportunities to learn and acquire professional certifications and accreditation.

Upon successful completion of the programme, you will be able to:

Level 4

4.1 Demonstrate ability to deploy appropriate theory, practices and tools for the specification, design, implementation, and evaluation of computer-based systems.

4.2 Demonstrate knowledge and understanding of essential facts, concepts, principles, and theories relating to computing and computer applications. This includes a knowledge of games development vocabulary and jargon, of games development frameworks, game analysis and criticism.

4.3 Recognise and analyse criteria and specifications appropriate to specific problems, and plan strategies for their solution. This includes awareness of different games programming libraries and game engines.

4.4 Demonstrate the use of knowledge and understanding in the modelling and design of computer-based systems for the purposes of comprehension, communication, prediction, and the understanding of trade-off.

4.5 Analyse the extent to which a computer-based system meets the criteria defined for its current use and future development.

4.6 Demonstrate the ability to recognise and analyse criteria and specifications appropriate to specific problems, and plan strategies for their solution. In games this means knowing which library or engine is appropriate for which game types.

Level 5

5.1 Recognise the legal, social, ethical, and professional issues relating to computing technology and appropriate professional, ethical and legal practices, and standards, and the ability to apply this to games and game related technologies.

5.2 Recognise, evaluate and mitigate any risks or safety aspects that may be involved in the operation of computing and information systems within a given context and be aware of the growing ethical issues around games and the games industry.

5.3 Apply appropriate theory, practices and tools for the specification, design, development and evaluation of intermediate computing systems including programming in a high-level language; apply this knowledge to the development of games using game technologies.

5.4 Apply the principles, methods, and tools of systems design to develop information systems that meet business needs.

5.5 Demonstrate critically knowledge and understanding of methods, techniques and tools for information modelling, management and security. Demonstrate understanding of the role these play in the games industry.

Level 6

6.1 Apply a high level of project management skills, technical knowledge, and creative techniques to the production of a final computer science project & report

6.2 Engage with contemporary scholarship utilising research methodologies and deploying analytical skills to sustain a coherent intellectual critique on particular aspects of computer science, games development, and allied fields.

6.3 Deploy effectively the tools used for the construction and documentation of computer applications and games, with particular emphasis on understanding the whole process involved in the effective deployment of games technologies to design and develop games.

6.4 Demonstrate the ability to define a problem, research its background, understand the social context, identify constraints, understand customer and user needs, identify, and manage cost drivers, ensure fitness for purpose and manage the design process and evaluate outcomes.

6.5 Use appropriate theoretical and practical processes to specify, design, deploy, verify, and maintain computer games, including working with technical uncertainty.

6.6 Deploy skills and knowledge to plan, engage in and apply research to Computing and related problems.

Programme structure

Code	Level	Semester	Title	Credits	Module status	
					Compulsory (C) or optional (O)	non-compensatable (NC) or compensatable (X)
COM4009M	4	1	Programming 01 - Introduction to Programming	20	C	X
COM4010M	4	1	Maths and Problem Solving	20	C	X
COM4015M	4	1	Games Fundamentals	20	C	X
COM4012M	4	2	Programming 02 – Programming for the web	20	C	X
COM4013M	4	2	Operating Systems	20	C	X
COM4016M	4	2	Games Design	20	C	X
COM5012M	5	1	Programming 03 – Systems Programming & Scripting	20	C	X
COM5013M	5	1	Database Systems	20	C	X
COM5020M	5	1	Game Development Project	20	C	X
COM5019M	5	2	Game Development with Game Engines	20	C	X
COM5015M	5	2	Programming 04 – Advanced Programming	20	C	X
COM5016M	5	2	Professional and Research Practices	20	C	X
COM5018P	5	1&2	Year in Industry	0	C if year in industry	NC if year in industry
COM6016M	6	1+2	Dissertation	40	C	NC
COM6024M	6	1	Games Programming	20	C	X
COM6025M	6	1	3D Graphics Programming	20	C	X
Choose 40 credits from the following optional modules:						
COM6026M	6	2	Artificial Intelligence for Games	20	O	X
COM6027M	6	2	Procedural Content Generation	20	O	X
COM6028M	6	2	Agile Game Development	20	O	X
COM6029M	6	2	iOS Games Development	20	O	X
COM6030M	6	2	Immersive Computing	20	O	X

Please note that not all options may be available every year as they depend on student demand and staff availability.

Any modules that must be passed for progression or award are indicated in the table above as non-compensatable. A non-compensatable module is one that must be passed at the relevant level (with a mark of 40) in order to progress.

Learning, teaching and assessment.

Level 4 gives you the fundamental core knowledge and understanding of essential facts, concepts, principles relating to computing and games development; providing you with a broad range of opportunities to develop core subject knowledge in the areas of programming for the web, mathematics, object-oriented programming, and the fundamental concepts of games analysis, design and development. You will become familiar with common computer science terminology and well-versed in discipline-specific technical practices, methodologies, and theories. Teaching at this level comprises a range of immersive learning experiences

such as lectures, seminars, workshops, teaching laboratories, Supported Open Learning (SOL), guest talks, and trips.

Level 5 will enable you to further develop your subject knowledge, using game engines and working on a game development project with students from other disciplines. You will undertake an Professional and Research Practices module allowing you to apply your skills in a 'live' setting, working for an established company or undertaking a self-initiated, possibly collaborative, entrepreneurial project or writing and acquiring professional certifications. This opportunity will enable you to apply and test the knowledge you have acquired so far through your degree and validate your skills needed to succeed across various game development careers.

Optional year in industry programme route

You will have the option of undertaking a year in industry (sandwich year), in between level five and level six. Through this you will gain valuable experience in real employment. York St John University will provide you with support to help source a placement which meets your career aspirations; however, it is your responsibility to secure your own placement. Support will be available through the CPD framework, and central University services such as the Careers and Employability Team. Students who undertake the year in industry often return for level 6 more focused on their studies and deemed more job ready by employers. You will be prepared for your placement year through activities in semester two, level five, which will assist you in making preparations for applying for and undertaking a placement. This will include CV and cover letter writing, as well as interview skills. You will work with the central University services with the support of an academic tutor to identify placement opportunities. On achieving a year in industry placement, you will complete a negotiated learning agreement in the form of a learning contract, which will be negotiated with your host firm and agreed by an academic from the York St John University Computer Science Team. This will be logged by the University, and you will be expected to demonstrate your achievement while on placement through a portfolio of evidence. In order to undertake a year in industry placement you will need to have achieved the minimum requirements for progression at level 5 and will also have to satisfy the following criteria:

- You must have no outstanding modules from level 4 or 5.
- You must demonstrate a good level of professionalism in your academic conduct within the university, to the point where an academic from the computing team is willing to agree your suitability for the proposed placement.

During the year in industry placement, you will be allocated a mentor from within the University, who will monitor your progress throughout the placement. This may include Skype/email conversations. You will have a minimum of one field visit which will include a conversation with the employer.

Level 6 includes advanced modules in your field, allowing you to specialise and accent your learning via a choice of optional modules, for example: Artificial Intelligence for Games, Procedural Content Generation and Immersive Computing. Accompanying this you will undertake a Dissertation - a year-long independent research project of your own design, agreed by and supported by an academic supervisor. This project may be in any existing or emerging field of video game research and development. You are encouraged to consolidate technical learning and professional research interests through this Dissertation project. Teaching and learning at level 6 again incorporate the modes of delivery and activity encountered at levels 4 and 5, however, the emphasis at level 6 is on independent self-directed work that responds to learning within and across modules.

The teaching and learning environment of the programme is underpinned by a number of explicit pedagogic choices: small classes and small lab class sizes – no class bigger than 30 students; so that students can get as much help when needed. Teaching and learning are based on a working with/co-creation rather than a teaching to approach – teaching has a strong practical element running through all modules within the degree.

Our approach to learning is holistic and practice focus. It will provide you a blend of theoretical and practical learning opportunities to enable you to apply practical and analytical skills synthesize information and ideas in an integrated way, so our learning experiences are authentic and relevant to your games development role.

Our approach to learning is cooperative. You will work solo and together in small groups with other students, building supportive relationships, reflecting on your experiences, and mentoring each other to achieve your full potential.

The assessment strategy for the programme focuses on students' analytical skills, ability to integrate what you learn in real-world contexts and enables a wide range of skills to be assessed fairly and in multi-faceted manner. You will be solving real-life problems either in group or solo on projects that address global, social, political, and economic issues.

We adopt different methods of teaching and learning to promote your development and provide opportunities for you to gain the knowledge, professional and interpersonal skills.

- Lectures will be in a small group of students – they offer an overview of a subject to convey critical information, background, theories, and equations and provide you with a systematic understanding of subject, and a critical awareness of current problems and/or new insights in the development and implementation of systems, much of which is at, or informed by, the forefront of your field of study.

- Labs – your practical sessions will be in a small group of students with academics and technicians supporting your learning. You will be challenged to practice your learning, develop your hands-on skills, ideas and work on scenarios, case studies and solve problems together with the rest of students in a controlled environment.

- Tutorials – individual and group tutorials provide opportunities for you to discuss your work and your progress with your tutors and others.

- Self-Directed Learning (SOL) – primarily for technical modules, with the SOL sessions, you will be working together with our technicians to solve your learning problems and promote the culture of collaboration, and discussions with the students.

We use Technology Enhanced Learning to create a varied learning experience. Virtual Learning Environments provide you with opportunities to learn through online lectures, discussion groups, and online learning activities. You will be exposed to using virtualization and cloud computing technologies and specialised cybersecurity hardware equipment for your practices. Online library resources specific to your subject guides, databases, and eBooks, and eJournals are easy to access and help support your study.

During your programme you will be asked to do formative work that prepares you for assessment. This may be written or practical work. Formative work provides your academic assessors with opportunities to explore how you are doing and provides you with some feedback to support your development. It also offers you the opportunity to review your progress, identify your strengths and areas of growth and ask for support where you think you need it. We may also ask you to provide feedback to the other students as part of reflective learning and coaching activities.

Progression and graduation requirements

The University's general regulations for undergraduate awards apply to this programme.

Any modules that must be passed for progression or award are indicated in the Programme Structure section as non-compensatable.

Late result modules
Indicate any module codes where the result of the first attempt is not known in time for the June School Assessment Panels (or equivalent level progression point for non-standard entry points).

- COM5016M - Professional and Research Practices

Internal and external reference points

This programme specification was formulated with reference to:

- University mission and values
- University 2026 Strategy
- QAA Subject Benchmark for Computing (March 2022)
- Guidelines on course accreditation Information for universities and colleges (January 2020)

Date written: December 2021.