



Course Handbook
BSc (Hons) Computer Games Development
2020/21
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School of Physical Sciences & Computing



Please read this Handbook in conjunction with the University's Student Handbook.

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1. Welcome to the course

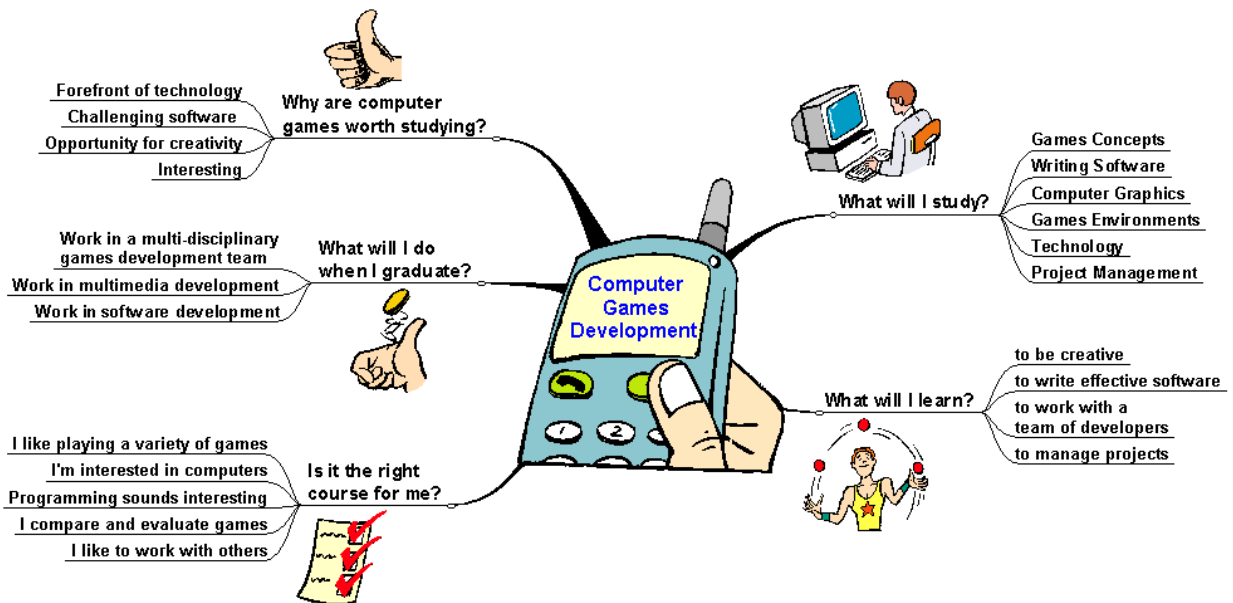
Welcome to the BSc (Hons) Computer Games Development, which is devoted to developing highly skilled computer games developers with the high level of software development skills required by the industry.

We hope you are looking forward to the challenges the coming year will bring, whether you are a direct entrant or proceeding with us from last year. If you are new, you may find joining a new course can be confusing at first, whether it is your first experience of Higher Education or you are joining the second or third year after having studied elsewhere. Other students may be more familiar with the University's facilities, the course regulations and the staff. There is much for you to find out, so don't be afraid to ask any member of staff or your fellow students.

The University offers many opportunities: not just to learn about computing, but also to engage in a wide range of social or sporting activities, to make new friends and to develop your personal skills, and to work in industry. You will have a great deal of independence, but with this comes responsibility. You must balance your use of time to get the most out of University while making sure that you obtain a qualification that reflects your abilities.

Pay particular attention to the way we expect you to work. This can be summarised simply: come to all classes, hand your work in on time, don't copy from other students, make sure that you properly reference material you find in published literature, and if you have a problem, **ask**.

The next few weeks may be a time of great change, but we hope you will settle down quickly and enjoy your time with us in the School.



1.1 Rationale, aims and learning outcomes of the course



What qualification does this award lead to?

On successful completion of the course, you will be awarded BSc (Hons) in Computer Games Development. The class of your award is calculated from the marks you achieve on the modules you take (See Classification of Awards, below).

If you leave early or fail to satisfy the criteria for an Honours award, you may be entitled to a lesser award, e.g. Certificate of Higher Education for completing the

equivalent of a full-time first year or Diploma of Higher Education for completing the equivalent of two years full-time.

Why study Computer Games Development?

Over the past twenty years, electronic games have become an increasingly popular form of entertainment and their development is a significant industry. Computer games development forms the basis of a challenging and valuable degree because:

- Games are among the most complex forms of software to create, potentially involving mathematics, programming techniques, algorithm design, multimedia programming, novel hardware and software environments, and complex testing.
- Game development is a complex collaborative activity. The practical problems of managing the development of a game come from the technical challenges of software development, the creative challenges of conceptual design, content creation, risk assessment, the business issues of developing a commercial product, and the variety of people involved.
- Games development provides a challenging but practicable opportunity for the exercise and evaluation of creativity.
- Games themselves are a fascinating and varied subject of study. The factors that make a game attractive include psychology, user interface design, aesthetics, narrative, audio and visual arts, and fashion.
- A computer game offers the opportunity to create a complex, original software product demonstrating creativity and complex programming skills.
- The course offers the opportunity for studying alongside enthusiastic colleagues who share common interests.

Overall, computer games development provides an intriguing and challenging opportunity for you to acquire and demonstrate the knowledge, skills and understanding expected of an Honours Graduate.

What is special about BSc (Hons) Computer Games Development?

The course discusses different genres of computer games to enhance your understanding of their appeal and to encourage creativity and evaluation. It studies the process of game development and explores the complexity of its management. It examines basic computer hardware and communication technology that underpin games playing. It emphasises the development of software skills using a range of technologies and other practical skills in preparing media for incorporation into a game. Students will also create deliverables around a variety of game concepts both as part of a team and individually.

Although most games run on PCs or special consoles, there is growing interest in digital games on devices such as mobile phones, personal digital assistants (PDAs), digital television and enhanced toys. As computer processors become embedded in more products, they present new opportunities for the development of innovative games. The course develops relevant skills to allow you to seize these opportunities.

Developing any computer system is a creative activity, which solves problems using appropriate technology. It requires many skills and abilities, relating to hardware, software and people. These skills include the analysis, design, and implementation of software, hardware, and data communication technology, the use of a variety of tools and the ability to communicate with a wide range of people, such as users and clients involved with the analysis of a problem, and the designers and programmers who implement the solution. Developers must be able to learn quickly to cope with the rapidly developing technology. The skills you acquire on the computer games development course will be applicable to many computing careers.

At the University of Central Lancashire, we are concerned with the development of technical abilities and skills in all our Computing students, but we also want to develop your abilities

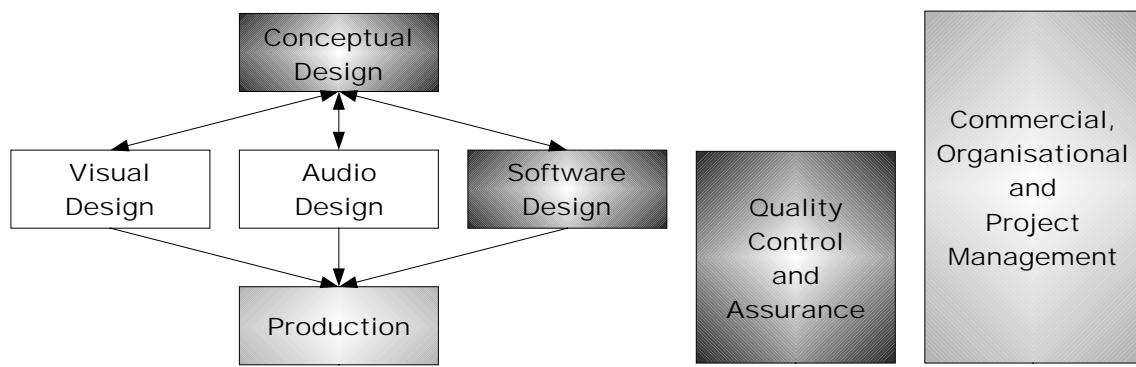
for logical thought, independent learning, teamwork, ethical practice and communication. These capabilities will be important whatever your career.

To help you adapt to the inevitable changes and developments in technology during your career, the course considers underlying theory and potential new developments as well as current practice and techniques.

How are games developed?

A commercial computer game is a complex multimedia product developed through the combination of diverse skills. Developers in the industry can roughly be divided into media creators (illustrators, animators, musicians) and software developers. This course is aimed at software developers. A more detailed analysis of roles in games development is shown below, with the shading indicating the focus of this course.

Roles in Games Development



Will I find a career in Games Development when I graduate?

Computer games are popular and the games industry is growing. It needs creative and innovative designers and skilled developers to maintain that popularity. However, the games industry is highly competitive and careers in games development are highly sought after. To be successful you will have to develop a very high level of technical and personal skills. Many games development companies are relatively small and tend to recruit experienced developers. You should consider undertaking a placement (see page **Error! Bookmark not defined.**) to give you additional experience when you are looking for a career. You should make sure that you build up a portfolio of your work to demonstrate your capabilities. In particular, this should include sample games that you have developed during the team project in year 2 and your individual final year project.

You may want to work as an independent contractor. You will need to gain relevant work experience. Legal and commercial issues are particularly important when you are working on your own.

What other careers are open to me when I graduate?

Although your chosen course will reflect your current interests and strengths, you should not constrain your career goals because of your course: many companies that employ computing graduates will provide specialist training for particular jobs. You may find work as a user interface designer, multimedia designer, software engineer, programmer or consultant; you may proceed to research or further study; or you may prefer to work in sales or customer support.

Careers in developing software systems are varied and interesting. You may be involved in the analysis, design and implementation of software systems for various types of commercial

organisation. You will use a wide range of analysis skills, design methods and implementation tools. You will probably work within a team.

Of course, computing also provides a useful background for many other careers that do not have subject-specific entry requirements.

What are the aims of the course?

The emphasis is on the development of a high-level of skills in software development using appropriate tools. You will apply these skills to develop and apply algorithms in specific contexts (e.g. graphics, game physics, and integration with specific hardware).

Developing software for computer-based games may include the integration of visual and audio components and taking responsibility for project management, quality control and quality assurance. It involves working in multi-disciplinary project teams, contributing significantly to the conceptual design of new games, and appreciating the constraints of commercial reality.

On completion of the course, you will be able work in a multidisciplinary team to develop high quality, robust, well-documented and maintainable games software. Although the course is based in the context of computer games development, the skills you have acquired will also allow you to develop software solutions to a wide range of problems.

In industry, you may be involved in the full software development lifecycle and not simply be a programmer. You will investigate and analyse challenging problems and specify, design, implement and test solutions using the appropriate technology. You will be able to gather requirements, write specifications and technical reports, and discuss ideas and proposed solutions with developers from other disciplines, particularly graphic designers. You will have a professional approach and attitude towards work and are aware of the legal and ethical implications of their actions.

The course will:

- Develop the skills and understanding of theory necessary for the graduates to be employed in a Computing environment
- Encourage and enable students to become independent learners.
- Develop critical evaluation, communication, enterprise and self-management skills.
- Produce graduates with the skills and confidence to solve problems independently and as part of a team
- Provide an opportunity for students to develop transferable skills and enhance subject-specific expertise by undertaking a work placement
- Enable students to develop computer games.
- Foster an appreciation of the commercial requirements of the games industry.
- Develop innovative and creative approaches to the conceptual design of games.

What will I be able to do by the end of the course?

What we expect you to be able to do is defined by the course learning outcomes, which are detailed in the section 12 of the programme specification in Appendix 8.1.

We expect our graduates to display an enquiring, open minded and creative attitude in all they do.

Each module has specific learning outcomes, which contribute to the overall course learning outcomes, as shown in the table below. Detailed information about the Aims and Learning Outcomes of the course is given in the Programme Specification, which is in Appendix 8.1

1.2 Course Team

Key members of your course team are Gareth Bellaby (gjbellaby@uclan.ac.uk), your Course Leader and Lesley May (lmay@uclan.ac.uk), the First Year Tutor, and Nicky Danino (ndanino@uclan.ac.uk), the Project Tutor.

Each module will be led by a module tutor, who plans the module and sets the assessment. See Section 2 for a list of modules and the current module tutors. Module tutors may change from one year to the next. When you do your project, you will be allocated a project supervisor, who will help you manage your project.

Chris Casey (ccasey@uclan.ac.uk) is the Computing Academic Lead, responsible for the overall quality of all Computing courses and should be contacted if there are problems that can't be resolved by the module tutor or course leader.

1.3 Expertise of staff

You will be taught by staff with a wide variety of industrial and research backgrounds. They have substantial experience of teaching at this level. The School has researchers working in a range of computing-related areas. Research into Human-computer interaction is important, particularly through the Child-Computer Interaction group (CHICI). There is research into data communications and networks, mobile computing, computer security and software engineering, particularly Agile software development. We have collaborated with Sony, BAE and a variety of UK and overseas Universities.

Staff industrial experience includes working in the games industry, the defence industry and the telecommunications industry, as software or database developers. The School is involved in consultancy and develops software for clients.

1.4 Academic Advisor

You will be assigned an Academic Advisor who will provide additional academic advice and support during the year. They will be the first point of call for many of the questions that you might have during the year. Your Academic Advisor will be able to help you with personal development, providing insight and direction to enable you to realise your potential.

1.5 Administration details



Campus Admin Services provides academic administration support for students and staff and are located in the following hub which opens from 8.45am until 5.15pm Monday to Thursday and until 4.00pm on Fridays. The hub can provide general assistance and advice regarding specific processes such as extenuating circumstances, extensions and appeals.

Computing and Technology Hub

C&T Building Room 235

Contact Details: candthub@uclan.ac.uk or +44 (0)1772 891994

1.6 Communication



Outside of taught classes, we will normally communicate with you by email and by E-Learn. The University expects you to use your UCLan email address and check regularly for messages from staff. If you send us email messages from

other addresses they risk being filtered out as potential spam and discarded unread.

If you want, you can set up rules to redirect emails to your personal email address. If you send us email messages from other addresses, they risk being filtered out as potential spam and discarded unread.

Staff will try to reply to emails within 24 hours during the working week. However, they may take longer during busy periods or if they are away from the University. Time-critical issues should be raised with your course leader or academic lead if you don't get a response in a reasonable time.

1.7 External Examiner

The University has appointed an External Examiner for your course to help to ensure that the standards of your course are comparable to those provided at other higher education institutions in the UK. If you wish to contact your External Examiner, do this through your Course Leader and not directly. External Examiner reports are available through the Computing Student Noticeboard, which you can access through Elearn Blackboard.

Every module has an External Examiner, who reviews examination papers and coursework briefs set by a module tutor and internally verified by another tutor.

The external examiners moderate a sample of student work after it has been marked and internally moderated by the course tutors. The sample includes work awarded marks from the different classes, that is, Fail (<40), Third (40-49%), Lower Second (50-59%), Upper Second (60-69%), First (70+%). The moderators check that the standards are appropriate and that the work has been marked consistently.

Dr Martin Randles of Liverpool John Moores University is the External Examiner who takes overall responsibility for checking the quality of the course, particularly for assessments and the way they are marked on the key modules. Other examiners have responsibility for other modules

2. Structure of the course

2.1 Overall structure



For a full-time 3 year Honours Degree, you will take 18 modules, six in each of 3 years for a full-time student. Part-time students will study no more than 4 modules per year. If you have previous study at an appropriate level, you may be entitled to exemptions. Each module has a level rating, ranging from 4-6, roughly corresponding to years 1-3 of your Degree. If you are enrolled on a foundation entry year, you will study an additional 6 modules to prepare you for the first year of the 3 year Honours Degree.

To obtain an Honours Degree, you must pass 18 modules at level 4 or above, with at least 12 at level 5 or 6, including at least 5 at level 6. The double module project will provide two of the level 6 modules. Some students will start with a Foundation year. This consists of 6 modules that prepare you for the first year of the Honours programme. Two thirds of these are technical modules. The other modules help you to develop the skills you need to succeed in Higher Education and to provide a broader education, which will be very useful in your future career.

You will normally study in Preston, but you may have the opportunity to study the course at our Cyprus campus or to undertake equivalent modules with a University abroad. Discuss these possibilities with your course leader or the first year tutor.

It is a good idea to take a year out in industry – a placement – between your second and final year. This is optional, but will give you valuable work experience that will make you stand out when you are looking for a career. During your second year, we will provide help

and advice on seeking a placement, but we cannot guarantee you a suitable placement. As you will be treated as a normal paid employee, you will have to apply for and undergo the normal company admissions process to obtain a placement. Placements can be anywhere in the UK or even abroad.

2.2 Modules available

Each module is a self-contained block of learning with defined aims, learning outcomes and assessment. A standard module is worth 20 credits. It equates to the learning activity expected from one sixth of a full-time undergraduate year. Modules may be developed as half or double modules with credit allocated up to a maximum of 120 credits per module. The course structure has three strands: technical, games-specific, and project management. The technical strand develops general computing skills that are relevant to games development. The games-specific strand looks at conceptual issues and games-specific technology. The project management strand develops communication skills, provides experience in applying appropriate techniques to team and individual projects, and illustrates the importance of legal, social, ethical and commercial issues.

The programme specification (Appendix 8.1) lists the modules that you can take as part of your course. Some optional modules may not be available every year and timetabling clashes may prevent you taking certain combinations of modules.

Foundation Year

Most students will go directly into the first year. However, if you are taking the foundation year, you will study six modules at level 3. Three of these will develop general academic skills, which will help you to become an effective University student. Three will develop technical and personal skills more directly related to computing.

[Note: the module tutor may change from one year to the next.]

Code	Module Title	Credits
COC001	Introduction to Software Development	20
COC002	Investigating IT	20
COC003	Problem-solving for Computing	20
COC004	Study Skills 1 – Learning How to Learn	20
COC005	Study Skills 2 – Developing Academic Skills	20
COC006	Introduction to Mathematical Methods	20

At the end of the foundation year and at the end of stage one, you can remain on your current course or choose another. We will discuss the options available in the second semester of the foundation year.

The First Stage

In the first year, you will study the following modules:

[Note: the module tutor may change from one year to the next.]

Code	Module Title	Credits
CO1111	The Computing Challenge	20

CO1301	Games Concepts	20
CO1507	Introduction to Networking	20
CO1401	Programming	10
CO1404	Introduction to Programming	10
CO1605	Systems Analysis & Database Design	20
CO1708	Computer Systems and Security	20

Why are the first year modules important?

The first year is a 'common first year' apart from Interactive Applications, which is replaced by Games Concepts on some other courses. There are three strands: the technical strand develops software development skills and introduces students to the hardware context. The games strand examines games concepts and introduces games programming skills as well as the mathematical basics for games. The project management strand develops communication and self-management skills and introduces relevant legal issues.

The Technical Strand

Programming is obviously central to Computer Games Development and we expect you to develop a high level of programming skills. Systems Analysis and Database Design studies the problems of obtaining requirements, designing systems and implementing databases, which can be an important component of complex games or their supporting systems.

Distributed games rely on the data communications technology covered in Introduction to Networking. Such system must be secure, which requires an understanding of computer technology and human factors explored in Computer Systems and Security

The Project Management Strand

The Computing Challenge introduces teamwork and presentation skills, which help you to work with others on projects and to interact with managers and clients. Systems Analysis and Database Design also covers a modern, Agile, approach to project management.

The Games Strand

Games Concepts covers maths concepts and techniques for computer graphics and applies your programming skills to the development of interactive games using our in-house games engine.

The Second Stage

In the second full-time year, the technical strand develops programming skills particularly in the context of computer graphics and mobile computing. It also explores the theory and practice of the design and evaluation of effective user interfaces. The games strand examines and uses tools for game development. The project management strand includes project management techniques and legal and ethical issues in computing. The Agile Professional module includes a team project to develop a game along with students from the Games Design course in the Department of Design.

Code	Title	Credits
CO2301	Games Development 1	20
CO2401	Software Development	20
CO2402	Advanced Programming	20

CO2403	The Agile Professional	20
CO2409	Computer Graphics	20
CO2412	Computational Thinking	20

The Placement Year

You will take this for a Sandwich award, which gives you industrial experience that will help you in your final stage and make it easier to find a job when you graduate. Placements maybe available both overseas and in the UK (there is additional information in the Computing Handbook for Degree Students)

Code	Title	Credits	Status
CO2802	Industrial Placement Year	120	Optional

The Final Year

In the final year, the technical strand enhances programming and multimedia development skills. The games-specific strand integrates technical and conceptual aspects of games design. The project management strand culminates in the development of a game in a project, which although individually assessed, may involve interaction with other students, from this or other courses, for example, from the Department of Design. It is **your responsibility** to register an appropriate module from the options' list. We may vary the option list each year. Because of resource constraints, we cannot guarantee that all the option modules will run.

Code	Title	Credits
CO3301	Games Development 2	20
CO3303	Maths and Technology for Games	20
CO3402	Object Oriented Methods in Computing	20
CO3808	Honours Project	40
	One of	
CO2509	Mobile Computing	20
CO3717	Games for the Internet	20

The Project

The project is the opportunity for you to design and develop an original game. You may work with other students providing that we can assess your individual work. This gives you the opportunity to work with students from this course or from related courses such as B.A. Games Design.

To reflect the importance placed on the project in the final year, it is a double module. However, if you move onto the ordinary route in year 3 you must take the Ordinary Degree Project (single module) not the Honours Degree Project (double module).

Choosing Options

Before selecting an option, you should consider your own interests and career plans and look carefully at the module syllabuses. Although a level 3 module will be more academically challenging than a level 2 module, you should not assume that a level 2 will be easier – this depends on how interesting you find the topic. Moreover, if you do well on a level 3 module, it will make a greater contribution to your overall award. Advanced topics may be more attractive to potential employers. To help you, here is a brief overview of each of the available modules.

CO2509 Mobile Computing

This module covers the fundamentals of writing communicating software, which is useful for on-line games. It gives an overview of how networks, particularly wireless networks, work. It looks at developing Internet-based software and programs for mobile phones.

Relevance to Games Development: This will enhance your understanding of communications technology and help you to develop distributed games.

CO3717 Games for the Internet

This module provides the student with the skills and background necessary to develop Internet-based games, examining the technology that is utilised for the development of online games and their distribution. Psychological aspects, including playability and usability, particular to online games are evaluated. Emphasis is placed upon the multimedia concepts relevant to online game implementation.

Relevance to Games Development: Online gaming.

2.3 Course requirements



As a student hoping to become a computing professional, you should uphold the Code of Conduct of the BCS, the Institute for IT, which is the professional body for IT. We encourage you to join the BCS as a Student Member.

2.4 Module Registration Options

Discussions about your progression on the course normally take place in February each year. It is an opportunity for you to plan your study over the next academic year. The course team will tell you about the various modules / combinations available and you will both agree on the most appropriate (and legal) course of study for you.

After the first year of any of our computing Honours Degree courses, it is possible to transfer to another computing Honours course. For most courses, you won't need to do any extra work, but if you are transferring to a degree other than BSc (Hons) Software Engineering you may need to do some extra work to ensure that the change is appropriate.

2.5 Study Time

2.5.1 Weekly timetable

A timetable will be available once you have enrolled on the programme, through the student portal.

2.5.2 Expected hours of study

We expect you to study for 10 hours per each credit taken (i.e. 200 hours for a 20 credit module) – this includes attendance at timetabled classes, assessment and time spent in private study. It means roughly 36 hours per week, most of which is in your own time. In lectures, the lecturer presents and explains concepts. In practicals, you will usually use worksheets to guide you through computer-based work. Tutorials are often based on worksheets and small or whole group discussion.


Most first year modules in Computing involve 3 hours of class contact, a one-hour lecture and two hours of tutorial or practical. You will normally have about 17 hours per week of

class contact in year 1. You should work for at least that long outside of class, giving a working week of 36 hours on average.

Most second and third year modules have a lecture and either one or two hours of tutorials or practicals. You should work for around twice that long outside of class as part of your working week of 36 hours.

In your own time, you will have assignments and directed work from practicals or tutorials as well as reading and adding to your notes from the lectures. However, you are expected to find and read other relevant information for yourself. Computing is a very practical subject and there is always more practical work that you can do to develop your skills.

2.5.3 Attendance Requirements

 You are required to attend all timetabled learning activities for each module. Notification of illness must be made to CandTHubAttendance@uclan.ac.uk.

Exceptional requests for leave of absence must be made to Lesley May (lmay@uclan.ac.uk) for first year students or to your Course Leader for other students.

We will monitor your attendance. It is your responsibility to make sure your attendance is recorded. You can check your attendance record through myUCLan. Occasional absences are not a problem, but you should discuss your attendance with the module tutor if your attendance is not recorded for more than one event that you attend.

You must only enter your own details on the attendance system. To enter information for anyone else is dishonest and would result in inaccurate records, which might mean that a student's problems might not be detected until it is too late for us to help. Any student who makes false entries can be disciplined under the student guide to regulations.

International students may have responsibilities under the UK Visas and Immigration (UKVI), Points Based System (PBS) - you MUST attend your course of study regularly; under PBS, UCLan is obliged to tell UKVI if you withdraw from a course, defer or suspend your studies, or if you fail to attend the course regularly.

If you have not gained authorisation for absence, do not respond to communications from the University and are absent for four weeks or more, you may be deemed to have withdrawn from the course. If so, the date of withdrawal will be recorded as the last day of attendance.

3. Approaches to teaching and learning

3.1 Learning and teaching methods

The course offers you a mixture of lectures, tutorials and practical classes to help you learn. These are supported by material on Elearn Blackboard, our online virtual learning environment. You will need to supplement the classes with reading and practical work in your own time. Each of the methods can be very effective if you make proper use of them:

Lectures

These provide a lot of information to a large group in a short time. In most cases, notes will be provided on Elearn Blackboard. However, they are not a substitute for making your own notes. You don't need to copy down everything the lecturer says. The idea is to understand the main points and to write down what you need to remind you of them later. Don't be afraid to exchange notes with a friend or to experiment with only taking brief notes. Do try to relate the topics covered in a lecture to those covered earlier in this module or in others. Lecturers often provide notes, possibly through the Web. It is useful to have these before the lecture, so that you can add your own notes alongside. If you don't understand something, don't be afraid to ask. Your question may reflect problems that many of your colleagues are having. The lecturer will have limited time to answer questions in detail, but will be happy to clarify

points that many students find difficult. Some questions may have to wait until after the lecture. You can always contact your module tutor by email, but there may also be a discussion board on Elearn Blackboard.

Tutorials and Seminars

These involve smaller groups to allow you to participate more actively. Do so. You can also use this opportunity to get help with your own specific problems.

Practical Classes and Laboratories

These give you the chance to practise practical skills under supervision. It is usually possible to get a copy of the practical sheet from Elearn Blackboard before the class. If you know what is required, you can make better use of the member of staff present. If you are stuck, do ask, but make a serious attempt to solve the problem yourself and show your lecturer your work to give them some idea of where you're up to. You can be fairly sure you're not the only one finding the exercise difficult. If the task were straightforward, we'd not be giving it lab time. You may have to spend time outside of the class to complete the exercise. Remember that the purpose of the exercise is not simply to follow the instructions like a recipe: you need to understand and learn from what you have done.

3.2 Study skills

Study Skills - 'Ask Your Librarian'

https://www.uclan.ac.uk/students/support/study/it_library_trainer.php

You can book a one to one session with a subject Librarian via Starfish. These sessions will help with questions such as "My lecturer says I need a wider variety of sources in my references, what do I do?"

"I need to find research articles, where do I start?"

"How do I find the Journal of ...?"

"How do I use RefWorks?"

WISER (<http://www.uclan.ac.uk/students/study/wiser/index.php>) provides support on how to take notes, to write essays and to do exams, which can make a big difference to your confidence and ultimately to your final Degree classification. You will be surprised at how few students don't bother to take advantage of the full range of support that is offered.

In your first year, we will help you to develop your study skills during induction, and in other first year modules such as CO1111, The Computing Challenge.

One key skill is time management. University life is very busy during term time. Some people find the difference between college or school and University very difficult indeed. Juggling your time to attend lectures, seminars and labs, working on assignments and private study, and finding time for part-time work, plus all the other social activities that make university life so much fun; demands excellent time management skills.

Time management is probably one of the most difficult lessons you will have to learn. The workload does not become any less as your course progresses. You should develop skills to manage your workload for yourself. Here are a few tips that may be useful:

- Make a start on each assignment as soon as you receive it. You may have several weeks to complete it, but if you delay starting it, you will discover that deadlines creep up and you have too much to do, or you will concentrate on one piece of work to the exclusion of others. An assignment may look impossibly large, but a little work every day will soon have it done.

- Work in the library or labs when you have no timetabled classes: this way you get your assignments finished and make effective use of your time.
- If an assessment requires group working, co-operation is needed. If you work best late at night and the rest of your group are 'morning people' you will almost certainly have communication problems and possibly time management problems as well. Learning to compromise and being flexible is an essential part of successfully working in groups.

What do the course team expect of me?

We expect you to attend all classes and to do significant additional work outside of classes. Working consistently will help you understand the material and make assignments easier.

You will be expected to adopt a responsible attitude towards the quality of work that you produce and the deadlines you are set. **Keeping to deadlines and completing your assignments on time is an important part of the course. If you fail to keep to deadlines you will be penalised.**

Most day-to-day communication will take place through University e-mail. Read your e-mail regularly, at least once per day – not having seen a notice is no excuse for missing something important. You may wish to set up a rule to forward university e-mails to your home e-mail address automatically to ensure you have all this information.

If you have problems, please discuss them as early as possible with the relevant staff to try to resolve them.

You must inform the Hub

- if you change your address, so that we can contact you when necessary
- if you are absent for more than a couple of days through illness or other reason.

3.3 Learning resources

3.3.1 Learning and Information Services (LIS)

The best place to start when exploring the Library resources available to you is;

- Your 'Subject Guide' can be found in the [Library Resources](#)
- Your 'My Library' tab in the [Student Portal](#)
- [Library search](#)



During induction, you will learn about the resources provided by LIS (<https://www.uclan.ac.uk/students/study/library/>). Learning how to find and evaluate information is a skill that will benefit you throughout your career.

Books

Although these contain lots of information, it can be difficult to learn from a book unless you approach it properly. A textbook is not a novel - it doesn't have to be read from cover to cover. You need only read and understand the bits that are relevant to you. Therefore, before investing much time in a book, you should know what you want to get from it. This may mean skipping through the book and looking for key sentences and section headings. Use the Contents list and the Index.

There are a number of methods for 'reading with understanding'. You may not want to apply the methods rigorously, but they do contain some good ideas. A typical method is SQ3R:

- | | |
|----------|--|
| Survey | - scan quickly through the book to see what it contains |
| Question | - jot down the questions you hope the book will answer
(i.e. what you want to know) |
| Read | - read the parts of the book which answer your questions |
| Recall | - close the book and see if you can answer the questions |

Review - review the relevant sections of the book.

Journals

These contain articles written by researchers or practitioners. They tend to be more up to date than books, but also more complex and difficult to understand. You will make more use of these during the second and third year, but that shouldn't stop you following up topics that interest you in journals. You can find journals in the library, but most students use the Internet to find published articles.

3.3.2 Electronic Resources

LIS provide access to a huge range of electronic resources – e-journals and databases, e-books, images and texts. See http://www.uclan.ac.uk/students/library/online_resources.php for more information. You should make use of the Discovery search engine (http://www.uclan.ac.uk/students/library/discovery_resource.php).

All modules will be supported by information on Elearn and you should make sure that you make use of this outside as well as in class.

Elearn Blackboard

This is our on-line learning environment, which contains

- Teaching material: outline lecture notes, tutorial and practical exercises and links to further reading
- Assessments: coursework, tests and on-line examinations
- Discussion groups: an opportunity for you to exchange views with other students and teaching staff

The Internet

This is a key source of information, which can give you access to books, journal articles and other material. It is important that you learn how to use Search Engines such as Google (www.google.com) to help you find **relevant** information. Remember that, unlike journal articles, which are reviewed by other experts, anyone can publish on the Internet – don't assume that everything you find is correct. Whichever source you use, you must ensure that you **DO NOT PLAGIARISE** someone else's work. In essence, this means making sure that say where you have got your ideas from: we use the Harvard Convention for References.

3.4 Personal development planning

Personal development planning is about assessing your own skills and abilities and planning how to develop them during (and after) your course. Technical development is part of this, but personal skills such as teamwork and communication skills are also important to your success at University and in your career. Employers put a great emphasis on these aspects.

Personal development is a particular emphasis of CO2403, The Agile Professional.

3.5 Preparing for your career



CO2403, The Agile Professional is designed in collaboration with Careers to help you stand out from other graduates

The Careers advisory service ([Careers](#)) offers a range of support for you including:-

- career and employability advice and guidance appointments
- support to find work placements, internships, voluntary opportunities, part-time employment and live projects
- workshops, seminars, modules, certificates and events to develop your skills
- a daily drop in service from 09:00-17:00 for CV checks and initial careers information.

For more information, visit the careers team in Foster Building, or access our careers and employability resources via the Student Portal.

4. Student Support

Information on the support available is at: <https://www.uclan.ac.uk/students/>

If you have problems relating to a specific module, contact the relevant module tutor

For more general problems, as well as your academic advisor (see below) you can also discuss problems with Gareth Bellaby (gjbellaby@uclan.ac.uk), your Course Leader, and in the first year, Lesley May (lmay@uclan.ac.uk), who is the First Year Tutor.

Chris Casey (ccasey@uclan.ac.uk) is the Computing Academic Lead, and should be contacted if there are problems that can't be resolved by the module tutor or course leader.

[The 'i'](#) Student Information Centre offers information and support on a wide range of issues.

4.1 Academic Advisors



Your Academic Advisor is an academic member of staff who will discuss your progress with you and help you to deal with problems. In the first year, your Academic Advisor will teach you so you will have the opportunity to speak to them informally. They will arrange to see you formally several times during the year. You can contact them by email to arrange a private meeting.

4.2 Students with disabilities

Chris Casey (ccasey@uclan.ac.uk) is the acting disability co-ordinator for students with disabilities in CEPS. Please contact him directly for further advice / support, particularly if you have not been allocated a Disability Advisor. He is not a specialist disability advisor but can help to ensure that appropriate arrangements have been put into practice.

4.3 Students' Union

The Students' Union offers thousands of volunteering opportunities ranging from representative to other leadership roles. We also advertise paid work and employ student staff on a variety of roles. You can find out more information on our website:

<http://www.uclansu.co.uk/>

5. Assessment

5.1 Assessment Strategy



Given the practical and vocational nature of computing courses, there is an emphasis on practical assessment. You will sit examinations, but you will also be assessed on the sort of tasks you might have to perform in industry including communication skills and team work. As a result, your progress will be monitored in a variety of ways.

All modules have some coursework assessment. This may take the form of a report or program to write, a system to analyse or design, or a presentation to give. We usually expect you to document the program, justify design decisions and evaluate the quality of the program. You should read the assessment criteria in the assignment specification carefully. No matter how wonderful your work seems to you, you won't do well unless you make sure you satisfy these criteria. We assess your work considering industry standards and professional norms. If you work to our criteria, you will learn how to become an effective, respected computing professional.

In course assessment doesn't just assess what you can do – by doing the assessment you will learn and consolidate the skills you have. Your tutors will give you formal feedback on

assignments to help you to do better on other assessments, but more importantly for your future career, to show how you can improve your performance on similar tasks in the future. By acting on the feedback from the lecturer, you will develop your competence and understanding.

You will also get a lot of informal feedback on your performance in class, particularly during practical classes.

Many modules have an examination at the end. Some of these examinations may be "open-book" examinations where you are allowed to take notes and/or books into the examination. Others are more traditional examinations, although some of these may be based around a case study that is issued before the examination.

The overall mark for each module is calculated as a weighted average of the coursework and examination marks. The details are given in the module descriptor held on Elearn Blackboard.

5.2 Notification of assignments and examination arrangements

How do I know what assignments I will have?

At the beginning of the year you will be issued with an indicative assignment schedule. Also at the start of each module, the module leader will tell you the latest date by which a piece of coursework will be released and the date by which you must submit it. This is to help you to plan your work. Examinations will be displayed on your on-line timetable.

How do I submit my assignments?

Assignments are usually submitted on-line through Elearn Blackboard, which gives you an electronic receipt. Keep a copy of it safe. *To reduce problems from lost assignments, keep a **complete** copy of the work you hand in.*

As far as possible your work will be marked anonymously, so assignment work submissions must not contain your name.

Aim to complete the coursework before the hand-in date to allow a margin of safety in case of technical problems. The University provides you with the software and hardware relevant to your course. If you choose to use your own equipment you are responsible for backing it up. Therefore please note that **failed/lost computers; failed/lost hard-drives, etc will not be accepted as an excuse for late submission.**

Meeting deadlines and dealing with problems in good time are essential parts of your preparation for industry. If you have a problem that may make it difficult to meet a deadline, discuss it with the relevant lecturer **before** the deadline if possible.

If you fail to submit a piece of work without a good reason, you will be given 0% for that work. This will make passing the module very difficult and may mean that you have extra work to complete over the summer. **It makes sense to hand work in before the deadline, even if it is incomplete.**

Will I be penalised for late work?

Except where an extension of the hand-in deadline date has been approved (using extenuating circumstances forms), lateness penalties will be applied in accordance with University policy as follows:

(Working) Days Late	Penalty
1 - 5	maximum mark that can be achieved is 40%
more than 5	0% awarded

5.3 Referencing

In your assignments, use Harvard convention for referencing whenever you make a reference to someone else's work. You can find lots of information about this on the internet (e.g. <https://v3.pebblepad.co.uk/v3portfolio/uclan/Asset/View/Gm3mmGk6sM3RgHZnjGfh7mm6pM>), but you will be given more information about it during your course. If you are in any doubt, ask a lecturer for guidance.

5.4 Confidential material

If you use personal or commercially confidential information in your assignments (e.g. in your project), you have ethical and legal responsibilities to respect confidentiality and maintain the anonymity of individuals and organisations in your work assignments.

Students who do projects for clients must arrange for a client project agreement to be signed by the participants to ensure that they all understand their responsibilities.

5.5 Cheating, plagiarism, collusion or re-presentation

Please refer to the information included in section 6.6 of the University Student Handbook for full definitions. The University uses an online Assessment Tool called Turnitin. A pseudo-Turnitin assignment will be set up using the School space on Elearn Blackboard to allow students to check as many drafts as the system allows before their final submission to the 'official' Turnitin assignment. Students are required to self-submit their own assignment on Turnitin and will be given access to the Originality Reports arising from each submission. In operating Turnitin, Schools must take steps to ensure that the University's requirement for all summative assessment to be marked anonymously is not undermined and therefore Turnitin reports should either be anonymised or considered separately from marking. Turnitin may also be used to assist with plagiarism detection and collusion, where there is suspicion about individual piece(s) of work.

5.6 How do I know that my assessed work had been marked fairly?

Assessment is an integral part of the course. Module staff work closely together to design assessments, agree the marking criteria and approve final versions of assessments to ensure that these are appropriate. The criteria for assessment will be communicated to you clearly during the module teaching.

All module staff engage in development and training in assessment, marking and feedback. Once the assessments have been completed the module team will discuss the assessment methods and marking criteria, prior to starting to mark, so that there is a common understanding of what is expected of students. All assessed modules have moderation built into the marking process. Moderation involves sampling students' assessed work to make sure that the learning outcomes and agreed marking criteria have been interpreted and applied in the same way. This ensures that you and your fellow students are treated equitably and that the academic standards are applied consistently. During the marking process the module leader will co-ordinate moderation to ensure that at least 10% of assessed work (or a minimum of three pieces) has been reviewed by other markers and any concerns about consistency or accuracy addressed with the whole module team. Your work may or may not be part of this sample, but the processes for developing assessments and marking criteria as well as moderation mean that you can be confident that teaching staff are marking assessments to the same criteria. Module teams may then use feedback from moderation to improve clarity about the nature and purpose of future assessment, or to make changes if required.

Modules are also moderated externally. The module leader will arrange for the external examiner to receive a sample of work for review and comment. External examiners cannot change individual grades, but can act as 'critical friends' and confirm that marking standards are in line with other, similar courses in the sector. If, on reviewing the sample, external examiners feel that the marking criteria have not been applied consistently the work of the whole cohort will be reviewed.

6. Classification of Awards

The University publishes the principles underpinning the way in which awards and results are decided in [Academic Regulations](#). Decisions about the overall classification of awards are made by Assessment Boards through the application of the academic and relevant course regulations.

7. Student Feedback



You can play an important part in the process of improving the quality of this course through the feedback you give. For example, we made significant changes to the Foundation Entry Year after the first year of operation because of feedback from students indicated that study-skills modules would be better if they were more computing-oriented. A new maths module and two computing-based study skills modules were introduced.

7.1 Student Staff Liaison Committee meetings (SSLCs)

The purpose of a SSLC meeting is to provide the opportunity for course representatives to feedback to staff about the course, the overall student experience and to inform developments which will improve future courses. These meetings are normally scheduled once per semester. Details of the Protocol for the operation of SSLCs is included in section 8.2 of the University Student Handbook. SSLC meetings are scheduled and chaired by the School President and administered by CAS.

Do not simply save up problems to be raised at the meeting. To help resolve them quickly, problems should be raised with relevant staff, your course representative, or support staff as soon as you are aware of them.

8. Appendices

8.1 Programme Specification(s)

UNIVERSITY OF CENTRAL LANCASHIRE

Programme Specification

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided.

Sources of information on the programme can be found in Section 17

1. Awarding Institution / Body	University of Central Lancashire
2. Teaching Institution and Location of Delivery	University of Central Lancashire Preston
3. School	Physical Sciences and Computing
4. External Accreditation	BCS, The Chartered Institute for IT
5. Title of Final Award	BSc (Hons) Computer Games Development
6. Modes of Attendance offered	Full-time Part-time Sandwich (Additional Year)
7a) UCAS Code	G451
7b) JACS Code	I600
8. Relevant Subject Benchmarking Group(s)	Computing
1. Other external influences	International Games Developers Association (IGDA) British Computer Society (BCS)
2. Date of production/revision of this form	April 2017
11. Aims of the Programme	
BSc (Hons) Computer Games Development is a programming degree. The course will produce graduates who can design and develop software for computer-based games. The course covers the implementation of computer graphics, artificial intelligence, game logic and mechanics.	

Common Computing Aims

- | |
|--|
| <ul style="list-style-type: none">• To develop the skills and understanding of theory necessary for the graduates to be employed in a Computing environment |
| <ul style="list-style-type: none">• To encourage and enable students to become independent learners. |
| <ul style="list-style-type: none">• To develop critical evaluation, communication, enterprise and self-management skills. |
| <ul style="list-style-type: none">• To produce graduates with the skills and confidence to solve problems independently and as part of a team |
| <ul style="list-style-type: none">• To provide an opportunity for students to develop transferable skills and enhance subject-specific expertise by undertaking a work placement |

Specific Aims

- | |
|--|
| <ul style="list-style-type: none">• To enable students to develop computer games. |
| <ul style="list-style-type: none">• To foster an appreciation of the commercial requirements of the games industry. |
| <ul style="list-style-type: none">• To develop innovative and creative approaches to the conceptual design of games. |

12. Learning Outcomes, Teaching, Learning and Assessment Methods

A. Knowledge and Understanding

The successful student will be able to

- A1. Explain, evaluate and apply techniques and methods to solve a range of computing problems
- A2. Evaluate and apply project management tools and techniques
- A3. Analyse the core mechanics, concepts and logic of computer games.
- A4. Analyse social, ethical and legal issues relevant to the development and use of computer-based games.

Teaching and Learning Methods

Acquisition of knowledge is mainly supported through lectures and directed learning. The role of directed learning increases as the course progresses. Understanding is reinforced through practical, tutorial and seminar work. This may involve a series of small exercises, extended case studies or discussions. Drop-in help sessions are provided to support particular areas.

Assessment methods

Informal and formative feedback is provided in tutorial, seminar and practical classes through class discussion and individual advice. Formal assessment is through practical and written coursework, and time-constrained examinations, which may include on-line multiple-choice exams, traditional examinations, open-book examinations and partially-seen questions.

B. Subject-specific skills

The successful student will be able to

- B1. Solve technical and human problems relating to the development and use of IT-based systems
- B2. Select and use appropriate analysis, design and implementation methods, languages and tools to develop high-quality software, particularly for computer games.
- B3. Edit and integrate audio and visual content to create computer games.
- B4. Develop software in a legal, ethical and professional manner.
- B5. Evaluate computer games.
- B6. Plan, conduct, and report upon a substantial game development project.
- B7. Create and extend game play concepts for computer games.

Teaching and Learning Methods

Computing is a highly practical subject. Skills are developed in a co-ordinated and progressive manner during the three years of the programme. At level 4, the focus is on the acquisition of basic skills through laboratory exercises. At higher levels, more specialist equipment is used. Some practical work demonstrates advanced techniques, while extended practical work enables students to exercise creativity and develop their own solutions. Lectures, sometimes involving on-line demonstration, are supported by tutorials, seminars, practical exercises and directed work.

Assessment methods

A variety of methods are used to assess technical and personal practical skills. These include laboratory exercises, oral presentations, formal reports, and implementation exercises with supporting documentation demonstrating a professional approach and evaluating methods and products.

C. Thinking Skills

The successful student will be able to

- C1. Investigate complex situations thoroughly and impartially
- C2. Locate, evaluate and integrate information from multiple sources
- C3. Evaluate ideas, methods and systems
- C4. Analyse and solve problems

Teaching and Learning Methods

Intellectual skills are developed through practical work, tutorial and seminar work and coursework assignments. Discussion among students and with staff during tutorials and supervisory meetings are key methods for the development of thinking skills. Problem-solving is developed in practical

classes, seminars and tutorials. Throughout the course, students practise problem-solving individually and in groups. Students research, apply and evaluate information during the professional skills module and during the problem-solving project.

Assessment methods

Staff in class and in supervisory meetings provide informal formative feedback. Intellectual skills are partly assessed through formal examinations but assessment of coursework and practical and theoretical project work is the main vehicle for assessment of the higher order skills. A variety of assessment methods are used, including formal reports, essays, and oral poster presentations.

D. Other skills relevant to employability and personal development

The successful student will be able to

- D1. Communicate effectively with clients, users and developers
- D2. Learn and work independently and as part of a team
- D3. Operate within an ethical and legal framework appropriate to computing professionals.
- D4. Plan, perform, manage and report on a relevant project
- D5. Identify and set personal goals relevant to long-term educational and career planning

Teaching and Learning Methods

The development of essential communication and transferable skills begins at induction and in The Computing Challenge module at the start of the first year. It is continued in the Systems Analysis and Database Design module. Computer Systems and Security considers ethical, social and legal aspects of computer systems and their use. Teamwork and communication skills and legal and ethical understanding are further developed in The Agile Professional module at level 5 and in context in other modules through tutorial/seminar work and coursework assignments.

A major individual project, supported by supervisory meetings, reinforces and extends the student's abilities: they research topics relevant to their project, write a paper summarising and evaluating their findings, plan and monitor their progress, solve problems and write an extended report. Teamwork is developed in the The Agile Professional module. Relevant notations are introduced through tutorial and practical work using appropriate tools.

Assessment methods

These skills are assessed through written coursework in many modules, but particularly the Professional Skills team project and the final year individual project, where students write an academic article and a project report, are interviewed, and give a poster presentation.

13. Programme Structures*				14. Awards and Credits*
Level	Module Code	Module Title	Credit rating	
Level 6	CO3301	Games Development 2	20	Bachelor Honours Degree Requires 360 credits excluding CO2802 but including a minimum of 220 at Level 5 or above and 100 at Level 6 Bachelor Degree Requires 320 credits excluding CO2802 but including a minimum of 200 at Level 5 or above and 60 at Level 6
	CO3303	Maths and Technology for Games	20	
	CO3402	Object Oriented Methods in Computing	20	
	CO3808	Honours Degree Project	40	
	CO2509 CO3717	Options Mobile Computing Games for the Internet	20 20	
Level 5	CO2802	Only for a Sandwich award Industrial Placement Year	120	Students who successfully complete CO2802, Industrial Placement Year, in addition to meeting the requirements of the award, will have the award "in sandwich mode"
Level 5	CO2301	Games Development 1	20	HE Diploma Requires 240 credits including a minimum of 100 at Level 5 or above
	CO2401	Software Development	20	
	CO2402	Advanced Programming	20	
	CO2403	The Agile Professional	20	
	CO2409	Computer Graphics	20	
	CO2412	Computational Thinking	20	
Level 4	CO1111	The Computing Challenge	20	HE Certificate in Computing Requires 120 credits at Level 4 or above
	CO1301	Games Concepts	20	
	CO1404	Introduction to Programming	10	
	CO1401	Programming	10	
	CO1507	Introduction to Networking	20	
	CO1605	Systems Analysis and Database Design	20	
	CO1508	Computer Systems and Security	20	
Level 3*	COC001	Introduction to Software Development	20	Students who exit after successful completion of 120 credits at Level 3 will receive a transcript of the modules and grades
	COC002	Investigating IT	20	
	COC003	Problem-solving for Computing	20	
	COC004	Study Skills 1 – Learning How to Learn	20	
	COC005	Study Skills 2 – Developing Academic Skills	20	
	COC006	Introduction to Mathematical Methods	20	
* Only taken by Foundation Year Entry students				
15. Personal Development Planning				
Students are introduced to Personal Development Planning (PDP) during induction at the start of the first year. Following an introductory lecture, students conduct PDP activities with their personal tutors. Students' assessments of their own skills are used to guide team selection for the team challenge provided by The Computing Challenge module. Further work is done in during the following 4 weeks				

of this module through meetings with the first year tutorial team. Students are encouraged to audit their skills; set goals and produce a Progress Plan. In a progression meeting students consider matching their skills to their target Degree course.

At the start of the second year, students are told about the benefits of undertaking a placement and the work needed to find one. There are presentations by returning placement students. Other PDP activities involve meetings with their course leader. These sessions help students to identify their skills, use the feedback they have received on assessment performance, consider their long-term goals and identify the personal development necessary to succeed on the course and find relevant employment. Students also develop a CV and are involved in other employability activities during the Agile Professional Module.

At the start of the third year, students are reminded of the support provided by the careers service and undertake activities to ensure they have started thinking about their future career or future studies.

Academic advisors are a key point of contact for students and ensure they take advantage of the available opportunities. They help students review the experiences and skills they gain while at university. They guide students to sources of help and advice where required. Problems identified by academic staff are followed up very quickly by academic advisors, who can help the students to identify issues and decide appropriate actions.

16. Admissions criteria

Programme Specifications include minimum entry requirements, including academic qualifications, together with appropriate experience and skills required for entry to study. These criteria may be expressed as a range rather than a specific grade. Amendments to entry requirements may have been made after these documents were published and you should consult the University's website for the most up to date information.

Students will be informed of their personal minimum entry criteria in their offer letter.

112 UCAS tariff points at A2 or BTEC National Diploma (Distinction Merit Merit)
AND

5 GCSEs at grade C or above including Maths and English.

Students whose first language is not English must achieve an IELTS 6.0 (with no component score less than 5.)

Foundation Entry:

**80 UCAS tariff points at A2 or BTEC National Diploma (Merit Merit Pass)
5 GCSEs at grade C or above including Maths and English.**

Qualifications equivalent to the above are acceptable

17. Key sources of information about the programme

- **University Web Site (<http://www.uclan.ac.uk/>)**
- **Course Fact Sheets**

18. Curriculum Skills Map - BSc(Hons) Computer Games Development

Please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed

Level	Module Code	Module Title	Core (C), Compulsory (COMP) or Option (O)	Programme Learning Outcomes																					
				Knowledge and understanding				Subject-specific Skills							Thinking Skills				Other skills relevant to employability and personal development						
				A1	A2	A3	A4	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D1	D2	D3	D4	D5		
LEVEL 6	CO3301	Games Development 2	COMP	✓		✓			✓	✓	✓	✓			✓	✓	✓	✓			✓		✓		
	CO3303	Maths and Technology for Games	COMP	✓		✓		✓	✓	✓	✓	✓					✓	✓							
	CO3402	Object Oriented Methods in Computing	COMP	✓		✓											✓	✓							
	CO3717	Games for the Internet	O	✓				✓		✓	✓			✓				✓			✓	✓			
	CO3808	Honours Degree Project	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LEVEL 5	CO2301	Games Development 1	COMP			✓			✓	✓	✓	✓					✓	✓							
	CO2401	Software Development	COMP	✓	✓			✓									✓	✓							
	CO2402	Advanced Programming	COMP	✓				✓				✓						✓							
	CO2403	The Agile Professional	COMP	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	
	CO2409	Computer Graphics	COMP	✓	✓	✓			✓	✓	✓	✓	✓	✓				✓							
	CO2509	Mobile Computing	O	✓		✓		✓	✓		✓							✓	✓						
	CO2412	Computational Thinking	COMP	✓	✓			✓	✓							✓	✓	✓	✓	✓	✓		✓		
CO2802	Industrial Placement Year	O	✓	✓	✓	✓	✓	✓		✓							✓	✓	✓	✓	✓	✓	✓		
LEVEL 4	CO1301	Games Concepts	COMP			✓	✓		✓	✓	✓	✓		✓		✓		✓							
	CO1404	Introduction to Programming	COMP	✓				✓				✓						✓							
	CO1401	Programming	COMP	✓				✓				✓						✓							
	CO1507	Introduction to Networking	COMP	✓				✓										✓							
	CO1111	The Computing Challenge	COMP	✓			✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	CO1605	Systems Analysis and Database Design	COMP	✓			✓	✓	✓		✓				✓	✓	✓	✓	✓	✓	✓				
	CO1508	Computer Systems and Security	COMP	✓			✓	✓			✓				✓	✓	✓	✓	✓	✓	✓		✓		

19. LEARNING OUTCOMES FOR EXIT AWARDS:

For **each exit award available**, list learning outcomes relating to the knowledge and understanding, subject specific skills, thinking, other skills relevant to employability and personal development that a typical student might be expected to gain as a result of successfully completing each level of a course of study.

Learning outcomes for the award of: BSc Computer Games Development

- A1. Explain, evaluate and apply techniques and methods to solve a range of computing problems
- A2. Evaluate and apply project management tools and techniques
- B1. Solve technical and human problems relating to the development of software
- B2. Select and use appropriate analysis, design and implementation methods, languages and tools to develop usable software.
- C1. Locate, evaluate and integrate information from multiple sources
- C2. Analyse and solve problems considering technical and relevant commercial issues
- D1. Communicate effectively with clients, users and developers, using informal and formal techniques
- D2. Learn and work independently and as part of a team

Learning outcomes for the award of: DipHE Computer Games Development

- A1. Explain and apply techniques and methods to solve a range of computing problems
- A2. Apply project management tools and techniques
- B1. Solve technical and human problems relating to the development of software
- B2. Specify and write software
- C1. Locate and use information from multiple sources
- D1. Communicate with clients, users and developers, using informal and semi-formal techniques
- D2. Learn and work independently and as part of a team

Learning outcomes for the award of: CertHE Computing

- A1. Explain and apply techniques and methods to solve a range of computing problems
- A2. Describe key features of operating systems and networked IT systems.
- B1. Design and implement simple software with an appropriate user interface
- B2. Analyse an IT system and propose appropriate security considering legal and ethical issues.
- C1. Analyse and solve problems
- C2. Locate and use relevant information
- D1. Communicate with clients, users and developers, using simple techniques
- D2. Work independently and as part of a team

8.2 Succeeding at Assessment

There are guidelines for succeeding at assessments. Those who are unaware of these or who decide to ignore them will be at a disadvantage.

a) Do what you are asked to

When an assignment or examination question is set, the lecturer will have a good idea of what is necessary to answer it properly. You will normally be asked to do several tasks and be given guidance on the relative worth of each. Read carefully what is required and attempt every part but do not spend too much time on components of little worth.

b) Think of the person who will evaluate your work

Ensure that your work is well-organised and easy to mark. Don't use fancy folders that take five minutes to undo. Be concise and stick to the point. Try to demonstrate that even if you haven't time to complete the assignment tasks you do understand what is required.

c) Pace yourself

Equipment and staff are always harder to find as deadlines approach. You will save yourself time and effort if you start assignments early and don't let them pile up. If you leave work until the last minute, it will be hurried and will contain silly errors. Use an assessment timetable to plan and monitor your work - and complain to a lecturer who is late in giving out assignments!

d) Obey the rules

Read the assessment regulations carefully. Ensure that something is handed in on time. Even if you haven't managed to spend sufficient time on a piece of work or if you feel that you have misunderstood what is required, your attempt may show the lecturer where you need help.

e) Be sensible

Make sure you have done the preparatory work before you tackle relevant parts of the assignment. There are likely to be practicals on relevant material: do them. If you find them difficult or don't understand them, discuss them with the relevant tutor.

If an assignment seems very difficult or to require a very long time, discuss it with the lecturer to make sure you understand what is required.

f) Prepare properly for examinations

Everyone worries before exams, it's natural – a combination of a fear of the unknown and concern over the consequence of failure. However, you can increase your confidence by preparing properly.

1. **Use past papers** – they are available in each module's page on the University's Elearn Blackboard learning environment. Sometimes very similar questions will appear on your examination. At least they will give you a good idea of what the lecturer expects. The best use of past examination questions is to provide a focus for your revision. It may be useful to refer to them during the year as topics are covered.
2. **Keep up during the year** – revision does not mean "learning from scratch". Try to review your lecture notes at the end of each week and highlight any areas you don't understand. Find out about these immediately.

3. **Make a revision timetable** – allocate each subject roughly a fair share of time and try to stick to it. Don't make it too ambitious - you will need time to go out and relax. Joint revision with a few friends can be more pleasant, but beware of believing they understand the material any better than you do.
4. **Tackle the examination sensibly** – don't panic: if you are finding it difficult, so are other people. Make sure you have all the relevant equipment. Read the paper carefully, especially the "rubric" that specifies the number of questions you must answer and any restrictions on them. Plan to use the available time appropriately: allow equal time if the questions are allocated equal marks. Make sure you attempt and hand-in the full number of questions required, even if you think your answer to one question is poor. It's much easier to convert 0/20 to 5/20 than it is to convert 15/20 to 20/20.
5. **Choose your questions carefully** and ensure that you answer the question that is set, not the one you wish had been set.
6. **Present your answers thoughtfully** – make them easy to mark. Write clearly, but don't waste time on excessive neatness, for example, cross out rather than using liquid paper. Aim at quality not quantity. Don't try to save paper.
7. If you are running out of time, **use notes to show how you would have answered the question.**
8. **If your mind goes completely blank, move to another question,** or try to think of related topics or try to picture the relevant lecture notes.
9. **Don't waste time on post-mortems after the examination.**
10. **Be aware of hints given by lecturers** - the lecturer may indicate whether a particular subject is important (i.e. likely to appear on the examination) or what you are expected to know about a subject.
11. **Find out the consequences of failure** - normally if the worst comes to the worst and you fail an examination, you will be given a chance to resit another examination in that module at a later date

8.3 Coping With Difficulties

Will I be able to cope with the course?

We have a lot of experience of teaching computing to people from all sorts of backgrounds. Support is designed into the course for those who need it. For example, there are support sessions for Maths and Programming and you are encouraged to take advantage of these if necessary. Lecturers publish times when you can speak to them about your progress or discuss problems that you are having.

We have accepted you on this course because we believe you have the potential to succeed. Of course, to realise that potential, you must remain well motivated and work steadily throughout the year. Remember that you should do about 200 hours of work per module.

What if I have a disability

If you have a disability that may affect your studies, please let one of the course team know as soon as possible. We will make reasonable adjustments to accommodate your needs and to provide appropriate support for you to complete your study successfully. Where necessary, you will be asked for evidence to help identify appropriate adjustments.

What if my part-time work is interfering with my course?

Everyone is aware that many students have to work to support themselves, but you must decide whether the extra money is worth any risk to your studies. Work of 8-10 hours a week is unlikely to cause significant problems, providing that you are well organised. Much longer hours on a regular basis may affect your chance of success. If you have major financial problems, you should seek expert advice, possibly starting with the Students' Union or the "i". In the long term, it may be better to switch to a part-time route, to give you more time to work.

I am a part-time student, what if work interferes with my studies?

Make sure that you don't take too many modules. You can take up to four modules in a year, but four modules is a heavy workload on top of a full-time job. A smaller number of modules per year over a longer period may lead to a better degree. If you provide evidence that work is particularly intense, we may be able to arrange extensions to coursework.

What if I have problems?

If you have a problem with a particular piece of equipment or with installing software, ask a technician or LIS Customer support (01772 895355, or internal extension x5355, email LISCustomerSupport@uclan.ac.uk or in person in the Library) for help.

If you encounter problems with an assignment, seek help from the relevant lecturer. Discussing the problem with your friends may help, but make sure that any work handed in for an assignment is really your own. **Copying someone else's work is cheating and such cases are treated very seriously.** In the unlikely event that you cannot do the coursework even with advice from the lecturer, your notes and the library, hand in whatever you have done and then learn from the lecturer's comments.

There are many sources of help and support for general problems (e.g. your Academic Advisor or The "i" in Foster Building). Talk to someone: the relevant lecturer if it is a problem with a particular module, or your Course Leader or Academic Advisor if it is of a more general nature. Student Services have specially trained counsellors who can give advice on a wide range of personal problems. The sooner we are aware of the problem, the sooner we can help or advise you on the options available to you.

If there are circumstances beyond your control that affect your performance, tell the Module Leader as soon as possible. If a short extension or other action is appropriate, you should get documentary evidence and submit it in a special "Extenuating Circumstances"

envelope obtainable from the School Office. Where appropriate, we will take action during the year to alleviate genuine and significant extenuating circumstances. At the end of the year the Assessment Board will take these circumstances into account where appropriate. Deadlines for submitting extenuating circumstances are listed on the back of the envelope.

What if it all goes wrong?

To pass a year, full-time students must pass or be condoned in 6 modules. If, after resits, you don't manage to do this, you may be able to take the failed modules as a part-time student, or to repeat the year as a full-time student. Obviously, these options have financial implications, so you should discuss them with your family and other relevant people e.g. the Student Union Advisory Service or the University Academic Advisor.

Getting Help and Advice

Your lecturers will be able to help you with problems in their subject. Each lecturer is available for consultation. Their availability may be displayed outside the lecturer's office, or as part of their email signature). Do not be afraid to use this time.

Teaching staff will help you with software relating to their modules in practical classes. Staff in the library can provide additional information about the available software on the main computers. They can help you with problems you may have in using the computers. If you have technical problems with machines in the School, please email liscustomersupport@uclan.ac.uk with the following information

Room Number

Equipment Number e.g. 4738 or other identifier if no equipment number

Brief description of the fault

If the fault has affected your coursework, include a copy of the email in the coursework submission.

Other students will often help you with minor problems and can be a great help if used sensibly. They may be able to explain concepts or help with non-assessed practical work. However, don't assume that a student who sounds knowledgeable really does know better than you and do not copy assessed work. The work you hand in for assignments must be your own unless the assignment asks for group work. If other students are experiencing similar problems, you or your **Student Representative** should gather information and discuss it with the relevant lecturer. If problems persist, the first year tutor or, if the problems are serious, the Head of School may be able to sort them out.

Your academic advisor, course leader, or year tutor (year 1) are a good source of advice. The <i> and the Student Union Advice Centre have a lot of experience of helping students tackle a wide range of problems.