UNDERGRADUATE PROGRAMME SPECIFICATION

Programme Title:	**Games Technology**
Awarding Body:	**Staffordshire University**
Teaching Institution:	**Staffordshire University**
Final Awards:	**BSc [Hons] Computer Games Design and Programming**
Intermediate Awards:	**BSc; Dip HE; Cert HE Computer Games Design and Programming**
Mode of Study	**Full Time / Part Time**
UCAS Codes:	**GG46**
QAA Subject Benchmarks:	**Engineering**
JACS Code:	**G400**
Professional/Statutory Body:	**IET**
Entry Year:	**2016-17**

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EDUCATIONAL AIMS OF THE PROGRAMME

This programme consists of a number of awards that are studied on a full time or part time basis. All named Awards lead to a Bachelor of Science BSc, Bachelor of Science with honours BSc [Hons] or Bachelor of Engineering with honours BEng [Hons] and for Computer Games Design a Masters, MEng.

The awards in this programme aim to give graduates the opportunity to gain the skills to advantage them in the Games Industry and develop them as confident well informed and well-rounded individuals.

BSc Hons] Computer Games Design and Programming

The aim of this award is to produce graduates who have a strong games production skills and an understanding of both games modelling and games programming

To achieve this aim we have a number of objectives to fulfil:

- To develop the students' 3D modelling skills primarily in high polygon modelling with an option to also learn low polygon modelling [both used within the industry]
- To develop the students' programming skills in the areas of programming graphics and of programming both physics and AI for a games engine.
- To develop students' games production work flow, games documentation and project management skills.
- To develop students' ability to understand the business, marketing, and legal issues surrounding the different types of games contracts.

What is distinctive about this programme?

We are forward thinking in the field of delivery and support of student learning using tools such as Blackboard VLE, Forums and Virtual Project Rooms and resources such as online video tutorials and learning material.

Two of our Courses are IET accredited and we are active members of TIGA [Trade and Industry Games Association]. All our courses have been developed in conjunction with industry and use industry standard software and industry methods of games asset creation. We also are actively involved in research and support research informed teaching.

Due to our courses being BSc[Hons] or BEng[Hons] we find that industry see many of our graduates to be capable of being not only 3D Artists, 3D Animators, Level Designer or Games Designer but also Technical Artists or Technical Designers, whereas many other courses from other Universities don't equip their students in this way.

The Staffordshire Graduate

The Staffordshire Graduate represents a set of qualities that the University passionately believes is necessary for success in the 21st century. The Staffordshire Graduate is a reflective and critical learner with a global perspective, prepared to contribute in the world of work.

The awards within the Games Technology program area equip graduates with far more than

academic skills, real-world knowledge, and discipline expertise. All awards nurture and develop attributes and qualities which will prepare the student for success in their career, their endeavours in the jobs market, and the undertaking of lifelong learning.

Students on Games Technology awards will be at the forefront of their chosen discipline. They will gather expertise from using valuable industry standard software and hardware though a large variety of the modules. For example the *Autodesk Creative Suite*, *the Rare Motion Capture Studio*, and the *Unreal* and *Unity* games engines. Using professional techniques acquired through lectures, tutorials, seminars, and industry workshops students will develop a portfolio of industry standard work.
All awards in the program area have a strong emphasis on ensuring the readiness of students to work as part of a team in a games development studio. To ensure that students are ready for this working environment all students on Games Technology awards complete the *Junior, and Senior, Collaborative Games Development and Testing modules*. These modules replicate the collaborative team working setting of a development team. Students will learn to develop their communication skills, as they disseminate information amongst their colleagues and peers. In the process progressing their games design ideas from concept to reality. Students will be required to interact with all team members throughout the development and realisation of their game design. Further, students will be required to communicate through presentations to peers and staff, and through the production of documentation and videos to promote the game.

The computer games industry is a global business worth billions of dollars a year. Graduates will understand this world-wide marketplace, along with the multi-national publishers and developers who produce some of the most successful games. Graduates will have the skills and attributes to contribute to this global trade through employment in either a studio, academia, or through the production of smaller viral games on mobile platforms.

A graduate of a Games Technology award from Staffordshire University will be digitally literate and will be able to develop their portfolio of work throughout their career. The games industry is constantly evolving and lifelong learning is at the heart of every team member in a development studio. Modules on Games Technology awards like Introduction to 3d Modelling, and Games Engines and Physics cultivate a sense of ongoing, critical and reflective learning through up-to-date learning materials and methods including Video Tutorials, asynchronous forum discussion boards, and seminars.
All of the above help to develop the “Three E’s” in graduates.

Graduates of courses are employable and ready for work; this can be seen through the previous employment statistics. However, to ensure this is the case we constantly work with employers, studio and industry professionals to ensure the course is as relevant as possible to studios. Graduates are encouraged to be enterprising and entrepreneurial and are encouraged to use their skills to follow their ambitions. With the prominence of mobile, social and viral games, graduates will have the knowledge to set up indie studios and produce independent apps and games. The experience from the Junior, and Senior, Collaborative Games Development and Testing, rapid prototyping and portfolio modules will prepare the student should this be desired. The awards in this programme have a strong emphasis on a working games studio environment giving the students six weeks in industry required by skillset. The Junior and Senior Collaborative Games Development and Testing modules will combine to make a cross level games studio module and the students will be dedicate one day a week in a studio environment for 24 weeks in their level 5 year and 24 weeks in their level 6 year, producing a total of two published games by the time they graduate.

PROGRAMME OUTCOMES

What will this programme teach me to do?
At the end of your studies you should be able to:

Knowledge & Understanding Understand how established games design techniques and principles of 3D modelling and programming physics used by others may be used for original production and show a systematic approach to the analysis of the games industry using these skills.
Learning Set realistic goals for learning and become a confident independent learner who could impart their knowledge to others
Enquiry Understand of the methods and avenues of enquiry in the field of games design and technology and show a professional approach to research and information gathering.
Analysis Show the ability to analyse a problem through critical thinking and constructive argument backed by data and research. Analyse the effectiveness of techniques and technologies in terms of usefulness and the effectiveness of the way others use technology and techniques for specific production situations.
Problem Solving Identify the problem and use skills of decision making to choose the appropriate method to obtain the best solution and have the ability to discern between a complete and incomplete solution to a technological or theoretical problem
Communication Communicate interpersonally either in the form of written or oral expression in a professional manner to a variety of audiences in order to communicate ideas, problems or solutions
Application Apply critical reasoning and argument to show the ability to apply concepts in different contexts and apply in a practical and flexible manner a workflow pipeline to produce parts or a complete computer games
Reflection Demonstrate the ability to realistically reflect on the quality of their work and put in to place a plan of action to improve upon their work in the future.

PROGRAMME STRUCTURE, MODULES AND CREDITS

LEVEL 3	Teaching Block 1	CE70004-3 Games Theory And Mechanics	CE70005-3 Photoshop For Games Development	CE70006-3 Introductory Modelling And Rendering	CE01130-3 Computer Games In Society And The Workplace
	Teaching Block 2				CE01127-3 2D Games Engines

LEVEL 4	Teaching Block 1 Teaching Block 2	CORE GAME40214 Introduction to Games Design [30]	CORE GAME40213 Introduction to 3D Games Engines [30]	CORE COSE40638 Games Engine Creation [30]	CONDITIONAL CORE GAME40250 Rapid Games Prototyping OR CORE GAME40400 Introduction to 3D Modelling for Games [30]

LEVEL 5	Teaching Block 1 Teaching Block 2	CORE GAME50170 Junior Collaborative Game Development & Testing [30]	CORE COSE50639 Advanced Games Engine Creation [30]	CORE GAME50180 Advanced 3D Games Engine and Scripting [30]	A] OPTION [30]

LEVEL 6	Teaching Block 1 Teaching Block 2	CORE GAME60247 Senior Collaborative Games Development & Testing [30]	CORE GAME60193 Individual Games Technology Project [30]	CORE GAME60175 Advanced Games Prototyping & A.I. Scripting [30]	OPTION [30]

Options

LEVEL 5			
	Teaching Block 1 - 2		**Cats**
Games Design Route	**GAME50172** **OR** **GAME50261**	Gameplay Applications Game Interface Design and Implementation	**30** **30**
3D Modelling Route	**GAME50168** **OR** **GAME50356**	3D Character Modelling for Games 3D Hard Surface Modelling for Games	**30** **30**
Games Programming Route	**COSE50581**	Further Games and Graphics Concepts	**30**
Games Engines Route	**GAME50251**	Social & Mobile Game Development	**30**

LEVEL 6			
	Teaching Block 1 - 2		**Cats**
Design Route	**GAME60177**	MMOG Design, Communities and Narratology	**30**
3D Modelling Route	**GAME60174**	Advanced 3D Modelling	**30**
Games Programming Route	**COSE60512** **AND** **COSE60510**	Advanced Windows Game Programming Advanced Programming for 3D Graphics Applications	**15** **15**
Games Production Route	**GAME60282**	Military Games Design and Development	**30**
Games Engine Option	**GAME60271**	Individual Games Technology Portfolio	**30**
	COSE60595	Mobile Games Development	**30**
	COSE60587	Advanced Graphics and Real-Time Rendering	**30**

HOW WILL I BE TAUGHT AND ASSESSED?

Teaching and Learning

Level 3 Modules

The strategy at Level 3 for teaching is to acclimatise students for entry to Level 4, incorporating the best aspects of college/school teaching with the aspects of teaching that are prevalent at university levels 4,5 and 6.
Students will be taught via lecture / tutorials at 1:20 ratio along with problem based tutorials, practical laboratory sessions, group based activities and self-directed investigations. Content will be heavily supplemented with online and VLE support through Blackboard in addition to videos.

Learning will largely be achieved during direct contact time with lecturer as at level 4 but with more focus on one to one tuition. Subject specific skills will be a precursor to Level 4 and will be supplemented with online tuition and video tutorials. Transferable skills will also provide a foundation for learning at higher levels

Level 4 Modules

The strategy for teaching is to formally support the Level 4 students in the form of lectures and tutorials. Often a method of combined lecture/ tutorial is used, where lectures are delivered in a lab alongside tutorial style interaction. Concepts are discussed and then techniques demonstrated and attempted by the students. There is a lot of teaching support at this level and “Traditional Lectures” are kept to a minimum

Learning is primarily achieved during direct contact time with the lecturer. This is designed to ease students into university life and successfully make the transition from schools/college to university. At this Level subject specific skills are learnt in the form of principles and technologies that underpin the subject. Transferable skills in knowledge and understanding are of primary importance at this level to provide a solid foundation for learning at higher levels

Level 5 Modules

The Lecture/Tutorial scheme continues but students are encouraged to seek out their own sources of research material and this is demonstrated in such things as log books. Students are expected to engage to a greater extent with resourced based materials such as video tutorials available through the virtual learning environment. Students are offered support in surgery sessions and assignment workshops.

Learning time is split between lectures/ tutorials and the students own learning using such things as video tutorials. Subject Specific Skills are learned by applying the principles and technologies from the previous level and building up more advanced knowledge and technical skills. Transferable skills in problem solving and application to real world scenarios are emphasised at this level. Presentation skills and skills at group working are developed and milestones are used to introduce students to working to intermediate deadlines, as they will be expected to do in industry.

Level 6 Modules

Students will be given some combined lecture/ tutorials, but the expectation is that they drive their own learning and the formal teaching element is replaced by tutor support when needed. This support is given by the Project Supervisor and module tutors and students are guided very much by the assignment criteria for each module. Self-guided study is heavily emphasised

Learning is done mainly outside of the lecture/lab environment and led by the student themselves. By this point in their university career students will have had time to reflect upon their strengths and are

encouraged to exploit those strengths in their project choice. Interest and strength in a subject is a very good self-motivator. Subject Specific Skills in applying the more advanced knowledge and technical skills learned at the previous level and applied especially in the Individual Games Technology Portfolio module.

Staffordshire Graduate

In levels 5 and 6 the strategy for learning takes on a realistic twist. Students will work across the academic years in a group studio environment for one day a week. The day will start with a ½hr lecturer followed by a ½hr group meeting to set out what is expected in that working day. The day will finish with a ½hr group wash up meeting to monitor what has been achieved that day.

The Level 5 students take on the junior roles within the games studio and they will be led by the Level 6 students who take the senior roles. Each group produce one game and students are assigned to the Art Department, Design Department or Engines/Programming Department reflecting the structure of a games company.

As the student moves from level 5 to level 6 they then progress from being a junior member of a team to a management role as a senior, creating a sense of progression through the company from a junior to a senior role.

Assessment

Level 3 Modules

The assessment strategy is based on a combination of practical coursework, presentation and written assignment. This combination will prepare students for later levels and suits the learning outcomes most effectively at Level 3. The strategy utilises the best elements of college / school assessment with preparation for University assessment.

Level 4 Modules

The assessment strategy is based on what is best to assess the level learning outcomes at Level 4. In general these are in the form of written reports that detail the work done on practical projects. As with the learning strategy the assessment strategy is designed to allow students a smooth transition from school/college to university.

Level 5 Modules

At this level the assessment of students aims to reflect an industrial situation. This still includes written reports and practical work; however at this level they are introduced to being assessed on working to produce log books, working to milestones and self-assessment and peer reflection, which would be encountered in industry. Group work and presentations are also used as assessment methods to replicate what would happen in industry.

Level 6 Modules

Assessment at this level is dominated by Individual Games Technology Project and The Individual Games Technology Portfolio modules. Students are assessed on their ability to take charge, plan, manage, and produce work to their own brief. Students are also assessed on their ability to demonstration reflection on the body of work they have embarked upon and demonstrate a range of life experiences to facilitate life-long learning.

ADDITIONAL INFORMATION

Entry Requirements [including IELTS score]

A student who has achieved an HND may join with advanced standing this will be reviewed by the Award Manager on an individual basis to determine the suitable entry level to the award. A student with an outstanding, distinctive profile at HND may exceptionally be considered for direct entry to level 6.

IELTS 6.0

What qualifications would I need to join this programme?

The entry requirements for the award are normally:

For details of UCAS tariff points please see the current online prospectus at:
http://www.staffs.ac.uk/undergraduate/

or

A pass in a recognised Access to Higher Education course or a Foundation Year [including the Level 3 of Computer Games Design [Extended].

Mode of Study

All of the awards can be studied part time. The Part Time Studies Award leader will discuss the needs and the pace at which each Part Time student wishes to study in order to prepare an individual timetable for each student.

Disability Statement
Staffordshire University operates a policy of inclusive teaching and learning to ensure that all students have an equal opportunity to fulfil their educational potential. Details about how to apply to have your needs assessed can be found at:
http://www.staffs.ac.uk/courses_and_study/disabled_students/index.jsp

AWARD SPECIFIC INFORMATION

If a module has more than one assessed components, then the student must achieve a minimum mark of 30 % in each component and an aggregate mark of 40% to pass the module.

The student who enter at Level 3, must pass [including compensation] the Level 3 of the awards in its entirety to progress

The Level 5 Junior Collaborative Games Development and Testing module cannot be compensated. If students fail this module they can only retake with attendance. They may not proceed to the Level 6 Senior Collaborative Games Development and Testing module until they have passed Level 5 Junior Collaborative Games Development and Testing.

The placement year is considered as either a pass or fail. With the pass contributing to the award of Sandwich degree. There are no specific credits at any level allocated to the

placement year.

It is prohibited for the 30 credits of the Individual Games Technology Project or the 30 of the Individual Games Technology Portfolio to be compensated.

If a total of 300 Credits are achieved over Levels 4, 5 and 6 instead of the required 360 credits for the Honours Degree, then it is assumed that the student has not fully demonstrated the qualities of Staffordshire Graduate. In this case the student will be offered a Non-Honours Degree.

Further information about the award can be found in the relevant Student Handbook and on the University Website. This includes information about optional modules, learning outcomes at levels below honours, student support, and academic regulations.

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THE STAFFORDSHIRE GRADUATE

The Staffordshire Graduate represents a set of qualities that the University passionately believes is necessary for success in the 21st century. The Staffordshire Graduate is a reflective and critical learner with a global perspective, prepared to contribute in the world of work.

The table below indicates where, within your award, these characteristics are addressed:

AWARD TITLE:	**Games Technology Suite of Awards**	
Characteristic	**Award Module[s] including level and number of credits**	**Method of Assessment**
Work-ready and employable	Junior Collaborative Games Development and Testing [L5 30 Credits]	Students will work across the academic years in a group studio environment for one day a week. The day will start with a ½hr lecturer followed by a ½hr group meeting to set out what is expected in that working day. The day will finish with a ½hr group wash up meeting to monitor what has been achieved that day. The Level 5 students take on the junior roles within the games studio and they will be led by the Level 6 students who take the senior roles. Each group produce one game and students are assigned to the Art Department, Design Department or Engines/Programming Department reflecting the structure of a games company. As the student moves from level 5 to level 6 they then progress from being a junior member of a team to a management role as a senior, creating a sense of progression through the company from a junior to a senior role.
	Senior Collaborative Games Development and Testing [L6 30 Credits]	
Understanding of enterprise and entrepreneurship	Junior Collaborative Games Development and Testing [L5 30 Credits]	Students will be assessed on how they apply the games marketing skills to t the marketing of their game.
	Senior Collaborative Games Development and Testing [L6 30 Credits]	Students will be assessed on their ability to understand the process of bringing their game to market and releasing it to a global games distribution network
Understanding of global issues and their place in the global economy	Junior Collaborative Games Development and Testing [L5 30 Credits]	Students will be assessed on their ability to understand that the games industry is a global market and to that end design a game that does not alienate parts of the global market.
	Introduction to Games Design [L4 30 Credits]	Students will be assessed on their ability to demonstrate what they have learnt about games, genres and the social context of games globally
	Military Games Design, development and Philosophy [L6 30 Credits]	Students will be assessed on their ability to understand industry requirements for creating a suitable realistic game and research market effectiveness.

Communication skills	Junior Collaborative Games Development and Testing [L5 30 Credits]	Formative assessment by Tutors
	Senior Collaborative Games Development and Testing [L6 30 Credits]	Formative assessment by Tutors
	Introduction to Games Design [L4 30 Credits]	Students will be assessed on their ability to communicate the principles of genre and competitive analysis
	Introduction To 3D Modelling For Games [L4 30 Credits]	Students will be assessed on their ability to communicate current industry technologies and workflows used in the production of the environment.
Presentation skills	Junior Collaborative Games Development and Testing [L5 30 Credits]	Junior members of the team will be expected to contribute to the presentation of the final game in a way which demonstrates the qualities of their product in the best light.
	Senior Collaborative Games Development and Testing [L6 30 Credits]	Senior members would be expected to present their vision not only to the junior members of the team but also to the executive producers.
The ability to interact confidently with colleagues	Junior Collaborative Games Development and Testing [L5 30 Credits]	This will be observed formatively by tutors
	Senior Collaborative Games Development and Testing [L6 30 Credits]	This will be observed formatively by tutors
Independence of thought	Individual Games Technology Project [L6 30 Credits]	Individual project demonstrating the students' ability to study and work independently
	Introduction To 3D Modelling For Games [L4 30 Credits]	Students will be assessed on their ability to reflect upon suitability of the environment for the chosen game engine through comparison with professional works and critically evaluate the piece and determine improvements.
	3D Character Modelling For Games [L5 30 Credits]	Students will be assessed on their ability to reflect upon the effectiveness of different approaches used in 3d character modelling.
	Advanced 3D Games Engines And Scripting [L5 30 Credits]	Students will be assessed on their ability to reflect on the success of the creation process.
Skills of team working	Junior Collaborative Games Development and Testing [L5 30 Credits]	Formative assessment by Students on the Senior Collaborative Games Development and Testing module
	Senior Collaborative Games Development and Testing [L6 30 Credits]	Tutors will monitor the success of students on this module in their ability to work in a team as a senior member in a managing or guiding role
Ability to carry out inquiry-based learning and critical analysis	Individual Games Technology Project [L6 30 Credits]	The project will assess the ability of the student to choose, learn and be personally critical of the work they have undertaken and produced.
	Introduction to Games Design [L4 30 Credits]	Students will be assessed on their ability to evaluate and interpret the principles of character design in regards to level design.

	Introduction To 3D Modelling For Games [L4 30 Credits]	This module will assess the ability of students to apply appropriate techniques to create and modify 3D game assets by evaluating and applying a variety of industry production techniques.
	3D Character Modelling For Games [L5 30 Credits]	This module will assess the ability of students to analyse the effectiveness of 3D tools and create a viable production workflow using sound academic and industrial methods.
Skills of problem solving and creation of opportunities	Junior Collaborative Games Development and Testing [L5 30 Credits]	This will assess the ability of the students to problem solve a series of small problems undertaken as a part of the task of creating a publishable game
	Senior Collaborative Games Development and Testing [L6 30 Credits]	This module will assess the ability of students to problem solve large and complex problems to do with the management, artistic and technical direction of a game created by a team.
	Introduction To 3D Games Engines [L4 30 Credits]	Students will be assessed on their ability to use a broad range of functions within a games engine to create a multi-player and single player game levels
Technologically, digitally and information literate	Introduction To 3D Modelling For Games [L4 30 Credits]	These modules all at level 4 form the bedrock of the different technological and digital skills required. They also assess a breath of skills in games technology required to inform and support the modules at a higher level.
	Rapid Games Prototyping [L4 30 Credits]	
	Games Engine Creation [L4 30 Credits]	
	Introduction To Games Design [L4 30 Credits]	
Able to apply Staffordshire Graduate attributes to a range of life experiences to facilitate life-long learning	Individual Games Technology Portfolio	Portfolio of work demonstrating the students' ability to network with industry and develop industry facing examples of their work