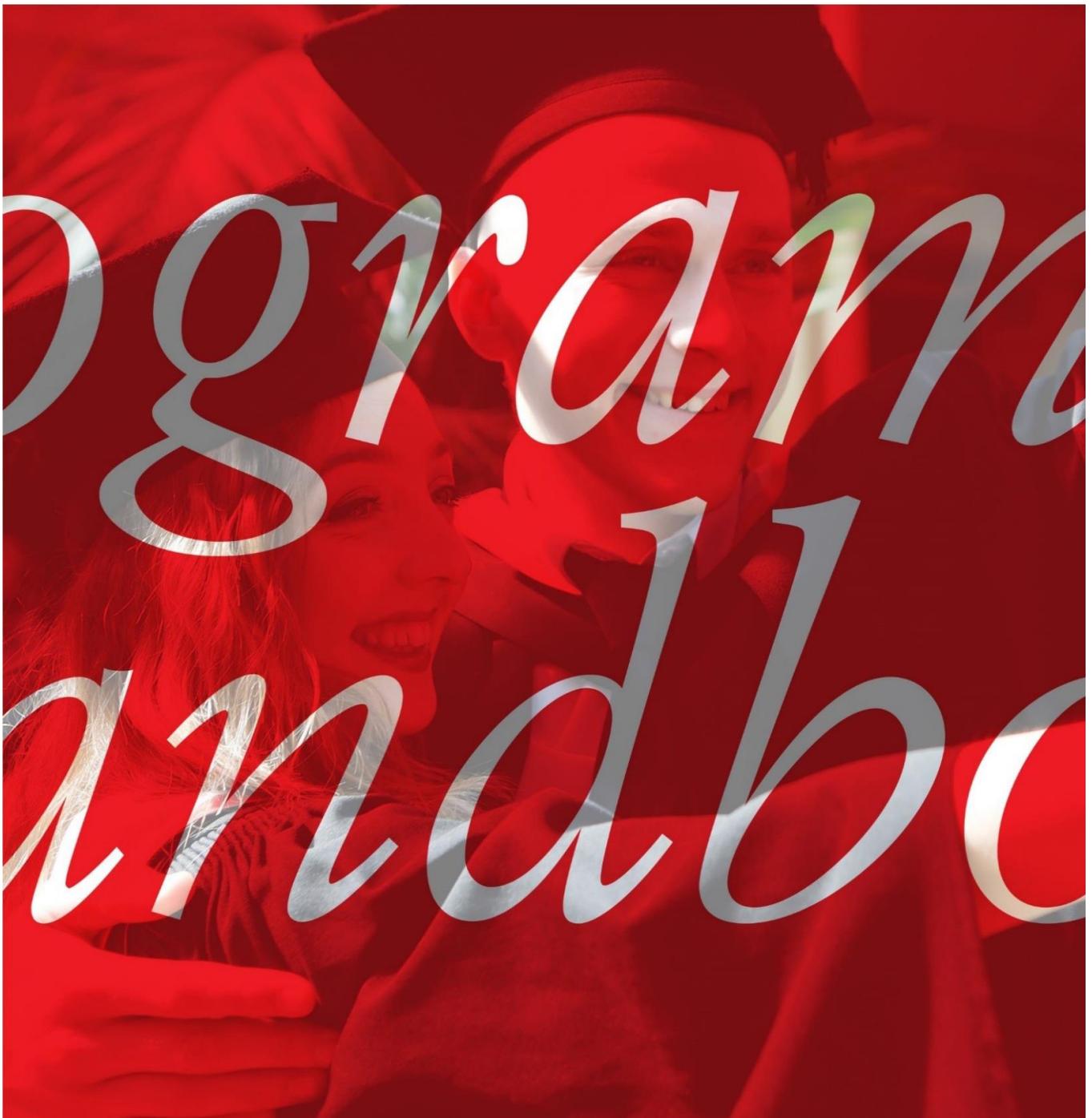


Programme Handbook 2020-21

Software Engineering (Game Development)

SOE-GD-2017



WELCOME

Welcome to Blackpool and The Fylde College and to the Software Engineering (Game Development) (SOE-GD-2017) programme.

This **Programme Handbook** aims to provide you with the key information you will need to settle into and get the most out of your programme of study here at the College leading to successful completion of your programme. It will provide you with an overview of the programme content, how individual modules are organised and delivered, how and when you will be assessed and how overall grades final results are determined. In addition there is information on the help and general support available to you as well as making it clear what you need to do if you should encounter any specific difficulties in progressing as planned on the programme.

There is also further information available on the B&FC [Student SharePoint](#) site which includes an overview of the College partners and how they will support you on your journey, alongside key information on College facilities, student representation and events you can get involved in. Guidance on term times, Travel to College, Attendance Expectations can be accessed through the College website and Canvas, your virtual learning environment (VLE).

It is strongly recommended that you refer to your **Programme Handbook** and **Student SharePoint** to ensure that you get the most out of the time you will have invested in participating in your valuable and hopefully enjoyable learning experience.

We appreciate that as students in order for materials to be fully accessible you may have a preference for a specific font size or colour of text/paper. To ensure that your needs are considered this handbook is available electronically.

Studying with B&FC from September 2020

B&FC has implemented a series of wide-ranging measures ensuring you will enjoy the best possible learning experiences in the safest, healthiest way.

From September 2020, students will continue to be provided with a vibrant learning environment using a mixture of campus-based and online teaching in line with the latest Government advice. While many lectures and assessments will mostly take place online, there will be some socially-distanced small-group teaching sessions and limited risk assessed access to laboratories, arts studios, performance spaces and specialist teaching facilities.

More information can be found on the B&FC website through the following links:

- [Studying with B&FC from September 2020](#)
- [HE Student FAQs](#)

GENERAL INFORMATION ABOUT YOUR PROGRAMME

Programme Code	SOE-GD-2017
Programme Title	Software Engineering (Game Development)
Teaching Institution	Blackpool and The Fylde College
Professional, Statutory and Regulatory Body (PSRB) Accreditation	None
UCAS Code	TBC
Language of Study	English
Version	1

Programme Awards			
Award	Award Type	Level	Awarding Body
LU Foundation Degree in Science	Foundation Degree (240 credits)	Level 5	Lancaster University
LU Bachelor of Science with Honours (Top-up)	Honours Top-up Degree (120 credits)	Level 6	Lancaster University

THE FRAMEWORK FOR HIGHER EDUCATION QUALIFICATIONS (FHEQ)

The Framework for Higher Education Qualifications (FHEQ) ensures the comparability of Higher Education qualifications in England, Wales and Northern Ireland. The framework describes the achievement represented by qualifications and the various awards which may be granted by a Higher Education provider with degree awarding powers. All students pursuing Higher Education programmes at Blackpool and The Fylde College are awarded qualifications aligned to the FHEQ upon successful completion of their programme.

Level	4	5	6	7	8
FHEQ Level	Certificate (C)	Intermediate (I)	Honours (H)	Masters (M)	Doctoral (D)
About this level of qualification	Level 4 These qualifications are work-related (vocational) higher education qualifications. While bachelors degrees tend to focus on gaining knowledge, HNCs are designed to give you the skills to put that knowledge to effective use in a particular job.	Level 5 These qualifications are designed to equip you for a particular area of work – as well as giving you the general skills that are useful in any type of job. They're university-level qualifications, but are designed with work in mind, with the help of employers from that sector.	Level 6 These qualifications are designed to give you a thorough understanding of a subject. They help you develop your analytical, intellectual and essay or dissertation writing skills. You'll also have much more of a say about the direction your learning takes than you've had previously.	Level 7 These qualifications are of academic study. They can be research based, a taught course, or a mixture of both, and will take at least 12 months of full-time study to complete. You may also have to submit a dissertation at the end of your course.	Level 8 This level gives you the opportunity to undertake an original piece of research. It will usually take at least three years of full-time study to complete. Many doctorate courses lead to a qualification such as a Doctor of Philosophy – a PhD or Dphil.
Qualifications that are available at this level	Higher National Certificates (HNC) Foundation Studies (FS) Diploma	Higher National Diplomas (HND) Foundation Degrees (FD) Diploma of Higher Education (DipHE)	Bachelor Degrees (BA, BSc) Bachelor Degrees with Honours (BA Hons.) Professional Graduate Certificates in Education (PGCE)	Masters Degrees (MA, MSc) Postgraduate Certificates and Diplomas Post Graduate Certificates in Education (PGCE)	Doctoral Degrees

PROGRAMME OVERVIEW

If you love video games you and want to work in the industry then you will love this course. The FdSc. and BSc. Software Engineering (Game Development) programme is an exciting course providing many opportunities for you to develop with industry relevant tools, languages and techniques equipping you with the best opportunities to succeed in game development and other development roles. We are the first college in the UK to be accredited to Honours level by the British Computer Society and are continually updating our resources to remain at the cutting edge and industry focused, giving you the best opportunities to take advantage of continued growth in the games industry and increased demand for developer roles locally, nationally and internationally.

Key elements of the programme include:

- You will code in industry relevant languages including C++ and DirectX to build skills valuable to developers in learning by doing
- You will examine and apply skills to a range of different delivery platforms and technologies for example PC, PlayStation, and mobile channelling your love of games into viable playable

products

- You will gain general software engineering skills including working with databases, networked applications, systems analysis, producing technical designs and working to established development methodologies and developing interfaces all of which increase the range of careers you can pursue both in and out of the games industry
- You will build a portfolio including 2D and 3D game demos, projects on licensed engines such as Unreal, database and network applications, Artificial Intelligence techniques and networked game demos, providing to employers evidence of your abilities and aptitude for key development roles
- You will work in team projects and individually, building collaborative and problem solving skills which will enhance value to future employers and develop yourself both personally and professionally
- You will analyse organisational structures in the games industry and development teams and build entrepreneurial skills so if you wish to set yourself up as an indie developer you will be well placed to do so and create your own opportunities

PROGRAMME AIMS

Aims FdSc:

- To provide students with a range of software engineering and game development cognitive abilities and skills including analysis of systems, software and code.
- To develop skills in software engineering and game development; including design, implementation and testing; enabling students to formulate decisions and develop software and apps.
- To support collaborative teamwork and leadership skills through team-based development projects working to industry-standard practices.
- To support students in building a commitment to lifelong learning and career development through industry-focused scenarios, work placements, career focussed tutorials, and personal and professional development planning.
- To build students' communication, information and digital literacy skills using a range of assessment approaches in software engineering and game development.

Aims BSc (Hons):

- To further develop knowledge and skills to enable students to formulate managerial and strategic decisions in the development of software and games.
- To provide the opportunity to accurately deploy established techniques of critical analysis and enquiry in software engineering and game development.
- To develop conceptual understanding that enables students to devise, develop and sustain arguments, using ideas and techniques from research and the wider subject discipline.
- To enable students to manage their own learning and to make use of scholarly reviews and primary sources.
- To build students' ethical, social and professional understanding in software engineering and game development within a global context.

PROGRAMME LEARNING OUTCOMES

Level 5

Upon successful completion of this level, students will be able to:

1. Identify, explain and discuss the technical and theoretical disciplines and applications involved in the design, development and testing of software and games. (1.3.1fdc) (6.3.i)
2. Analyse the social, legal and ethical aspects of design, development, testing and evaluation of software and games. (6.3.vi)
3. Apply mathematical principles required to design, development and testing of software and games. (6.3.ii)
4. Analyse, design, develop, and test, software and games, producing appropriate documentation, drawing on supporting evidence, and critically analyse, select and apply suitable tools and techniques with consideration of important relationships between development stages. (1.3.2fdc) (6.3.ii, 6.3.iii)
5. Communicate information in a variety of formats to a range of audiences using a range of media that evidences both academic and digital literacy skills. (1.3.5fdc) (6.3.v)
6. Work effectively as an individual and as a member of a team undertaking critical self-appraisal to support continued professional development, employability, lifelong learning and transferable skills. (1.3.3fdc, 1.3.4fdc) (6.3.v)
7. Integrate and apply essential concepts, principles and practice in the design and development of software and games, producing well-constructed programs to solve well-specified problems. (1.3.1fdc, 1.3.2fdc) (6.3.ii, 6.3.iv)

Level 6

Upon successful completion of this level, students will be able to:

8. Generate ideas, concepts, proposals, solutions or arguments independently and/or collaboratively exercising critical judgement to software and game development practices, techniques, applications and transferrable skills. (6.5.i, 6.5.v)
9. Employ both convergent and divergent thinking in the processes of observation, investigation, speculative enquiry and visualisation to formulate effective solutions to problems including selection of tools and techniques. (6.5.ii)
10. Critically analyse and evaluate the professional, economic, social, environmental, moral and ethical issues involved in the analysis, design and development of software and games, and apply appropriate professional, ethical and legal practices. (6.5.vi)
11. Undertake critical self-appraisal and manage own learning and development identifying the need for continuing professional development and lifelong learning. (6.5.vi)
12. Produce work involving critical problem identification, analysis, design and development of high quality software and games based on evidence that explains the relationship between these features, the need for quality and applying problem-solving and evaluation skills. (6.5.iii, 6.5.iv)

PROGRAMME STRUCTURE & ASSESSMENT OVERVIEW

Pathway	Module	Level	Credits	Coursework	Practical	Written Exam
Stage 1: Year 1						
Stage exit award: LU Certificate of Higher Education (Awarded by Lancaster University)						
All	B4SCSOE-GD: Introduction to Academic Study (Mandatory)	4	20	60%	40%	
	SOE401: Introduction to Programming (Mandatory)	4	20	100%		
	SOE402: Networking Concepts and Programming (Mandatory)	4	20	100%		
	SOE403: Database Concepts and Programming (Mandatory)	4	20	100%		
	SOE411: Maths and Physics for Gameplay (Mandatory)	4	20	70%		30%
	SOE412: 2D Games Programming (Mandatory)	4	20	100%		
Stage 2: Year 2						
Stage award: LU Foundation Degree in Science (Awarded by Lancaster University)						
All	BFC501-I: Work Based and Placement Learning (Mandatory)	5	20	100%		
	SOE501: Software Engineering and Technical Design Documentation (Mandatory)	5	20	70%		30%
	SOE511: 3D Games Programming (Mandatory)	5	40	100%		
	SOE512: Games Engines and Modification (Mandatory)	5	20	100%		
	SOE513: 3D Rigging and Animation (Mandatory)	5	20	100%		
Stage 3: Year 3						
Stage award: LU Bachelor of Science with Honours (Top-up) (Awarded by Lancaster University)						
All	CMP601: Dissertation (Mandatory)	6	40	100%		
	CMP602: Human Computer Interaction (Mandatory)	6	20	60%		40%
	CMP604: Entrepreneurial Management and Project Control (Mandatory)	6	20	60%		40%
	SOE611: Advanced Games Programming (Mandatory)	6	20	100%		
	SOE612: Online Multiplayer Gaming (Mandatory)	6	20	100%		

WHERE WILL I STUDY?

This programme may be studied at the following location:

B&FC University Centre

The majority of higher education courses are delivered at our University Centre in central Blackpool, within easy reach of student accommodation, shops, restaurants, bars and the promenade. This multi-million pound complex provides higher education students with a dedicated campus, with the major teaching and support facilities conveniently converging in an attractive central courtyard. The open-plan Central Hub houses a refectory, chill-out zones and the central learning resource centre. A unique and important addition to the Centre is our Gallery, housing works by both our own students and independent artists.

GETTING STARTED

At the start of your course, your tutors will guide you through an initial induction which is designed to ease you into university life and higher level studies. Activities generally focus on helping you to find your feet, make friends and plan your studies. It can also traditionally be the time when students get to let their hair down and familiarise themselves with both the College and the local area before getting down to the more serious business of studying.

Our annual Freshers' Fair is a fun, vibrant event and a great chance to find out more about what's on offer locally, with representatives from the B&FC Student Union, Higher Education Learning Mentors (HELMs), The Loop LRC, Careers Team and our Disability team who can provide information on Disabled Students' Allowances, access arrangements and reasonable adjustments. Representatives from local attractions, restaurants, health and fitness centres, clubs, bars and more will also be there. Support organisations and charities are represented too, along with B&FC's own clubs and societies and sports teams.

COURSE OPTIONS

This programme has specialised modules with prerequisites set to provide progression in depth within the area of Game Development. Therefore, there are no optional modules. Upon completion of the programme, there will be opportunities to take other modules or commercial opportunities on an individual basis; charging and options for these may change annually, so please discuss with Computing.

STUDY WORKLOAD

Timetabling for our programmes in computing is done to ensure that other commitments can be met, with most of our full-time HE programmes requiring one day and one evening of attendance. Where there are multiple groups, priority choice will be given to those with outside commitments, for example employment and childcare. There are many opportunities to work on assessments provided within our timetabled sessions however there will be formative and summative assessments set where you will be expected to complete work by a set deadline. Spending regular time on these activities will make this more manageable hence 'little and often' is an approach we take. Most summative deadlines are set for Sunday night to enable weekends to be spent on finishing work. The expected volume of independent study is on average 152 hours per module, which equates to 9.5 hours per week. Often students find that this is a high expectation, however through engagement with our formative assessments and direction, building up work over time and improving skills, students find the workload manageable and succeed from a diverse range of backgrounds.

LEARNING AND TEACHING

Key features of teaching and learning:

- Built on good practice and studies which have been done to establish the most effective means for you to succeed
- A wealth of multimedia resources so you can work at your own pace
- Supported workshops to aid you in coding, debugging, problem solving, and enhancing work by for example adding more features such as more engaging artificial intelligence or visually arresting shader effects
- Lectures, class discussions and analysis of case studies to introduce you to new concepts, theories and techniques, and to help in building understanding of theoretical content
- Team projects worked to established development methodologies (Agile / Scrum) to build your collaborative working skills and increase your value to employers hiring for development teams
- Clear building of academic skills, employability and graduate skills, with a focus on reflective practice to enhance your personal and professional development
- Approachable and friendly staff with an open door policy and individualised support so that you can feel welcome and comfortable in asking questions, gaining feedback and making progress

Independent Learning

All higher education programmes are designed so that you are able to progressively develop independent learning skills and aptitudes. Learning independently is a key skill of all graduates when they enter the work place and one which we aim to develop further during your time with us.

As you begin your programme you will be more intensively supported to develop the skills of learning and learning how to learn. As you progress you will be given the opportunity to apply these skills and to manage your own study time and activities with the goal of becoming a truly independent learner ready to get the most out of graduate employment opportunities.

Your Personal Development planning activities are a key component in developing these independent learning skills and your tutors, support mentors and peers can help you to organise and structure this aspect of your learning and development.

WORK BASED AND PLACEMENT LEARNING

At Level 5, students are required to undertake 100 hours of work based activity related to the programme. Work Placements are managed by an appointed Workplace Co-ordinator within the School who maintains liaisons with employers, performs visits and logs required documents such as insurance. Students are encouraged to seek out their own placements and preparation for this begins in the second semester of Level 4. Some placements require DBS checks and the forms are produced and collated by the Workplace Co-ordinator to ensure they are processed in good time. Should a student not be able to locate a placement themselves, the Workplace Co-ordinator will arrange interviews with employers. If there is difficulty in getting students placed then we can place internally with our IT Services and Technicians. In timetabled sessions, delivery includes generation of CVs, examination of professional guidelines and legislation plus also discussions and reflections of the application of course skills to a workplace context; these are then logged by the students electronically in a reflective format.

We are in liaison with multiple industry figures and this provides opportunities for live briefs, supported projects, checking of real-world scenarios for assessments and improving our curriculum.

GRADUATE SKILL DEVELOPMENT

These are the skills that you will develop as a graduate to prepare you for your career and how this programme helps you develop these:

A commitment to lifelong learning and career development

Personal and professional development planning throughout the programme so that you can plan for

career and skills development including post-graduate study or career opportunities.

Collaborative teamwork and leadership skills

Team based projects working to established methodologies (Agile / Scrum) will aid you in communicating with team members, assuming leadership roles where appropriate, managing group dynamics and working collaboratively towards common goals.

Personal and intellectual autonomy

We support your development of independence in academic and practical skills through the levels of the programme, culminating in the self-managed dissertation project where you will be responsible for managing your own extended project.

Ethical, social and professional understanding

Mapping of course content to British Computer Society criteria for Chartered IT Professionals ensures you have industry recognition from the UK's computing professional body.

Communication, information and digital literacies

You will develop your use of digital resources such as searching, blogging, messaging, use of wikis and collaborative environments and cloud storage which are valuable in all industries.

Global citizenship

Localisation concerns for interfaces will be covered so you can build an awareness of how to operate effectively in a global industry.

Research, scholarship and enquiry skills

The Dissertation will be led and managed by you in an area of your own choosing including significant research and development with limited supervision; this will enable you to independently research unfamiliar concepts effectively.

Enterprise and entrepreneurial awareness and capabilities

The Entrepreneurialism and Project Control module will analyse in detail entrepreneurial traits and case studies and you will be applying business planning skills so that if you wanted to become an indie developer or freelance then you will be well placed to do so and create your own opportunities.

ASSESSMENT

Key features of assessment:

- Regular formative assessment opportunities giving you the chance to submit drafts and practice tasks to gain feedback to improve
- Graded assessment submissions are balanced throughout the academic year so that you can manage your workload effectively
- Digital submission and feedback so that you can refer back to previous assessments to reflect upon progress and build confidence for future assessments
- A mix of written reports, design documentation, created assets, source code / program demos, reflective writing and other methods will be employed in coursework so you have a wide range of skills both academic and practical
- The assessments will include development of work which you can use to build your portfolio; this will include a 2D Games Demo in DirectX / C++ in a genre of your choice; a 3D Games Demo in DirectX / C++ to a specified genre; a team-based development on a licensed engine (e.g. Unreal); a portfolio of advanced optimisation, artificial intelligence and rendering techniques; and an online game demo. Your Dissertation will include a development of your choice related to the programme
- Written exams will include maths based problems, application of theories to given scenarios and analysis of case studies; targeted revision and mock exams will aid you in preparing for these

Assessment Methods

Some assessments may already be very familiar, such as essays, exams, and reports. However, in higher education there are a great many varieties of assessment depending on the subject, the level and the type of course. Our higher education courses often integrate academic and work-based learning so assessment may include aspects of personal reflection, portfolio building and case studies. Here's a bit more detail about some of the more common types of assessment:

Essay

An essay is an answer to a question in the form of continuous, connected prose, usually with a word limit. Often these are set by the tutors but you may also be asked to formulate your own question with the tutor's help. Essays test your ability to organise your thinking, discuss, evaluate, analyse, summarise and criticise. They also test your skills at making essay plans and reaching a robust conclusion or decision.

Assignment or brief

An assignment or brief is a learning task that allows you to cover a fixed section of the curriculum predominantly through independent study. Different methods of presenting the results can be used dependent on the nature of the task - a report (oral or written), a design solution, a newspaper or magazine article, a video, a poster, a research bid, a book review, a contribution to a debate, etc.

Group project or assignment

This is where either an assignment or project is undertaken by groups of students working collaboratively, helping to develop team working skills and other graduate attributes. In some cases, particularly where the same thing happens in industry, there are particular assignments that can by definition only be achieved in a group. Such assessments will incorporate mechanisms which allow the tutor to assess the contribution of individual members of the group or team in order to allocate individuals with a personalised assessment grade.

Exams

Exams can take a variety of different forms, with the most common sort being done under timed and observed conditions to ensure it is the student's own work. Exams test your ability to think critically, to respond in a structured way to a question and to plan on the spot as well as your knowledge and understanding of the subject. Some of the most common types of exams are:

- 'Seen' where the questions to be answered are given at a pre-specified date beforehand. The intention is to reduce the need for 'question-spotting', to reduce the anxiety and to increase the emphasis on learning
- 'Open-book', where you will have access to specified texts and/or your notes. the intention is to reduce the emphasis on memorising facts, to reduce anxiety and allow more demanding questions to be set
- 'Unseen' where you don't know what the questions are until you sit the exam. Arguably these make you focus on the whole syllabus because anything may appear on the paper
- Multiple choice exams where you simply select from a bank of potential answers. These also assess your decision making skills

Logs and Portfolios

These are an increasingly popular kind of assessment, and involve a collection of all sorts of evidence of your work (often including others' testimony about your work, and feedback you've collected). Portfolios are intended to be a measure of the work of the 'whole candidate', rather than just particular aspects of the candidate's work. They also measure your ability to organise a collection of evidence, in a readable, navigable way. Not least, they test your ability to stick to deadlines with a big, multifaceted job.

Reports

There are many kinds of reports – laboratory ones, field-trip ones, business ones, and so on – each has its own conventions and preferred formats – your tutors will tell you more. Assessed reports measure your skills at finding out about, and adhering to, the expected report formats and conventions in your subject discipline. They also measure your ability to put forward an organised piece of writing, coming to conclusions, making suggestions for further work, and so on. They often test your skills at interpreting data, making sense of your findings, and so on.

Calculations and problem solving

Usually given in sets – with a deadline for tutor marking, or to bring along completed to a tutorial. These, unsurprisingly, tend to measure your ability to solve problems and do calculations.

Presentations

Lots of students worry about presentations – you normally build up to these as your course progresses and you'll be given lots of support and time to prepare. You may be involved in group or solo presentations, perhaps to some or all of your class, usually with the tutor present. Sometimes peer assessment is used. Presentations measure your ability to talk fluently about a topic, and to answer questions from the group. They also measure your skills at preparing visual aids (overheads, handouts, PowerPoint presentations) to support your presentation. On some courses there are very few presentations. However, in the workplace, more and more people have to be involved in them, so practising on your course is a very good way of developing your skills.

Self and peer assessment

There is strong evidence that involving students in the assessment process can have very definite educational benefits. Not so much a type of assessment like those already listed, this is something which can be done in conjunction with any type of assessment. The important aspect is that it involves the student in trying to apply the assessment criteria for themselves. This might include: a marking exercise on 'fictitious' or previous years' student work; the completion of a self-assessment sheet to be handed in with your work; 'marking' a peer's work and giving them feedback (which they can then possibly redraft before submission to the tutor); or really marking other students' work (i.e. allocating marks which actually count in some way) - a seminar presentation, for example, or a written product using a model answer. The evidence is that through trying to apply criteria, or mark using a model answer, you will gain much greater insight in to what is actually being required and subsequently your own work improves in the light of this.

When will I be assessed?

In the majority of courses you will be assessed throughout your course and you will receive on-going feedback to help you develop academically. This is sometimes called formative assessment and is designed to help you learn as you go through your course. Some formative assessment is quite informal; it may be your tutor asking specific questions in class, for example. Other types of formative assessment can include written reports, essays, tasks for seminars etc., some of which are handed in so that written feedback can be provided. You will also be assessed summatively. This just means that in each module or unit, often at the end, you will complete work that is then graded, where the mark counts towards your final qualification.

At the start of your course you will be given an **assessment schedule** which details the deadlines for the assessments in all the modules you will be studying. This will help you to plan your work effectively. Your tutors understand that you have lots of commitments so will always try to spread the assessments out as much as they can, although inevitably many will come towards the end of each semester.

How will my work be marked and graded?

The majority of your assessments will be awarded a letter grade as outlined in the table below. Some of your assessments may however be assessed by percentages, which are converted into an aggregation score. Some assessments may also be identified as pass/fail assessments. Such assessments must be successfully passed in order to pass the module, however the aggregate score for the module will be derived from other assessments which are graded. Overall, you must achieve an aggregation score of 9 or above to pass a module.

Further information is available at: <http://www.blackpool.ac.uk/he-regulations>

Category	Grade	Aggregation Score	Grade Description
Excellent Pass	A+	24	Exemplary range and depth of attainment of intended learning outcomes, secured by discriminating command of a comprehensive range of relevant materials and analyses, and by deployment of considered judgement relating to key issues, concepts and procedures
	A	21	
	A-	18	
Good Pass	B+	17	Conclusive attainment of virtually all intended learning outcomes, clearly grounded on a close familiarity with a wide range of supporting evidence, constructively utilised to reveal appreciable depth of understanding
	B	16	
	B-	15	
Satisfactory Pass	C+	14	Clear attainment of most of the intended learning outcomes, some more securely grasped than others, resting on a circumscribed range of evidence and displaying a variable depth of understanding
	C	13	
	C-	12	
Weak Pass	D+	11	Acceptable attainment of intended learning outcomes, displaying a qualified familiarity with a minimally sufficient range of relevant materials, and a grasp of the analytical issues and concepts which is generally reasonable, albeit insecure
	D	10	
	D-	9	
Marginal Fail	F1	7	Attainment deficient in respect of specific intended learning outcomes, with mixed evidence as to the depth of knowledge and weak deployment of arguments or deficient manipulation
Fail	F2	4	Attainment of intended learning outcomes appreciably deficient in critical respects, lacking secure basis in relevant factual and analytical dimensions
Poor Fail	F3	2	Attainment of intended learning outcomes appreciably deficient in respect of nearly all intended learning outcomes, with irrelevant use of materials and incomplete and flawed explanation
Very poor Fail	F4	0	No convincing evidence of attainment of any intended learning outcomes, such treatment of the subject as is in evidence being directionless and fragmentary

What if I experience circumstances which mean I will not be able to complete an assessment?

The Personal Mitigating Circumstance (PMC) procedure gives you the opportunity to inform the College of serious medical or personal circumstances, which you believe, have affected your academic performance in an adverse way before the meeting of the Board of Examiners.

You may have had genuine and unavoidable circumstances that have affected your performance in coursework. These circumstances may have prevented you from being assessed or from submitting coursework on time. In all cases, it is important that you contact the HELM team at HELMinfo@blackpool.ac.uk to say that you are having difficulty completing work and are planning to apply for PMC.

A Personal Mitigating Circumstance Application Form must be completed by you and is available via the College website / Student Administration / Reception. It is your responsibility to complete and submit the form to the HE Student Administration Manager within 10 days of the assessment deadline.

You cannot request an extension to the assignment deadline date. Assignments must be handed in as soon as possible even if they are incomplete. If your PMC application is approved, you will be given an amended deadline and the opportunity to improve your work further.

For full details of this procedure please refer to: <http://www.blackpool.ac.uk/he-regulations>

What if I miss a deadline?

Managing your time effectively is a key graduate skill and you are therefore encouraged to plan your programme workload alongside your other commitments. If you fail to meet an assessment deadline, it will be penalised. Work submitted up to three days late will receive a penalty of one full grade and zero (non-submission) thereafter.

Deadlines are normally set on Mondays and Fridays to avoid the third day occurring at a weekend. Where the third day does fall on a weekend, students will have until 10 am on Monday to hand in without receiving further penalty. The penalties associated with the late submission of percentage coursework are outlined in the academic regulations for your programme.

For more information, please refer to: <http://www.blackpool.ac.uk/he-regulations>

What happens if I fail a module?

Most students pass their work, but if your mark for an individual module is less than the minimum pass grade you will be referred on that module. This means that you will have to be reassessed in the relevant work, however a second attempt will be subject to a penalty as specified within the academic regulations for your programme.

Where Personal Mitigating Circumstances are approved, this will typically prevent any penalties being applied and usually allow the work submitted to be marked as a first attempt.

Moderation

All work that you submit for assessment is marked by your module tutor. A suitable sample is then selected to be moderated by another tutor. This is to ensure that the mark awarded is reliable and not just the judgement of one marker. All of the work you submit is retained by the College to assist our external examiners in the quality assurance of your programme. This may mean that the results you receive during the year may change and should therefore be considered provisional.

External Examiners

Every higher education programme has its own External Examiner whose role is to support the academic staff team in ensuring that the standard of your programme of study is comparable to other programmes in that subject discipline. The External Examiner will confirm that the work that you have produced is of a standard that is expected and identifies any issues that the academic staff team needs to take into account to continually improve the programme. The External Examiner also feeds back on the key strengths that make your programme a really effective and valuable learning experience.

External Examiner reports for your programme can be requested by emailing highereducation@blackpool.ac.uk

Board of Examiners

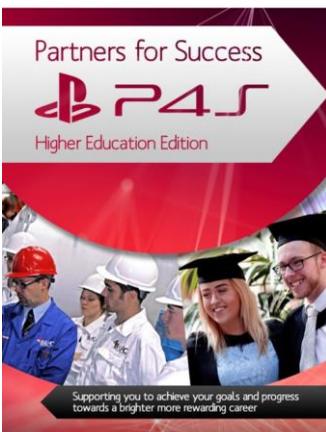
Once a module is complete, the marks for all assessments are compiled together to create an overall module mark.

The module board of examiners sits at the end of each semester to consider modules in scope. Your overall marks for the year are considered by a programme board of examiners that will make recommendations regarding your progression between levels, reassessment and eventually the award of your qualification. The majority of programmes within the college run an academic year between September and June. Reassessment work will therefore normally be completed during the summer months and submitted by the end of July (the precise date is set by the board).

The board of examiners sits again prior to the start of the next academic year in September where the results of any summer reassessment work will be considered.

Where programmes fall outside of the standard academic year, the timing of the board identified above may vary, however the general process remains the same.

PARTNERS FOR SUCCESS



The Partners for Success framework has been developed from our considerable achievements and successful review outcomes in supporting students and ensuring that they are provided with the best possible opportunities to engage fully with their learning experience and the full life of the college. It outlines how staff, students and the wider college community work to provide a seamless network of support to enable all students to achieve their potential.

Studying at University level can mean quite a life change, particularly if you have to move away from home, juggle study with work or have caring responsibilities while studying. You may also be returning to study after a period away and feel unsure exactly what to expect. Most students new to higher level study also comment on the fact that it can be quite different to their previous studies.

Our central aim is to enable all students to become confident and competent independent learners and achieve to the maximum of their potential through the development of their academic skills, personal well-being, literacies and professional employability attributes.

- We will work in partnership with all stakeholders, students, staff and others to ensure and assure personal change and development through mutual expectations, mutual agency and clear communications.
- We will provide students with a network of support to enable their development and achievement of their personal, academic and professional goals

Key partners in your success are:

- Your Progress Tutor and the programme delivery team
- Careers team

- Student Support and Wellbeing including HE Learning Mentors (HELMS)
- Learning Resource Centre teams
- Student Union
- You!

Your Progress Tutor and the programme delivery team

Here at Blackpool and the Fylde College every student is entitled to receive tutorial support on their programme of study. Tutorials are an important learning activity; they give you the opportunity to engage in dialogue with your tutor on matters of academic progress as well as personal and pastoral issues which may impact on your learning experience.

The benefits of tutorials are that they help you to individualise your learning on programme and to receive constructive feedback on your work specifically and progress generally. Tutorials are an essential component of the B&FC Partners for Success framework which aims to enable your personal and academic development, and maximize your opportunities for success, through coordinating the range of support services available to you through your progress tutor. Tutorials can help you to critically engage with your subject in a way that you may not be able to do in lectures and other forms of learning. Your tutors will encourage creativity and originality of thought that will help you to gain a better understanding of the subject discipline helping you to achieve your potential and experience high levels of success.

You can ensure that you get the most out of tutorials by:

- Proactively seeking out information before the tutorial to prepare yourself for the discussion and dialogue
- Actively engaging in discussion with your tutor.
- Using the tutorial opportunity to ask questions of your tutor and engage in critical discussion.
- Receiving feedback and using this to plan your next piece of work or setting personal and academic targets for future learning activities

The Careers Team

University Centre

Located in the Foyer, ground floor, South Building
Tel. 01253 504474

Bispham Campus

Located opposite the main Reception area in the Hub
Tel. 01253 504298

Student Advisors

Student Advisers provide you with confidential and impartial information on a range of areas, and work to matrix quality standard to ensure excellence of support, advice and guidance to all our Students and prospective Students. Quick-query interviews usually last approximately ten minutes. For example, you might want to ask about job vacancies, for help with preparing for an interview, or advice on financial assistance etc. If you have a more complex query the Student Adviser will make a mutually convenient appointment with you for a longer interview. Careers Information Advice and Guidance and financial Help Group sessions also take place throughout the academic year.

Student Advisers also provide a drop-in service at all Blackpool and The Fylde College Campuses, so you don't need to book an appointment to see an Adviser.

Financial Help and Support

Student Administration can provide you with information and advice on access to help with transport, childcare and HE bursaries.

The Careers Team can help you if you find yourself in financial difficulties and will also help with advice and guidance regarding student loans.

Accommodation

Our Student Advisers can help you find student accommodation and provide advice on costs, and other expenditure i.e. rent bond, gas, electric, TV, phone, travel etc.

Careers Information, Advice and Guidance

The Careers Team are all highly qualified in careers information, advice and guidance and can help you with UCAS applications for entry to Higher Education, with making decisions about progression to other courses, job application, CV preparation and interview techniques alongside career and further training pathways and opportunities. Our team of professional Student Advisers are available to help you with all aspects of your career planning and decision-making, such as:

- Making decisions about your future career
- Planning your job search strategy
- Curriculum Vitae (CV) writing
- Getting relevant work experience - including volunteering
- Making applications and preparing for interviews
- Researching postgraduate study options

At Blackpool and The Fylde, our careers service extends far beyond helping you to pinpoint your ideal career. The emphasis is on tailoring a 'careers package' to your particular aims and aspirations that gives you the skills and experience needed to make you highly employable from the moment you graduate.

That's why all our degrees have a strong employment focus, with opportunities to try out your chosen career area, learn skills that employers are specifically looking for and practice interview and assessment techniques with representatives from industry. We also run an online job shop, backed up by a highly trained team of staff dedicated to making your career goals a reality.

You may be starting your course already clear about what you want to do when you graduate or you may not be sure at this stage. Our experienced and professional team of careers student advisers offer careers and progression advice to guide you towards making the right decisions about your future. Choose from e-guidance, telephone and face-to-face interviews within a small and supportive environment. We also offer pre-course advice and guidance. Underpinning all of this is a vast range of careers library resources together with access to internet-based resources, video resources and computer-aided guidance packages.

Enhancing your Employability

The opportunity for you to develop your graduate skills and attributes is built into all our courses to ensure you graduate not just with subject knowledge but with the ability to embark on your chosen career and hit the ground running. Our programmes also provide an opportunity to discover more about your chosen career area through visits from external speakers and trips to local employers and industry. Some programmes even contain a workplace learning module, where you'll get to spend time with an employer, putting your knowledge into practice and gaining valuable employability skills at the same time.

Getting Ready to Graduate

About a year before you're due to graduate we will invite you to take part in our graduate employability workshops, covering topics such as making the right career move, effective applications and successful interviews. In addition, local employers run mock interviews and facilitate role-play scenarios for students, which replicate the assessment centre experience for newly qualified graduates. These experiences are vital for developing an awareness of your strengths (and playing to them) and gaining an understanding of what graduate recruiters are looking for. Some of our students have even been offered a permanent position on the strength of them.

Grad Intelligence

B&FC in partnership with **Grad Intelligence** provide you with a Higher Education Achievement Report (HEAR) which will be published when you finish your degree.

An account will be created for you as part of your enrolment and you will receive an email to your student email account from accountregistration@gradintel.com, which will give you instructions on how to activate your account.

There is a range of psychometric tests and other tools available that can help you develop your employability skills. You can also create your own e-CV on the platform and access opportunities to search and apply for graduate jobs and/or further study.

HEAR (Higher Education Achievement Report)

The HEAR provides verified information about your academic and college verified non-degree related achievements.

You will be issued with an updated 'interim HEAR' annually in the summer, and a 'Final HEAR' will be issued when you graduate.

Engage with '**DegreePlus**' to evidence your employability skills and attributes to enhance your future employment opportunities.

DegreePlus awards will give you a head start as you enter the highly competitive graduate job market. Each award captures the additional activities you have undertaken which improve and develop your employability.

Gaining additional qualifications can help you stand out as someone who is passionate about professional development.

Student Support and Wellbeing

The Student Support and Wellbeing team offer a range of support tailored to you to promote independence and maximise your potential through a range of enhanced study, mental health and wellbeing strategies.

- Higher Education Learning Mentors (HELMs) email: helminfo@blackpool.ac.uk telephone 01253504494
- Disability Support: email dsainfo@blackpool.ac.uk telephone 01253504494
- Wellbeing self-referral form online at <http://www.blackpool.ac.uk/getwellbeingsupport>
- Wellbeing Support: email general enquiries wellbeingsupport@blackpool.ac.uk
- Support for care leavers, carers and students who do not have contact with their family: succeed@blackpool.ac.uk
- Safeguarding College Hotline 01253 504444 (9am to 4.30pm)

HE Learning Mentors (HELM)

The HELM team can support with aspects of student academic life, from settling into higher education, helping you gain and enhance study and digital skills and creating wellbeing strategies to work as independent learners. Examples of some of the study skills development and enhancement that we offer include:

- Improving your academic writing style.
- Grammar, sentence structure and developing expression.
- Critical and reflective writing.
- Information skills development, such as research, applying theory to your practice / study and referencing.
- Effective study techniques, planning, structuring and polishing assignments, time management and organisation.
- Revision and examination techniques.
- Digital literacy
- Support with Personal Mitigating Circumstances and Interruption of Study to help you get back on track and complete
- Keeping in touch support for Care Leavers, Carers and students with no family support contact.
- Signposting to other Partner for Success services

In addition to individual support, HELMs deliver a range of study and wellbeing skills through workshops including the 'Flying Start' and 'Flying Further' programmes. These are designed to complement the knowledge and information gained from your course. If you wish for the HE Learning Mentors to deliver a workshop for you liaise with your tutor or direct with the HE Learning Mentors team.

For help, advice and information:

- Phone: 01253 504494
- Email: HELMinfo@blackpool.ac.uk
- Drop in: to the University Centre South Building Entrance

SUCCEED is Blackpool and The Fylde College's package for Higher Education care leavers, carers and students who do not have any contact with your family, we can support you.

We offer you help with:

- Finance including application for B&FC Access Scholarship. For further information of all B&FC financial support visit the following link <https://www.blackpool.ac.uk/support/funding/degrees>
- Assignments and exams
- Wellbeing
- Signposting to other services

In addition we offer regular contact, one-to-one support with a named HELM to help you stay on track. For more information on support and eligibility.

For help, advice and information:

- Phone: 01253 504494
- Email: Succeed@blackpool.ac.uk
- Drop in: to the University Centre South Building Entrance

Disability Support

We understand everyone has different needs and some students with disabilities, sensory loss, learning differences, medical and/or health conditions (including mental health) or Autistic Spectrum conditions may need additional support to get the most out of College life. Student Support and Wellbeing offer a range of support tailored to you to promote independence. We work closely with your curriculum teams, supporting accessibility and inclusion.

There is specialist support available to help you succeed at studying with your declared condition. If you are able to provide evidence from a suitably qualified professional (please see below for examples), Exam Access Arrangements and support via the Disabled Students' Allowances (DSA) can help reduce many potential barriers.

Conditions and evidence required

Disabilities or long-term health condition

A photocopy of a report or letter from your doctor or consultant - you can also fill in the [disability evidence form from your Funding Body \(PDF, 65KB\)](#)

Mental-health condition

A photocopy of a report or letter from your doctor or consultant - you can also fill in the [disability evidence form from your Funding Body \(PDF, 65KB\)](#)

Specific learning difficulty like dyslexia

A photocopy of a 'diagnostic assessment' from a practitioner psychologist or suitably qualified specialist teacher

Support with gaining diagnostic evidence

If you do not have medical evidence of your condition, or a report available, we can offer advice on how to obtain this and in most cases provide funding.

If you are moving locally to Blackpool for the purpose of your study, you may want to consider temporarily transferring your health support to ensure cover for medication/prescriptions and referrals to local support groups. To find a local GP you can use the national NHS link <https://www.nhs.uk/Service-Search/GP/LocationSearch/4>

Disabled Students' Allowance

DSAs are Student Finance grants that pay directly for extra Assistive Technology and Specialist Support (out of class) that may benefit you as a direct result of your medical/health condition. Visit the [DSA pages](#) on the UK Government website to learn more about the application process.

B&FC offer (subject to eligibility) the Advantage Bursary or hardship funding to cover the £200 contribution cost of a computer as part of the DSA.

Examination Arrangements

Exam Access Arrangements are pre-examination adjustments put in place for you based on your individual need, for example, readers, scribes, rest breaks. You will need to refer yourself to Student Support and Wellbeing for exam access arrangements for approval prior to your exams.

General Support

Campus Access:

Visit [AccessAble](#) website for access information for our campus sites. This includes details of B&FC facilities.

Wellbeing Support

The Wellbeing Service at Blackpool and The Fylde College offers a wide range of support, including wellbeing and short term counselling appointments, interactive workshops and support to access self-help resources.

To access support from the wellbeing team, please complete the [wellbeing referral form](#).

Responses to this form are monitored twice a day (9-4pm) from Monday to Friday during term time.

Please note that this is not an emergency service. If you are concerned about your safety or the safety of someone else call your **GP, NHS 111** or attend **Accident and Emergency** at Blackpool Victoria Hospital.

Visit the [Wellbeing area](#) on SharePoint for more information and guided self-help.

Visit the Contemplation rooms for quiet meditation, prayer or just 'time out'.

The Contemplation rooms can be found at:

- Bispham Campus - C307 - Third Floor Room - Cleveleys Building
- University Centre - SB130 - Second floor Room - South Building
- Fleetwood Campus- Room A33 Ground Floor- Halls of Residence

To use the contemplation rooms, visit the main campus reception and sign for the room key.

For help, advice and information:

- Phone: 01253 504494
- For general enquiries please email wellbeingsupport@blackpool.ac.uk
- Drop in: to the University Centre South Building Room 26c)

Need help now?

B&FC Safeguarding - If you feel unsafe or at risk at College contact your tutor or the Student Direct Safeguarding College Hotline: 01253 504444 (9am-4.30pm). If you require advice or assistance about disclosing a safeguarding concern you should discuss this with your Progress Tutor or any member of staff.

If you feel you are at risk of harm to yourself or others and need immediate help, contact the National Health Services (NHS) such as your GP or alternatively ring 111 as soon as possible, if you are in an emergency situation ring 999 or go to Accident and Emergency (24 hour) Victoria Hospital Whinney Heys Rd, Blackpool, FY3 8NR and request a mental health assessment.

Alternatively go to your nearest Walk in Medical Centre:

- Whitegate Health Centre, Blackpool, FY3 9ES
- Fleetwood Health & Wellbeing Centre, FY7 6HP

Need to Talk?

Support is also available externally from the following organisations:

Mental Health Helpline Freephone 0800 915 4640. <http://www.lancs-mentalhealthhelpline.nhs.uk>

Samaritans (24 hour) Freephone 116 123 <http://www.samaritans.org>

HOPELINE - Call: 0800 068 4141, Text: 07786209697 or Email: pat@papyrus-uk.org (10am – 10pm weekdays, 2pm – 10pm weekends and bank holidays)

LEARNING RESOURCE CENTRE TEAMS

Whichever campus you study on, the Learning Resource Centres (The Loops) will play an important part in your studies. Our flexible learning spaces can provide you with a mixture of computer, group work and quiet study areas. You should make maximum use of this facility to log-on to a PC, access printing and copying facilities or ask the Resource Advisers for help and advice.

You will have access to a wealth of information through a wide range of physical and online resources such as e-books and full text journal databases giving 24/7 support for your academic work. Our online search tool Discovery is available for you to search for high quality, relevant journal articles to support your studies. Our online catalogue - <https://libcat.blackpool.ac.uk> - is also available 24/7 allowing you to check reading lists, reserve titles, renew borrowed items and provide direct links to the titles in our extensive eBook library. We can also provide material from other libraries through our inter library lending scheme.

Our teams are always happy to offer help and advice. They have in-depth knowledge of your subject area and can support you in finding good quality research material, as well as developing your IT and research skills through one-to-one sessions. Interactive support materials are available through the Learning Resources area on the virtual learning environment, Canvas. More information about The Loops, including the opening hours for each centre, can also be found on the [college website](#)

Term time opening hours

The Loop at UC

Monday – Thursday 8.30 – 21.00

Friday 8.30 – 17.00

Saturday 10.00 – 15.45

Email: CentralLoopLRC@blackpool.ac.uk

Telephone: 01253 504414

The Loop at Fleetwood

Monday - Thursday 8.15 – 19.45

Friday 8.15 – 17.00

Saturday 10:00 – 15.50

Email: Ircfle@blackpool.ac.uk

Telephone: 01253 504714

The Loop at Bispham

Monday – Tuesday 8.30 – 17.00

Wednesday 8.30 – 20.00

Thursday - Friday 8.30 – 17.00

Email: Ircbis@blackpool.ac.uk

Telephone: 01253 504290

Self-issue / return facilities are available in the Bispham, Fleetwood and University Centre Loops. There are drop-in IT-based facilities with networked computers (including Macs in the Loop at UC) and wireless laptops, colour printing and scanning facilities. In addition, the Loop teams can help you get connected to the Wi-Fi and other college systems. Help with IT issues is available through an online HelpDesk.

You can access computing and copying facilities at any campus, if this is more convenient for you when engaged in independent study, but the majority of course specific materials will be located in the Loop on the campus where your course is based.

You will find the essential texts for your course available in the library stock and these are regularly updated. Relevant journals and online resources are purchased on an annual basis. For all Higher Education courses you will have access to online reading lists via the Keylinks software. These online reading lists directly link you to the core eBooks and print resources in the library catalogue, thus enhancing their accessibility.

Following an initial Welcome Tour of your local Loop, your tutor will arrange for us to work with you in follow-up in-depth sessions on key skills such as effective searching of online resources and referencing. Induction sessions are also provided at the start of your programme to help you find your

way around technology in the college. Additional one-to-one tutorials are available to all students. LRC support is supplemented by a range of interactive resources on Canvas.

The services provided by the Learning Resources Centre will be an integral part of the Induction Programme for this course.

Information Technology Resources

Being able to access resources and materials to help you on your course when you need them is very important. Canvas is our virtual learning environment, and contains lots of key information about your course and is accessible 24:7. As part of your induction we will make sure you are able to make the most of this resource.

As a student at Blackpool & the Fylde College you will be provided with a web-based Microsoft Office 365 account. This account provides anytime, anywhere access to a suite of Microsoft programmes including Outlook email and web-based versions of Word, Excel and PowerPoint. You also get access to your own online storage area so you can download, edit and save your college work wherever you are.

Included in your Microsoft Office 365 account is access to our MyDay portal. The portal provides you with access to your calendar (including timetables), email and links to the VLE and eTrackr. Timetable data is updated every hour so you can see all room changes. It is accessible from a web browser and as a mobile device app on Apple and Android devices. MyDay will be launched automatically whenever you login into a College desktop computer.

To find your course materials, log-on to the VLE, the College's virtual learning environment. The VLE contains lesson notes, multimedia materials, quizzes, forums and lots of different tools to help you achieve your academic goals. You may submit your assignments through the VLE and receive online feedback from your tutors. The VLE also provides easy ways for you to communicate with your tutors and fellow students using messaging, chat rooms and forums. You can access your Office 365 and VLE accounts by logging into one simple webpage MyDay which also contains useful college information, news and links:

<https://blackpool.mydaycloud.com/dashboard/home>

Induction sessions are provided to all students at the start of their course to help you find your way around technology in the college. 'The Loop' LRC's are located on each campus. You can pop into The Loop and log-on to a PC, access printing and copying facilities or ask the Resource Advisers for help and advice.

STUDENT UNION

The Students' Union (SU) at B&FC is *your* union. It's made up of students that *you* elect each year, who listen to the student voice and respond to *your* wants and needs. The SU represents students on a range of issues, including equality and diversity, education and social activities, with the aim of ensuring your time here is as interesting and enjoyable as possible.

As a student at Blackpool and The Fylde College, you are automatically free members of the Students' Union and you are encouraged to play an active role. Our Students' Union is actively engaged in student affairs at local and regional levels so there are opportunities for you to become involved in various campaigns and fund-raising activities. Our aim is to work for the good of the student community and to take an active interest in the development of all students. As such the Union represents the students on a number of academic and College committees where student involvement and comment is welcomed.

The Union provides the framework and financial backing for students to organise trips and events, which can be a great way to broaden your interests and meet new people. With a wealth of information, our Students' Union can also advise you on places to go and things to see and do.

If you need to get in touch, you can contact your Student Union Sabbatical Officer by phone or email.

B&FC Student Union Sabbatical Officer

Tel: 01253 504 517

Email: studentsunion@blackpool.ac.uk

BEING A PARTNER IN YOUR OWN SUCCESS

Higher education is as much about personal change and development as it is about subject knowledge and skills development. By facilitating your development we enable you to take responsibility for your own learning. Students who are fully informed about the opportunities available to them, but who are also aware of their responsibility to engage with those opportunities, are more likely to make effective use of services and resources. It is important that you take advantage of every opportunity to facilitate your success, and to creatively engage with the knowledge you encounter, constructing and reconstructing your own understanding. We will support you to set clear goals, reflect on your progress and develop key graduate skills.

ABSENCE REPORTING

If for whatever reason, including ill health, you are going to be absent from College then you will need to ensure that you make contact with us to discuss how we can support you. This is particularly important if your absence could have a significant effect on your assessment requirements. Should this be the case then you will need to consider the College Personal Mitigating Circumstances procedure the full version of which is available at the link below.

<https://www.blackpool.ac.uk/he-regulations>

Any personal mitigating circumstances, such as ill health, which may have affected your studies or performance in assessments and examinations, would need to be submitted to the HE Student Administration Manager mitigating.circumstances@blackpool.ac.uk formally by you with supporting evidence, e.g. a medical certificate, following the procedures and in accordance with the deadlines laid down in the College's Personal Mitigating Circumstances Policy.

In the event that you are unable to attend an examination because of illness or other unforeseen circumstances, you must immediately inform your programme leader before the start of the examination. If you are absent from the whole or part of an examination because of illness, a Personal Mitigating Circumstances application form together with a valid medical certificate or other appropriate independent documentary evidence must be forwarded to the HE Student Administration Manager normally within ten working days of the examination.

STUDENT IDENTITY CARD

You must wear your ID badge at all times whilst on College premises. Access to College facilities is dependent on Students having their ID badge. You will also be asked to show your ID badge when sitting exams. You will be challenged if you are not wearing your badge when on College premises. This is to help students and staff feel safe in College.

FOOD ON CAMPUS

When you want to take a break for refreshments on campus, you're well catered for. At the University Centre's Central Hub refectory, **Café Grads**, you can sit down and tuck into a proper meal or just grab a bite and relax in one of the chill-out areas. A **Starbucks** outlet has also just opened in South Building.

A similar-style refectory, **Retreat**, is available at our Bispham Campus or if you fancy a little treat there

is also a range of freshly made sandwiches and smoothies in the **Grab and Go** and a **Starbucks**. At the Fleetwood campus the **Refectory** offers traditional breakfast, a wide range of hot food, sandwiches, snacks and beverages. Visit <http://www.blackpool.ac.uk/facilities/shops> for more information. At all our campuses, there are also plenty of vending points providing snacks on the go.

Get off to a great start every morning! All Blackpool and The Fylde College students are entitled to a free healthy breakfast.

SPORTS FACILITIES AND COLLEGE TEAMS

Sports facilities are mainly based at the Bispham Campus where there is a sports hall, an all-weather floodlit sports pitch and a well-equipped gym. Our Fleetwood campus has sports facilities. We have numerous College teams, both men's and women's, with other available sports ranging from volleyball and five-a-side football to table tennis and canoeing. To find out more ask your progress tutor.

ENRICHMENT

Enrichment is about providing you with opportunities to bring your learning to life, developing your range of interests, meeting new friends and growing as a person. Some activities will be related to your area of study whilst others may not be directly linked. More information is available in your Partners for Success Guide; via the Students' Union and through your progress tutor.

Curriculum-based activities

Whilst studying your chosen subject at College, you will have the chance to see how your subject works in real life and apply that insight to your studies. We also aim, during your programme of study, to develop your employability skills and interview techniques. To provide this valuable enrichment, your programme may feature such activities as guest speakers, trips into industry and overseas visits, 'real life' assignments, competitions, work experience and work placements (some of which can lead to permanent positions).

Extra-curricular activities

College is also as much about the social side as it is about learning. At Blackpool and The Fylde College we offer a vast range of activities, from discounted theatre trips to lunchtime sports activities and book club. Activities are free to everyone enrolled on a course and in most cases, there's no need to book. For more information about what's on check your Partners for Success Guide; visit the Students' Union website or speak to your progress tutor.

Fee-based activities

For those of you who wish to engage in a further range of activities there are fee-based sports activities.

The Enrichment Team can also organise one-off fitness activities, such as trips to Manchester's Chill Factor for skiing or outings to Grizedale Forest for mountain biking. For more information please visit the Students' Union website or contact the Enrichment Team on 01253 504134.

GETTING INVOLVED IN THE QUALITY OF YOUR PROGRAMME

At Blackpool and the Fylde College we believe that you are a member of our higher education and College community and as such your views and experiences are extremely important to us. We want to work in partnership with you to ensure that your experience is the best that it can be both for you and others who study with you. To this end we work hard to engage all students in dialogue about the quality of their learning experiences. You can engage by providing useful feedback on your experiences of modules through Module Evaluation Questionnaires, through being an elected course

representative attending student forums and college meetings and through surveys such as the Post-induction survey and the National Student Survey (NSS).

The MEQ (Module Evaluation Questionnaire) surveys give students a chance to put their views across relating to modules and progress meetings during the academic year. You will be asked to rate questions around various themes such as Teaching and Learning, Assessment and Feedback, Organisation, Resources and Facilities, Student Voice and Overall Satisfaction, as well as to make individual comments if you wish. We can use what the results tell us that you like, or don't like, to make changes and improvements to our HE programmes, as well as look at how we compare with other similar colleges.

ACADEMIC APPEALS

An academic appeal is a procedure which allows you in certain circumstances to ask for a review of a decision relating to your academic progress or award. You can ask for a review of a decision by one of the following:

- A Board of Examiners, both Module and Programme Boards.
- A Personal Mitigating Circumstances Panel
- An application to the College
- An Academic Malpractice Panel

It should be noted that students may only appeal against a decision if they can show that they satisfy one or more of the grounds detailed in the academic regulations. The appeal process cannot be used to challenge academic judgement or appeal simply because you disagree with the marks you have been given.

An academic appeal is different from a complaint so appeals and complaints are looked at under different procedures. A complaint is dissatisfaction about the provision of a programme or academic service or facility or any other service provided by the College.

Students studying either a:

- **Blackpool & The Fylde College Programme**
- **Lancaster University Validated Programme**
- **Liverpool John Moores Validated Programme**
- **Scottish Qualifications Authority Programme (SQA Higher National)**
- **BTECHigher National Programme**

To lodge an academic appeal, you must do so by submitting your appeal within 10 working days of the publication of your results or decision of a panel either by writing to the HE Academic Registrar, Bennett Avenue, Blackpool, Lancashire, United Kingdom, FY1 4ES or by email to: appeals@blackpool.ac.uk

The Academic Appeals regulations and application pro-forma can be found on The Blackpool & The Fylde College website <https://www.blackpool.ac.uk/he-regulations>

COMPLIMENTS, COMPLAINTS AND FEEDBACK

Blackpool and the Fylde College welcomes feedback from all its students and is committed to improving the quality of the services it provides; we are committed to openness and transparency by providing well publicised and accessible information on how to give feedback or make a complaint.

Compliments, complaints and feedback will be dealt with courteously, fairly and objectively.

We hope that you will never have cause to do so but if you wish to raise a complaint (or you wish to compliment us or provide feedback) please take a look at our Compliments, Complaints and Feedback Procedure which is located on our website here: <https://www.blackpool.ac.uk/college-policies>

GRADUATION

Our annual higher education awards event is a spectacular occasion, representing the culmination of masses of dedication and hard work, and the gateway to an exciting and rewarding future. The graduation ceremonies will take place at the Winter Gardens and Opera House, 97 Church Street, Blackpool, Lancashire, England FY1 1HL.

Your graduation day may seem a long way off now, but you will be there quicker than you think! Blackpool and the Fylde College's Awards Ceremonies are a part of the celebration of your achievement and we hope you will be able to attend. You will need to budget for the cost of guest tickets, academic dress and photography. Awards Ceremonies are held each year at the Winter Gardens. If you attend the Awards Ceremonies we publish the names and awards of all graduates in the Awards Ceremony booklet and in a graduation supplement in the local press. If you do not wish your name to appear, you must contact Student Administration to inform us. We will print the name we have recorded for you on your degree certificate, so it's important that you tell us in advance of any spelling or other changes. After we have printed the certificate we will not be able to change it for you.

This is a very special day for all our graduates and their friends and families and is a marvellous opportunity to share and celebrate your academic achievement and accomplishments.

MODULE OUTLINES

The following module outlines provide you with a brief overview of the modules and their contents, together with the intended learning outcomes.

B4SCSOE-GD: Introduction to Academic Study Level 4 - Mandatory

Module Abstract

This module aims to give you specific knowledge, skills and understanding required for successful higher education study and engagement with industries related to computing, science or engineering. It will draw explicit attention to the introduction and/ or development of such skills; encourage you to consider your approaches to learning and enable opportunities for discussing multiple perspectives of your subject and wider related issues.

You will become familiar with analysing data sets and examples of practice to produce graphical representations of data. You will develop the strategies and understanding needed to find, interpret and evaluate academic sources, examples of practice and statistical data in order to compare approaches to your subject and form new ideas.

The module will provide opportunities to communicate your developing knowledge and practical application of mathematical constructs both formally and informally, requiring you to express your ideas verbally, graphically, in writing and digitally. Reflection on such communications will involve identifying personal attitudes and skills levels and establishing potential ways to enhance skills needed for the remainder of the course and beyond.

A key focus of the module is the importance of academic practice when communicating your interpretations of subject specific material. Formative and summative activities will provide you with a sound basis for expressing ideas, solving problems and analysing perspectives related to industry in a style and format appropriate for higher education. This will include structuring a written piece of coursework, adhering to standards such as word count, evaluating secondary sources and referencing accurately.

Learning Outcomes

- 1 Find, interpret and evaluate a range of digital and traditional sources to produce written communication that meets academic expectations of higher education.
- 2 Reflect on personal attitudes and skill levels and identify further learning needs to support future studies and enhance transferable skills for employment.
- 3 Analyse data sets to produce graphical representations of data OR analyse a case study to identify and discuss theoretical perspectives, models and research.
- 4 Produce verbal presentations appropriate to audience and level of complexity.

Indicative Content

Academic Writing

- Conventions
- Terminology
- Paraphrasing
- Summarising
- Reports / Essays
- Referencing
- Academic integrity

Ethical Research and Practice

- Confidentiality, anonymity, secure storage, vulnerable participants, netiquette

Secondary Research

- Use of digital and traditional tools for discovery; open access journals
- Referencing and in text citation, plagiarism, reliability and validity of sources
- Comparison, contrast and critical evaluation
- Critical reading and note making

Data Collection

- Working with raw datasets, cleaning and processing
- Spreadsheet tools

Data Analysis

- Statistical analysis Mean, median, mode, standard deviation, correlation
- Accuracy, precision, error and uncertainty
- Reporting data (graphical methods, tabular grouped vs ungrouped etc.)
- Interpreting data (confidence intervals and p values)

Reflective Practice and Writing

- Models of reflection

Critical Reflections

- Academic formality voice / academic, personal and professional

Presentations

- Selection of relevant points
- Communication of ideas verbally / visually

SOE401: Introduction to Programming Level 4 - Mandatory

Module Abstract

This module focuses on the fundamentals of programming beginning from a procedural perspective using a high-level language (C++). Key concepts of variables, conditional statements, iteration / loops, functions and arrays will be introduced and applied in a range of scenarios. This will provide a basis for all programming modules on the programme and instil good practices in writing maintainable code. Design, testing and debugging will also be explored and practiced so that robust applications can be developed.

As well as exploring concepts in a high-level language, key architectural concepts will be explored through use of a low-level language (assembly) so that how languages make use of the underlying architecture is understood.

Learning Outcomes

- 1 Design and develop an application to meet a client brief using a high-level language, producing appropriate documentation
- 2 Implement procedural programming concepts; use of modularisation and control structures, demonstrating good practice in producing maintainable code
- 3 Describe basic debugging and testing methods, explaining their importance, and apply them to testing an application
- 4 Investigate the compilation process; the role of compilers, linkers, language features and code generation
- 5 Utilise low-level code to perform simple operations on processor architecture
- 6 Evaluate process and scheduling algorithms and discuss memory and memory management systems
- 7 Discuss low-level and high-level coding experience with consideration of execution models

Indicative Content

Program design:

- Pseudo-code, flow charts, functions catalogues
- Test plans, interface sketches

Procedural Programming:

- Variables, arithmetic operators, Boolean operators / logic, conditional statements, loops / iterative statements, functions (passing values / function types), multi-dimensional arrays
- Comments, indentation, naming / consistency / style
- C++: string operations, cin / cout, types, libraries (STD)

Testing and debugging:

- White box / black box testing
- Breakpoints, step through, compiler errors, runtime errors, debug running
- Logging, evidencing, fixing

Compilation:

- Role of compilers, linkers
- Language features, code generation
- Native vs. Managed Code

Low-level code:

- Assembly, processor architecture, data / operations / Fetch Execute Cycle
- Process and scheduling algorithms / OS operations
- Memory / memory management
- Execution models

Module Abstract

To prepare students for programming challenges in either the application development or games development industries, networks are likely to feature heavily in their work whether for coding web services or online multiplayer games.

This module introduces the architecture, structure, functions, components and models of the Internet and other computer networks. It uses the OSI and TCP/IP layered models to examine the nature and roles of protocols and services at the application, network, data link and physical layers. The principles and structure of IP addressing are also explored within this module.

Then, utilising programming techniques, sockets will be explored and small client / server applications will be built with the ability to pass messages between each other. This will then be built upon to perform IP addressing calculations, which will aid in exploring networking concepts in more practical depth and also arithmetic operators and input / output handling.

Learning Outcomes

- 1 Investigate and describe the role that communication networks have in a modern global network architecture, identifying constituent components, and considering social and economic impact
- 2 Describe common models for network communications
- 3 Investigate the OSI seven layer model and analyse the role of layers within network communications and how protocols relate to this
- 4 Perform calculations relating to network addressing utilising decimal, binary and hexadecimal representations
- 5 Compare and contrast blocking (synchronous) and non-blocking (asynchronous) sockets
- 6 Apply networking concepts utilising sockets and message passing in the development of a client / server application

Indicative Content

Network architectures - Peer-to-peer, client-server

Network structure - End devices, network media, network types, network topologies

Function of protocols in network communication o IPv4 vs IPv6

OSI Seven Layer Model

TCP/IP model

Application, Transport and Network layers - Protocols (e.g. UDP vs. TCP), specific considerations

Addressing and naming schemes

Perform network addressing calculations for IP addressing - Network, host, broadcast, subnet masking

Sockets - Blocking, non-blocking, asynchronous

Creating sockets in code - Libraries (winsock), parameters, testing, threading

SOE403: Database Concepts and Programming
Level 4 - Mandatory

Module Abstract

The design of this module is in the practical exploitation of the features of SQL in a manner that is implementation neutral and portable across web and application platforms.

This approach will provide students with a toolkit of techniques to design, constrain, control and interface with SQL platforms in order to produce important (and marketable) skills of data store design, connectivity, and access to potential customers for commercial exploitation of electronic sales platforms.

The skills learned earlier in the course will be extended and developed in a demanding and complex practical exercises and techniques, and significant extension of debugging and testing techniques to ensure reliability.

This blend of skills will require the synthesis of programming skills with newly acquired data design and manipulation skills. In addition to these practical skills there are allied, and challenging academic content including professional standards of planning, and the evaluation of both design / process and product will develop students to be prepared for more advanced programming and web manipulation at higher levels of the programme, as well as having a direct commercial relevance.

Learning Outcomes

- 1 Design a relational database to a given scenario, creating full documentation, justifying compliance to 3NF and avoidance of anomalies
- 2 Investigate security concerns related to storing of user's details, including legal issues, and how these could be addressed through basic security mechanisms
- 3 Implement a relational database design in a suitable relational DBMS and create custom code to interface with it, allowing for CRUD operations to be performed with testing logged
- 4 Implement reporting features using SQL functions and features; joins, 'like' operators, date and time functions with testing logged
- 5 Discuss relational database creation and testing, relate to the wider context, comparative DBMS approaches and where ACID principles would appropriately be applied
- 6 Create well-formed XML, validate with a schema and transform into a specified output format
- 7 Explain document format modelling, comparing and contrasting document data formats evaluating their usefulness in different contexts

Indicative Content

Relational database modelling:

- Update, Delete, Insert Anomalies
- Entities / attributes / relationships (optionality / cardinality) / keys / normalisation
- Data types, length

Security concerns:

- Data Protection / economic impact of data breach
- Hacks / rainbow tables
- Authentication / permissions
- Password hashing, salting

Implementing relational databases:

- MySQL / phpMyAdmin
- Data Definition / Data Manipulation with SQL

Interfacing with relational databases:

- C#.NET / Winforms/WPF, MySQL libraries, connection strings
- C# data structures for CRUD operations
- Event driven programming / event handling / OOP

SQL Operations:

- NOW(), LIKE, wildcards, aliasing, concatenation
- JOINS (left, right, inner), enforcing relationships

Transactions:

- ACID principles, concurrency, scalability, recovery
- Avoidance of dirty reads / lost updates, deadlock, livelock

Alternative database solutions:

- Document Databases, NoSQL

Document formats:

- XML / XSD / XSLT, well-formedness, validity
- JSON
- Benefits / limitations / utilisation

SOE411: Maths and Physics for Gameplay Level 4 - Mandatory

Module Abstract

Before we can delve too deeply into the technical elements of 3D graphics and animation, we need to have a fundamental understanding of the principles of the dynamics we are attempting to replicate. Movement is rarely entirely linear; real life object interaction normally involves acceleration/deceleration, dampening of projectile curves and related principals. This unit is designed to introduce students to the mathematics behind the movements we manipulate in a 3D graphics environment.

The aim of the module is to introduce students to the application of physics and maths in game design and to develop the students' maths skills and awareness of 2D / 3D geometry, transformations. Vector-based mathematics is used extensively in game mechanics and lighting whereas matrices are used for transformation of vertices in rendering 3D scenes efficiently; both are explored in this module. Newtonian physics, including velocity and gravity, will be used to model steering behaviours (for AI) and trajectories (for projectiles). Randomness and probability will be investigated as well as non-linear growth systems, which have application in a range of game mechanics, particularly in RPG genres. Statistical analysis will also be explored so that data sets can be analysed and game balancing decisions can be supported.

Learning Outcomes

- 1 Calculate vector operations in Cartesian co-ordinate systems to define game mechanics, use of dot product, cross product, length / distance and normalisation
- 2 Model mechanics with Newtonian physics, projectile trajectories and steering behaviours applying trigonometrical functions as appropriate
- 3 Apply transformation matrices, based on Roll Pitch Yaw rotation, to bone structures in a skeletal hierarchy to solve forward kinematics problems
- 4 Solve quadratic equations and graph line equations, demonstrations of trajectories and constructions of linear and non-linear character levelling systems
- 5 Perform calculations including randomness, probability and averages to model game mechanics
- 6 Critically analyse different data sets to validate game design decisions by statistical analysis

Indicative Content

Vector operations:

- Cartesian co-ordinates, length (trigonometry / Pythagoras), normal / unit vectors, dot product, cross product

Modelling game mechanics:

- Trajectories / parabola: SUVAT equations, gravity, velocity (general Newtonian physics), plotting trajectories
- Steering behaviours: seek, flee, pursue, interpose, flock

2D / 3D transformation:

- Matrices, identity matrix, matrix multiplication / concatenation, matrix transpose
- Translate, Scale, Rotation Matrices (Euler Angles: Roll Pitch Yaw)
- World, view, projection matrices

Skeletal hierarchies:

- Forward / Inverse kinematics

Graphing and solving line equations:

- Quadratics / solving quadratic equations, exponents, logarithmic scales, linear vs. non-linear scales

Randomness / Probability / Statistical Analysis:

- Mean, median, mode
- Standard deviations, correlations
- Modelling operations with random elements / probability modelling / balancing
- Analysing data / trends / anomalies

SOE412: 2D Games Programming Level 4 - Mandatory

Module Abstract

With the proliferation of mobile devices and the resurgence of indie gaming, 2D Games have become a standard fixture in the videogames market, some using a retro aesthetic whereas others take advantage of the latest graphics fidelity. The underlying mechanical concepts however share many similarities and this module focuses on implementing a set of core gameplay mechanics and rendering features using custom code interfacing with API (application programming interface) features.

Initially the module will explore rendering APIs and their development in a historical context, assessing why they are around today and the benefits they provide programmers as well as their individual features and suitability for different developments. From here, the development of a custom engine begins in industry relevant languages (C++ / DirectX) to set up the gaming window, interface with input devices and render to the screen. From here, students will develop a 2D demo, utilising object management techniques, implementing AI, collision detection, scoring and other mechanics. Debugging and testing will be emphasised with examination of industry standard practices.

Learning Outcomes

- 1 Compare and contrast the differences in audio / visual APIs and discuss with examples the historical context of their development in relation to games hardware
- 2 Demonstrate effective use of object-oriented programming in industry-appropriate language, incorporating and utilising libraries and APIs appropriately in game code
- 3 Programmatically control sprite animation and scrolling scenery in a 2D game
- 4 Manage objects using standard data structures, apply sorting methods and utilise state machines in a 2D game

- 5 Create code which handles player input and produces audio / visual output using APIs appropriately
- 6 Add objects with simple autonomous AI such as enemies or NPCs applying vector calculations / matrix transformations
- 7 Apply debugging and testing techniques to completed game demo, reflecting upon the IDE features and methods used

Indicative Content

Graphics rendering hardware and APIs:

- Historical context: multiple graphics cards, multiple standards
- Development of standards and HAL (3DFX / DirectX / OpenGL)
- GPU development and sophistication / on-board rendering efficiencies / floating-point operations
- DirectX 11 / 12, OpenGL / Vulkan
- Cross-platform support, low / high level coding, performance and maturity

OOP Concepts and Library Usage:

- Encapsulation, inheritance, polymorphism
- C++: Pointers, addressing, constructors / destructors and memory management
- C++ STL: vectors, lists, maps, iterators
- Direct3D / DirectInput / XInput / DirectSound
- Swap chains, back buffers, shader compilation, vertex / index buffers, sound layers, device polling

Sprite animation / scenery:

- Texture mapping, frame counts / animation timers, textures in memory, optimisation
- Transformations / Z order, wrapping, parallax
- Sprite fonts

Managing objects:

- STL vectors, state machines (state enumerations / transitions), sorting (algorithms / efficiency)

Input / audio handling:

- DirectSound: sound layers, sound objects, wave parsing, playback
- DirectInput: Device polling, keypress / key release, mouse deltas
- XInput: button mapping, analogue control / dead zones, vibrators

Basic AI:

- Steering behaviours: seek, flee, pursue
- AABB Collision detection / state machines
- Distance calculations / dot product (behind / in-front)

Testing and debugging:

- Breakpoints, step-through / live view of variables, intellisense, debug logs, call stack
- Test conditions, inputs, expected outputs, bug severity ratings, evidences / fixes

BFC501-I: Work Based and Placement Learning **Level 5 - Mandatory**

Module Abstract

This module will provide you with the opportunity to undertake a period of work based learning under the direction of an employer and an academic supervisor enabling you to learn and develop in a working environment. The module will provide you with opportunities to develop an understanding of the key factors associated with working in industry and provide a framework for you to evidence key transferable skills gained in the work setting. During your work based learning experience you will be expected to undertake a task or project negotiated between you, your tutor and the employer and set in the context of work and industry. Throughout your work based learning experience you will be

expected to actively and critically reflect on the range of different processes engaged in for both productive work tasks and the completion of your project/task. It is also vitally important for you to work on integrating your knowledge from a theoretical perspective into a pragmatic work based context, this will support your critical analysis and reflections and help you to review, evaluate and make decisions based on the integration of theory and practice. Critical reflection is essential for the achievement of the outcomes in this module and a substantial part of the assessment requires you to critically reflect, evaluate and make recommendations for action, a key skill in graduate employment. To conclude this module you will be expected to design and deliver a presentation which reflects the processes and outcomes of your work based project and will be delivered to a selected audience. This presentation activity will help you develop and evidence your research, communication and organization skills and provides an interactive and fitting conclusion to your work in this module.

This module aims to draw together both your academic and practical development and prepares you for the nature and scope of the demands future graduate employment will make of you. It is an opportunity to combine practical experience with theory and has the potential to support your learning in all other modules on your programme.

Learning Outcomes

- 1 Negotiate and undertake a work based project/task
- 2 Critically evaluate the process and work undertaken
- 3 Integrate theory and practice when proposing solutions and evaluating outcomes in work based settings.
- 4 Present the outcomes of the project to selected audiences.
- 5 Critically reflect and make recommendations to improve both personal and professional practice.

Indicative Content

Principles of Work Based Learning and negotiated projects

Identification of appropriate work based task/project and agreement from employer and tutor

The work based learning contract – roles and responsibilities

Project methodologies and tasks

Project management

Work based competencies

Reflective Practice

Integrating theory and practice

Subject specific sessions will be provided to contextualise the generic WBL content

SOE501: Software Engineering and Technical Design Documentation
Level 5 - Mandatory

Module Abstract

Software Engineering is the core of any successful development project, be this games, apps, information systems and much more. Sometimes developments are small in scale, sometimes they are enterprise level, and sometimes teams will be split internationally. Considering the sheer variation and scale in contexts and working practices. documentation. methodologies and management techniques

have evolved and are applied in order for projects to be successful. This module therefore focuses on core software engineering and technical design documentation concepts and techniques to ensure students are prepared for the range of projects on which they may eventually be working.

Initially there will be investigation of existing case studies, methodologies and project management techniques. Following this there will be the application of systems analysis, project management and documentation techniques to a scenario focused on the programme specialism. There will also be a case study based exam applying these concepts in a different context.

Learning Outcomes

- 1 Evaluate the features of a range of software development lifecycle models and methodologies, considering legal, social and ethical issues in systems development
- 2 Perform a system investigation using a suitable methodology to produce designs using tools and techniques appropriate to the type of software being developed
- 3 Compare and contrast a range of Technical Design Documents, investigating their structure and purpose plus the processes involved in their creation
- 4 Create a range of structured diagrams to represent objects and functions such as decision trees, class diagrams and flow charts as part of a full Technical Design to a brief
- 5 Employ project management techniques to identify and estimate timescales, resource requirements, health and safety, and project risks
- 6 Identify and diagram critical technical elements and secondary technical elements with justification in relation to project goals
- 7 Describe and assign suitable roles and responsibilities of a team for a particular development project (app / game) based upon industry conventions in a range of contexts

Indicative Content

Software Development methodologies:

- SDLC, waterfall vs. spiral, SSADM, RAD, Agile, PXP
- Legal, social, ethical issues: crunch, gender representation, IP
- Agile practices: Scrum, Sprints, Product Owners, Burndown

Systems Analysis:

- Requirements gathering, physical and digital processes, conceptual and logical modelling

Technical Design Documentation:

- Documentation structures, GGD vs. TDD, CASE tools, reference documents
- Finite State machines, Entity Relationship Diagrams, Class Diagrams, Decision Trees, Flow Charts, Sequence Diagrams, Interfaces (wireframes / mock-ups / storyboarding), assets catalogues

Project Management Techniques:

- Time, Cost, Quality
- Planning, Milestones, Product Catalogues, Burndown Charts, time estimation
- Risk management, Change management
- Team formation, management, group dynamics / Critical tasks vs. secondary tasks, CPA

Roles and responsibilities:

- Cross-disciplinary teams, designers, developers, artists, UI, AI
- Producer, Product Manager, Project Manager
- Existing best practice

**SOE511: 3D Games Programming
Level 5 - Mandatory**

Module Abstract

Modern PCs and Consoles have long pushed the boundaries in visual spectacle and immersion in virtual worlds, harnessing the latest technologies to entice players to experience new entertainment. A large majority of games utilize 3D programming techniques to achieve this and this is what this module will explore and practice in depth.

Indeed, working in a 3D environment comes with its new layers of complexity absent from the creation of 2D games and a new way of performing calculations in a 3D space. This will be initially explored before coded examples are then introduced and customized for various gaming purposes. Then of course there are planning techniques to be performed before starting development – this to eliminate any problems in implementation that may slow down the production of a game project.

The bulk of the module will be building up the skills to program a game to at least a demo standard. This will include utilizing APIs for rendering real-time 3D geometry and optimization of code to harness the power of the technology. Cameras, lighting and materials will be programmatically controlled and implemented. Collision detection, picking and ray-casting, vertex and pixel shaders will all be explored, implemented and customized.

The complexity of all this is considered in the credit value of the module, the assessment strategy and delivery over the year with a focus on building up and honing these techniques, influence from other modules can be incorporated, and a complete individual small-scale 3D game development project can be completed.

To round up, testing methods and documentation along with an analysis and evaluation of techniques undertaken will be performed so that difficulties experienced can be worked on in the future and the 3D programming skills which the industry are seeking can be built upon and refined in the future.

Learning Outcomes

- 1 Plan a simple 3D game, performing a range of calculations related to 3D space, movement physics, simulation and dynamics, and AI behaviours
- 2 Store a scene in code utilizing vertex buffers, index buffers, primitives and skeletons, and render scenes efficiently in a simple 3D game with use of vertex shaders and pixel shaders
- 3 Implement transformations, cameras, lighting, normals and materials in a simple 3D game
- 4 Incorporate collision detection into a simple 3D game, including bounding volume broad phases and picking / ray casting / line intersections
- 5 Produce a prototype applying a mixture of 2D and 3D techniques, particle systems and other visual effects in a simple 3D game
- 6 Analyse debugging and industry testing methods, including bug tracking systems, applying them fully to a completed prototype, providing usable builds suitably for review
- 7 Evaluate the techniques used in the production of a simple 3D game, identifying key software architecture features of a video game, discussing alternative implementations

Indicative Content

3D Game design:

- Flow Charts, Class Diagrams, UI (wireframes, mock-ups / storyboarding), floor plans
- Steering behaviours, projectile / movement mechanics, FSM
- Growth systems, power ups, objectives

DirectX 11 setup:

- Device and Swap Chain, backbuffer, vertex / index buffers, shader pipeline, shader compilation, static / dynamic buffers

- Depth stencilling, render targets
- Resources / sub-resources

3D support classes:

- Cameras (world, view, projection), lighting (HLSL, bump-mapping, specular highlights, normals, materials)
- Meshes, hierarchical meshes / recursive hierarchies / matrix concatenation, animation controllers / interpolation

Entity management:

- Events / dependencies, state machines, collision detection and response (broad phase, AABB, spherical, swept)
- Ray casting / picking / line intersections / plane intersections
- Entity updating, removal, global entity management

2D / 3D effects:

- UI, particle systems, sprite fonts, texture animation

Testing / debugging:

- Bug tracking systems, severity rankings, logging techniques, performance monitoring
- Debugging: step-through, call stack, output logs, on-screen output
- Debug vs. Release builds, installers, compression

3D Development approaches:

- Bespoke vs. licensed engine development; time, cost, support, ownership, flexibility
- Software Architecture features: event-driven, MVC
- Alternative approaches

SOE512: Games Engines and Modification

Level 5 - Mandatory

Module Abstract

Licensed engine development provides many benefits for game developers including providing a middleware framework for cross-platform development and enabling rapid iterative development saving costs and time in developing in-house game engines. These technologies have evolved to provide very sophisticated tools and interfaces which cater for indie developers and larger AAA developers. These tools have also built from the tradition of modding, whereby enthusiastic modders have entered the industry based upon their customisations of existing games. It is notable that more of the larger developers, including internationally are using licensed engines more as the cost and development time benefits have become clearer.

This module initially involves developing a small prototype in multiple licensed engines as a means to reflect upon their different approaches. Following this, groups will be formed to tackle a cross-platform development as part of a development team. This will be conducted to an industry standard methodology (e.g. Agile practices) to provide experience of managing software developments and team dynamics in a manner relevant to contemporary development. The project will draw upon interdisciplinary skills and tools will be specified that enable common gameplay features to be developed cross-platform (e.g. Unreal Engine 4). Development teams will eventually build to demonstrating their apps to the public and reflecting upon their development experiences.

Learning Outcomes

- 1 Build small prototype games between two contemporary game engines and reflect upon their different features, engine-specific scripting languages, code / extension support
- 2 Evaluate current game engines / middleware, their place in industry, platform support and prominent modifications / commercial games utilizing them

- 3 Analyse current and emerging games hardware / platforms, evolving peripheral devices and the role that game engines / middleware have in relation to these technologies
- 4 Identify and describe Producers and Designer roles in the games industry, discussing the relationship between them, and the impact on team formation
- 5 Develop a game demo / modification by working as part of a multidisciplinary development team to an industry-standard methodology applying suitable project management techniques
- 6 Produce accompanying Game Design and Technical Design documents for collaborative game demos, justifying platform choices, reflecting on individual contributions to the project
- 7 Implement custom assets, artificial intelligence, graphical effects and physics / simulations in completed demo, and communicate to audiences

Indicative Content

Licensed engines / middleware:

- Unreal Engine, Unity, Crysis, Source
- Control vs. usability, speed vs. ownership

Game platforms:

- Handheld / home console, OS versions, peripherals / interface features / mixed reality (AR/VR), engine support
- Market share / trends
- Commonalities, differences

Roles and responsibilities:

- Product Managers, Designers, Developers
- Cross-disciplinary teams / team formation

Agile working practices:

- Scrum, sprints, burndown charts, time boxing
- Group dynamics, cross-disciplinary teams, tracking / management
- Iterative development

Development:

- Pitching / 'green light' process
- UI, mechanics, blueprints, shader effects, AI, collision detection/response, scripted events, game modes, objectives
- Cross-platform testing, debugging
- Asset creation, importing, use

Visual / Technical designs:

- UI, Flow Charts, State Machines, assets catalogue

Demonstration:

- Multi-device, video recording, emulation

SOE513: 3D Rigging and Animation **Level 5 - Mandatory**

Module Abstract

Games developers are often working with 3D assets and manipulating them in code to program and tune game mechanics, update logic including physics and animation, and working with shaders to render graphics to the screen. In a development team, developers would have to work closely with 3D modellers, riggers, animators, texturers and other disciplines as part of the asset creation pipeline. Therefore an understanding of what this involves is paramount and the ability to apply fundamental skills in 3D modelling, rigging and animation enables developers to create their own unique portfolio

work to showcase their developments.

This module will therefore include initial investigation of key concepts, tools and packages that are used by 3D professionals. This will include modelling characters, environments; applying textures, materials and lighting; creating skeletal structures; and creating animations. Following this, students will be required to create assets, characters and animations to specifications in industry standard tools and export in formats suitable for inclusion in games. Reflecting upon this experience, students will then use this as a reference point for investigating the asset creation pipeline in industry.

Learning Outcomes

- 1 Construct a real-time game-ready character and environment, exporting models in formats suitable for use in game engines
- 2 Generate animation that illustrates self-created assets utilizing rigging, exporting in a format suitable for use in game engines
- 3 Produce a video of completed animation that includes commentary of techniques applied and evaluation of completed work
- 4 Identify and describe the key aspects of an asset creation pipeline and the implications this has for modellers / animators
- 5 Compare and contrast the use of 3D modelling / animation software in industry
- 6 Compare and contrast spline and box modelling, and sculpting techniques
- 7 Analyse materials and mapping techniques with consideration of their utility in games

Indicative Content

3D modelling and animation software:

- 3ds Max, Maya, Z-Brush, Adobe Fuse, Cinema 4D

3D modelling techniques:

- Spline modelling, box modelling, Sculpture modelling
- Texture mapping: UV unwrapping, materials (bump mapping, specular highlights, normals) , Material Painting
- Lighting (omni, spot, point, shadows, ambient, intensity, direction, diffuse)

3D rigging and animation:

- CAT Rigging, Bone structures / IK chains, weight painting
- Key frames, motion capture data, animation files / interpolation, physics
- Export formats: model data, textures, animation data
- Video creation, rendering techniques / settings, filters (AA)

Asset creation pipeline:

- Roles, responsibilities, cross-disciplinary communication
- Formats, tools, design to implementation process

CMP601: Dissertation Level 6 - Mandatory

Module Abstract

The aim of the dissertation is to provide students with an opportunity to pursue an in-depth project related to their programme with a focus on both secondary research and primary application. This is where the underpinning knowledge, practical skills and higher-level cognitive abilities developed over the course of programme are combined as students pursue an area of interest in an independent fashion with limited supervision.

All computing dissertation students are to undertake a suitable complex development / implementation and documentary evidence is required including analysis, design, testing, and data collection; this will be based upon independent secondary research that supports the goals of the project and any reasonable expectations of hypotheses / research questions in the problem domain.

The choice of topic is to be agreed with the academic team to ensure that it is valid within the context of the programme and contains sufficient challenge without being unfeasible in scope. This will be determined through a Project Proposal and Ethical Approval phase in line with the college's Ethical Approval procedure. This will include an outline of the primary development / research to be undertaken; where human participants are involved (for example in user testing) then appropriate safeguards are to be approved before any work can continue.

From here, a suitably extensive literature review is to be conducted into the main themes of the topic chosen to ensure that the development / implementation to be undertaken is feasible, sufficiently complex, will confirm / add to the academic body of knowledge, and that wider implications of the development / implementation are considered. Following this, a description of the problem domain (including any hypotheses / research questions) will be produced to then lead into a detailed Methodology considerate of validity and reliability. The findings / results analysis will analyse the outcome of the activity leading to conclusions and recommendations.

This will then be presented in the form of an academic poster presentation with demonstrations of work undertaken where appropriate and feasible to do so.

Learning Outcomes

- 1 Conduct secondary research, evaluating classic and contemporary literature and work of others
- 2 Identify an area of research and development and formulate a research proposal incorporating ethical principles
- 3 Plan and carry out a programme of work with limited supervision producing an implementation or product supported by appropriate analysis, design, evidence of functionality and testing
- 4 Critically analyse and present results and findings obtained by use of the implementation or product
- 5 Communicate the nature, rationale and outcomes of the work to specific audiences
- 6 Critically reflect upon the dissertation process, critically evaluating the achievements and outcomes

Indicative Content

Ethical Research:

- "Do no harm", confidentiality, anonymity, secure storage, vulnerable participants, safeguards

Scoping Research and Development:

- Preparing proposals, ensuring relevant content investigated, ensuring feasibility within constraints (resources / time / expertise)

Project Planning and Self-management:

- Writing aims and objectives / SMART targets
- Work Breakdown structures and critical path
- Gantt Charts and risk analysis
- Logbooks / reflective blogs

Secondary Research and Literature Reviews:

- Referencing; reliability and validity of sources
- Cross-referencing for conflict / agreement from a range of sources

- Breadth vs. Depth
- Comparison, contrast and critical evaluation
- Developing and consolidating themes, writing conclusions

Description of Problem Domain:

- How to provide context for solution development
- Hypotheses and Research Questions

Methodology:

- Reliability / Validity
- Analysis methodologies, strengths, weaknesses and rationale
- Designs and specifications; standard forms, appropriateness
- Piloting / iterating / testing

Findings and Results Analysis:

- Suitable charts and tables for different data sets
- Mean, median, mode, standard deviation, correlation
- Codifying qualitative data
- Cross-referencing primary findings

Conclusions / Recommendations:

- Cohesiveness / comprehensiveness
- Suitability / academic voice

Critical Reflections:

- Scholarly voice / academic and personal

Presentations:

- Academic approach / selection of relevant points

CMP602: Human Computer Interaction Level 6 - Mandatory

Module Abstract

The importance of Human Computer Interaction (HCI) in guiding the design of front-end portals is becoming increasingly important to the success of the Internet business and organisations which wish to ensure easy and inviting access. HCI is also an important consideration in the design of handheld devices, games and embedded systems for controlling machinery. Models of interaction will be covered allowing students to apply popular theories and identify the many methods of interaction possible between human and machine via an interface. Analysis of this and exploration of the theories will allow informed choices to be made at the point of interface design allowing for intuitive control from a user's perspective.

Students will also look into improving the user experience and usability of an interface as well as other characteristics through a range of interface design choices and will be asked to justify and reflect upon the choices made at each stage of the design process. The various evaluation methods and their strengths and weaknesses will be explored to imbue students with a deeper understanding of how best to test an interface for wider public acceptance.

The module will be particularly concerned with gathering user requirements. These then can inform decisions made in conjunction with theories applied and effectiveness evaluated against this defined criteria. This module is an essential accompaniment to any development module where interaction is required and will enhance production of any software or device.

Learning Outcomes

- 1 Critically evaluate novel and evolving application design, considering also international and

- cultural aspects in localisation and their design implications
- 2 Critically analyse the need for user, environment and requirements clarification
 - 3 Design a product integrating Heuristic Principles/established evaluative frameworks using iterative design techniques and implementing user experience research
 - 4 Critically analyse the role of User-Centred Design in the design and use of user interfaces
 - 5 Appraise HCI Principles within real-world and mixed-reality environments
 - 6 Critically evaluate the user experience of an interface

Indicative Content

Emerging technologies:

- Innovative interaction / input methods, development of interfaces (ribbon / metro, skeuomorphic vs. flat design), mixed-reality (Augmented Reality, Virtual Reality, Holographic interfaces)

Design principles:

- Heuristic frameworks / Golden Rules of Interface Design / MDA / Play
- Usability / learnability / level of user
- Metaphors / idioms / iconography
- Different devices / peripherals

Cognitive psychology:

- Short-term and long-term memory, recognitions vs. recall

UCD / UXD:

- User-centred and user experience design, best practices, user testing, persona / scenario creation

Real-world / mixed reality HCI:

- Ubiquitous embedded device interfaces, virtual reality interfaces, holographic interfaces

Iterative design techniques:

- Evaluation methods, observations, surveys, task analysis

CMP604: Entrepreneurial Management and Project Control Level 6 - Mandatory

Module Abstract

In creative industries there are many opportunities to enter the industry by freelance means, or indeed by setting up a new business. However, also in industry there will be tightly controlled projects. Whatever the outcome for graduates, they will need the skills to deal with either of the multiple possibilities they may be faced with.

This module will ensure that students have the knowledge and capabilities to set up their own small businesses and make a success out of these various outlets to increase their portfolios and enter the industry successfully through another route. This includes analysis of existing entrepreneurs and how they succeeded, discussion and evaluation of entrepreneurship theories and practices. There will be a significant focus on the processes involved in creating a business plan including how cash flow forecasts, risk management, and market research factor into presenting business plans for audiences who could potentially invest. Characteristics of the industry / sector that graduates may enter into are also explored in depth and in the context of global markets.

Learning Outcomes

- 1 Critically analyse theories and origins of entrepreneurship, and the impact on businesses

- 2 Critically evaluate the role of entrepreneurship in facilitating human and behavioural issues underlying business creation and development
- 3 Critically analyse historic developments of business operations, emerging trends in economic relationships, and entrance into target industries
- 4 Create a comprehensive business plan suitable for obtaining investment addressing legal, financial and taxation concerns
- 5 Critically apply project management techniques to plan in accordance with industry production timelines from concept to post-release for the target sector
- 6 Critically evaluate the core elements of project management, relevant documentation, project team structures and methodologies
- 7 Critically analyse the legal requirements, regulatory bodies and processes involved in shipping a product / providing a service in a target industry, in international contexts

Indicative Content

Entrepreneurship:

- Theories, impact on markets, facilitating human / behavioural issues underlying business creation, successful entrepreneurship, case studies

Historical contexts / emerging trends:

- Supply chains / stakeholder relationships, governance / funding / contracts
- Barriers to market entry, industry entry routes, SMEs, indie development, freelance, start-ups, networking, sector specific events
- Operating procedures / processes
- Market trends, domestic / international markets

Starting up a business:

- Business planning, market research, staffing / expertise, business services
- Funding / finance / grants, business support, networking
- Cash Flow forecasts, break even charts, income / expenditure, taxation / employer contributions (NI, Pensions, PAYE), interest
- Short, medium, long term planning
- Project management and legal

Risk management, Health and Safety, Data Protection

Insurance, Public Liability, Indemnity

Milestones, timescales, estimations

Social issues: local economy, jobs, localisation for international markets, working with international contractors, timezones / customs / politeness / professionalism

Professional: membership of professional bodies, trade groups

Regulatory bodies (BBFC / PEGI)

Project management methodologies:

- Prince2, APM, PMBOK, Scrum, Kanban
- Suitability for different project types
- Commonalities, differences
- Case studies
- Documentation, logging, tools

**SOE611: Advanced Games Programming
Level 6 - Mandatory**

Module Abstract

Programming games beings with it many challenges, particularly with performance testing, tuning and optimisation. There are also challenges with developing for multiple platforms including working with different APIs and development environments. In addition, games developers should be familiar with advanced shader effects and AI techniques. This module therefore tackles all of these aspects building upon the custom engine and demos developed in previous modules taking a portfolio approach, working with pre-created assets and scenes with particular optimisation tasks and advanced mechanics / rendering techniques being set as aspects to improve with reflection upon the strategies undertaken and evaluation of alternative approaches.

Another aspect of this module is developing on non-PC hardware, creating a small-scale demo which works in a different development environment and broadens students' skills. This will provide a reference point for reflecting upon the commonalities and differences in approaches, tools and techniques with investigation of how development for multiple platforms can be approached.

Learning Outcomes

- 1 Develop a prototype game demo on non-PC hardware, reflecting upon the differences in hardware, development tools (IDEs / SDKs) and deployment
- 2 Analyse games during runtime using performance analysis tools and improve performance through optimisation, including refactoring, language-specific, data structures
- 3 Critically evaluate optimisation and tuning methods, the range of techniques applied and investigate additional tuning to hardware / GPU optimisations that could improve performance
- 4 Implement artificial intelligence techniques, route solving and decision making based on interaction events making use of differentiation techniques for particular movements
- 5 Critically analyse how data and language constructs are compiled and how performance analysis tools interface with gaming hardware
- 6 Use advanced contemporary shader techniques making use of graphics hardware to show static, animated and simulation effects
- 7 Critically evaluate the build cycle in game development, how tools, utilities and scripting supports designers in the production process, and how the build process is managed effectively

Indicative Content

Performance monitoring / Optimisations:

- Amdahl's Law, Cache Coherence (contiguous memory / data locality), Copy Elision, sorting algorithms
- Algorithm comparison, asymptotic (Big O) notation
- SIMD / MIMD (Flynn's Taxonomy), scene trees / culling, cache misses, pre-fetching
- Refactoring, removing unnecessary branches, const, object pools
- CPU / GPU use, memory usage
- Tools / software, interface with hardware

Artificial Intelligence:

- Route solving / pathfinding (A*, Dijkstra's algorithm, breadth-first search)
- Decision making (rule-based expert systems, probabilities, fuzzy logic)

Movement mechanics:

- Differentiation, simulation

Compilation:

- Instructions and Data, lexemes / lexical analysis, tokens, patterns, symbols, dependencies, type checking, code generation

Shader techniques:

- HLSL, multi-pass, LOD shaders, cel-shading, water / fluid shaders, blur, fog, chromatic aberration, filtering / AA

Game development build cycle:

- Pre-alpha, alpha, beta (open beta), silver branch, gold branch, release
- Version control, source code management, repositories
- Tools, utilities, content pipelines, scripting

SOE612: Online Multiplayer Gaming Level 6 - Mandatory

Module Abstract

Originally most games were single player experiences but in recent years we have seen a definite shift in digital games design toward multiplayer online gaming. This is because games facilitating this can significantly increase their longevity in comparison to standalone games. In addition, games publishers can generate additional revenue by charging a subscription fee or for additional online content.

This module is designed to equip the student with the knowledge and skills needed to design multiplayer games or adapt single player games to support multiple players, introducing the student to the history, technology and psychology related to the design process. This will allow them to design and develop a multiplayer game fit for today's competitive marketplace.

Distributed programming concepts such as remote method calls, latency, jitter, fault tolerance, concurrency and synchronization will be integrated also to provide a basis for designing and applying code to handle this. The practical aspect of this module will ensure students demonstrate the ability to compensate for distributed issues in online gameplay, producing a simple game with proof-of-concept 'netcode.'

Learning Outcomes

- 1 Compare and contrast online gaming models and the various markets they serve
- 2 Critically analyse technical issues involved in online gaming, and the issues a data packet may encounter on its journey between source and destination
- 3 Critically evaluate security mechanisms that could be applied to protect online account details
- 4 Design an online game to a given specification, providing technical documentation specifying the system architecture
- 5 Create a networked multiplayer game, using remote persistent servers, applying multi-threading techniques
- 6 Create code which mitigates technical issues in a networked multiplayer game, critically evaluating methods of providing fault tolerance in online multiplayer games
- 7 Test and debug a networked multiplayer game applying industry techniques

Indicative Content

Online gaming models:

- Subscription, free-to-play / microtransactions / freemium
- Markets, pricing, features

Distributed Systems:

- Transparency, heterogeneity, concurrency
- Dependable systems / fault tolerance

- Data representation
- Synchronisation
- Latency / jitter / QoS

Security mechanisms:

- Hashing / salting
- Asymmetric cryptography
- Permissions

Design and development of online games:

- ERD, State Machines, Flow Charts, sequence diagrams, UI
- Client-server communication, sockets, mutual exclusion / thread management, data representation, message queues
- Fault tolerance, graceful degradation, online vs. offline operation

Fault tolerance:

- Hardware vs. software solutions
- Fault prevention, maintenance

Testing and debugging

ADDITIONAL COSTS

There may be opportunities for field trips to conferences, exhibitions or for other interests. This is done so through negotiation as new venues / locations / trips must be risk assessed and approved. There is often room in the budget to subsidise costs so discounted contributions can be made yet this will depend on many factors, including entry fees / travel.

EQUIPMENT REQUIREMENTS

There is no requirement for students to purchase equipment, as there are several resources on campus however it would be advantageous for you to purchase a computer as some of the software is demanding and you will be able to spend more time on work outside of campus hours.

Students looking to purchase hardware should consider that as a minimum it should be able to support the recommended specifications of the latest Unreal Engine version. Most mid-high range desktops / laptops are in the region of £400 - £1,000. However, it pays to shop around and speaking to some of our staff could help you in getting best value. Many students prefer to bring their own laptops into college and accessing the network through Wi-Fi to save them from transferring files and we encourage this, however this is a personal choice. Software is available to students from the College and there are many discounted subscriptions available, including student pricing for Adobe Creative Cloud.

When planning Dissertation projects, consideration must be given to what is available in Computing to assess feasibility. It might be the case that you wish to pursue emerging technologies that we do not have and so you may wish to undertake personal investment.

STUDENT PROTECTION PLAN

The B&FC [Student Protection Plan](https://www.blackpool.ac.uk/info-for-he-students) sets out the measures that we have put in place to protect you as a student in the unlikely situation where a risk to the continuation of your studies arises. Our plan has been approved by the Office for Students and is available on our website <https://www.blackpool.ac.uk/info-for-he-students>

