



<b>Programme Specification</b>
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<b>1</b>	<b>Awarding Institution/Body</b>	Leeds City College						
<b>2</b>	<b>Delivery Location(s)</b>	<i>University Centre</i>						
<b>3</b>	<b>Programme Externally Accredited by (e.g. PSRB)</b>							
<b>4</b>	<b>Award Title(s)</b>	<i>Foundation Degree Software Development</i>						
<b>5</b>	<b>FHEQ Level</b> <i>[see guidance]</i>	5						
<b>6</b>	<b>Bologna Cycle</b> <i>[see guidance]</i>	<i>Short cycle</i>						
<b>7</b>	<b>HECoS Code and Description</b>	100366 Computer Science The study of the design and application of electronic computer systems, including computer architectures, software and systems design.						
<b>8</b>	<b>Mode of Attendance</b> <i>[full-time or part-time]</i>	<i>Full-Time or Part-Time</i>						
<b>9</b>	<b>Relevant QAA Subject Benchmarking Group(s)</b>	Computing 2019 Foundation Degree September 2015 National Occupational Standards: Technical Evaluation Level 5 Role - URN: ESKITP7125						
<b>10</b>	<b>Relevant Additional External Reference Points</b> <i>(e.g. National Occupational Standards, PSRB Standards)</i>							
<b>11</b>	<b>Date of Approval/ Revision</b>	2020 28/06/2021						
<b>12</b>	<b>Criteria for Admission to the Programme (select the appropriate Entry Criteria for the award and remove the others)</b>  <p style="text-align: center;"><b><u>Foundation Degree Entry Criteria</u></b> <b><u>(text in red to be used where applicable)</u></b></p> <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 35%; text-align: center;">Typical offer</th> <th style="width: 35%; text-align: center;">Minimum Offer</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"><b>A Levels:</b></td> <td style="text-align: center;">2xD grades</td> <td style="text-align: center;">1xE grade</td> </tr> </tbody> </table>			Typical offer	Minimum Offer	<b>A Levels:</b>	2xD grades	1xE grade
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<b>A Levels:</b>	2xD grades	1xE grade						

<b>BTEC L3 Diploma or Extended Diploma:</b>	MP, MPP grade	PP, PPP grade or a Subsidiary Diploma with an E grade
<b>Access to HE Diploma:</b>	Overall pass with 60 credits, with 24 credits to be at a Merit grade	Overall pass with 60 credits
<b>GCSE English: Desirable but not essential</b>	English Language Grade C or above (grade 4 for those sitting their GCSE from 2017 onwards). Key Skills Level 2, Functional Skills Level 2 and the Certificate in Adult Literacy are accepted in place of GCSEs.	
<b>GCSE Maths:</b>	Maths Grade C or above (grade 4 for those sitting their GCSE from 2017 onwards). Key Skills Level 2, Functional Skills Level 2 and the Certificate in Adult Numeracy are accepted in place of GCSEs.	
<b>IELTS:</b>	IELTS 6.0 with no less than 5.5 in any component.	
<b>International qualifications:</b>	International qualifications will be assessed against these criteria	
<b>Mature applicants:</b>	Leeds City College welcomes applications from mature* applicants who may not have met the academic criteria, but who can demonstrate a wealth of experience in their chosen field. Candidates in this category and otherwise are likely to be interviewed to assess their suitability for the course and may be asked to provide a portfolio of evidence to support their application. <i>*21 years and over at the start of the course</i>	
<b>RPL claims:</b>	The course structure actively supports claims for Recognition of Prior Certified Learning (RPCL) or Recognition of Prior Experiential Learning (RPEL)	

<b>13</b>	<p><b>Educational Aims of the Programme</b></p> <p>The overall aims of the programme are to:</p> <ul style="list-style-type: none"> <li>● Provide a comprehensive and challenging vocational programme in Software Development, including core and specialist modules, which facilitate access and progression for a wide range of students from diverse backgrounds into various computer/digital industry contexts.</li> <li>● Offer a robust Foundation Degree programme that is relevant to current practice in the Software Development industry that will allow students to be autonomous and progress onto their chosen trajectory.</li> <li>● Produce graduates who have the ability to critically reflect and learn from their practical and academic experience in a computing context and relate this experience to relevant theory.</li> <li>● Produce graduates who have both subject specific skills (expressive, creative, technical) and transferable skills (communication, teamwork, project management) which are key to being employable within the computing/digital industry.</li> <li>● Produce graduates with entrepreneurial ability relevant to the Software Development industry</li> <li>● Produce graduates who have an analytical and reflective understanding of Software Development and wider digital subjects in the context of the workplace today and in relation to the wider social and cultural environment.</li> </ul>
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14	<b>Learning Outcomes</b> The programme will enable students to develop the knowledge and skills listed below. On successful completion of the programme, the student will be able to:
	<b>Knowledge and Understanding</b> <i>(insert additional rows as necessary)</i>
	<b>K1</b> Evaluate the relevant theories, concepts and principles applicable to software development
	<b>K2</b> Identify and use appropriate research methods in the context of software development
	<b>K3</b> Evaluate the legal and ethical issues and the expectations of users in relation to computing practice
	<b>Cognitive/Intellectual Skills</b> <i>(insert additional rows as necessary)</i>
	<b>C1</b> Apply problem solving and solution-based methodologies to Software Development
	<b>C2</b> Analyse, interpret and use data from a variety of sources
	<b>C3</b> Use balanced and logical arguments to resolve given questions, scenarios and case studies
	<b>C4</b> Select appropriate tools and techniques for the development and implementation of software solutions
	<b>Practical/Professional Skills</b> <i>(insert additional rows as necessary)</i>
	<b>P1</b> Apply a range of practical skills in the context of software development
	<b>P2</b> Develop usable solutions using appropriate software, programming languages and/or design concepts
	<b>P3</b> Effectively integrate a range of practical computing techniques
	<b>P4</b> Integrate the expectation of users and appreciation of legal and ethical issues when developing a computing solution
	<b>Key Transferable Skills</b> <i>(insert additional rows as necessary)</i>
	<b>T1</b> Reflect systematically on your approach and performance to further develop learning.
	<b>T2</b> Act with increasing autonomy with reduced need for supervision and direction, within defined guidelines
	<b>T3</b> Communicate accurately using a range of communication methods appropriate to the context
	<b>T4</b> Demonstrate creativity, innovation and independent thinking
15	<p><b>Key Learning &amp; Teaching Strategy and Methods</b> The learning and teaching strategy and methods employed throughout the course are designed to support students in meeting the learning outcomes by offering a range of opportunities, including individual and group practical and research projects, written and oral forms of presentation and the creation of software development work.</p> <p>Software Development engages with a wide range of teaching methods: practical workshops, lectures, seminars, large and small group discussion and presentations, it is, therefore, inclusive for a variety of learning styles.</p> <p>Each module states a range of learning and teaching methods used for its delivery.</p> <p>Teaching and Learning strategies will include lectures, one to one and group discussions. Individual consultations will underpin each module where such things as guidance on writing and presenting an effective brief and project proposals will be covered, as well as practical support.</p> <p>The programme will provide support to allow students to work autonomously, with structured guidance from lecturers, project or task milestones will be agreed to track progress to support the transition to working more autonomously, especially at Level 4.</p> <p>Guidance on working towards recognised industry practice will be provided through real world case studies. The simulation of industry practice will be embedded in the programme to develop</p>

independent working processes and approaches through the development of viable Software Development projects and theoretical analysis and application.

Lectures, practical demonstrations and discussion will be delivered that are pertinent to the particular module. Guidance on research procedures and methodologies will be embedded alongside academic skills development to ensure students written work is up to the acceptable academic standards expected at this level of study.

One to one tutorials will be used to provide guidance and practical support to produce working Software Development projects and prototypes to professional standards and encourages the realisation of a range of practical skills in Software Development. Individual and small group consultations will be utilised to develop wider contextual understanding of how small teams of developers produce computing solutions in a range of contexts, through devising and developing practical projects.

A range of formative and summative assessment strategies that will include, questioning, open ended questions, brainstorming, presentations, production diaries, work logs, observations, self-assessment, group discussion, peer assessment, questionnaires, reflective practice.

#### **e-learning strategy**

The programme will incorporate the use of Google Classroom where module resources will be uploaded. Students will be able to access all materials on or off-site, this will enable students to better fit their learning around their lifestyles and manage other commitments.

Using google classroom will allow staff to employ a range of tools to enhance the learning experience and will include online discussions, tutorial videos, links to module specific online video and podcasts

All assignments will be set in google classroom and students will upload their final submissions to google classroom or via turnitin for written submissions. The methods and platform of submission will be clearly stated and reinforced in each module handbook and during delivery of that module.

Staff can engage with students outside of class using google classroom to provide a broader range of support for students. This will also include a learning community via a Facebook group where students can engage with one another to help, support and share resources.

#### **Work Related Learning and Personal Development**

There are no requirements for a formalised work placement but the programme has a focus on preparing students for work in the Software Development industry. This is done mainly through the simulation of industry working practices. Students are encouraged to work collaboratively in specified modules at L4 and L5, forming small development teams that are reflective of the makeup of real-world development teams.

Hackathons, Code Clubs and Game Jams are also a focus on the course and students will take part in a number of these events at L4 and L5 of the programme. These will provide Software Development students with the opportunity to broaden their skills base and potential employment routes. There are a number of external Game Jams that students will take part in, the global Game Jam for example, a weekend long global competition where students will work towards developing a rapidly developed prototype based on a given theme.

The programme endeavours to develop students with an enthusiasm for enquiry into their discipline and the motivation to sustain it. Currently this happens in many guises, the practical focus of the

	<p>course is key to student buy in, as is the development of a collaborative atmosphere. Students are encouraged to use out of class time to socially interact through playing games, code clubs and hackathons within the University Centre to maintain enthusiasm for the subject.</p> <p>Employability is embedded in to the programme and this will be underpinned with the development of an online portfolio and also through a scheme of visiting lecturers and industry practitioners who will provide insight and also portfolio advice, guidance and critique where appropriate.</p> <p>The employability module will provide the opportunity to develop a broad range of employability skills, often pitched as “soft Skills”. These will include the ability to think creatively, work individually or as part of a team, strategic thinking, plan and prepare budgets, chair and contribute to meeting, positive work ethic with good punctuality, excellent written and verbal communication skills.</p> <p>Wider technical employability skills are embedded in practical modules that will reflect industry practice as closely as possible. There is also group/small team projects that are designed to simulate industry practice in the development of team based business solutions that will focus on solving identified problems with a technical solution relevant to the discipline.</p> <p>There is also opportunity for interdisciplinary work to take place with collaboration between Computer Games students a possibility. The L5 project module is also part of the Computer Games courses and is planned to at the same time as the project module on the Computing courses.</p>
16	<p><b>Key Assessment Strategy and Methods</b></p> <p>Employability is built into the programme in core modules. Future employment is entrenched within the programme and practical modules are very much focused on the development of professional portfolio pieces that can support progression in to employment.</p> <p>Wider technical employability skills are embedded in practical modules, the assessments have been selected to reflect industry practice. These projects will focus on solving identified business problems with a technical solution that is relevant to the specific programme discipline.</p> <p>Small team projects have been designed to simulate industry practice in the development of team-based business solutions. Identifying roles and undertaking these roles in a team setting are essential skills and key to the overall teaching strategy, in respect of preparing students for employment.</p> <p>There is also opportunity for interdisciplinary work to take place with collaboration between Computer Games students a possibility. The L5 project module is also part of the Computer Games courses and is planned to at the same time as the project module on the Computing courses.</p> <p>A broad range of skills and knowledge are needed in the Software Development and digital sectors and assessments are tailored to the particular task being undertaken. Assessed tasks include the development of computing solutions for real-world problems, the application of theory to problem solving and practical problems, team work, project work and the communication of ideas and concepts through reports and presentations. The assessment of these tasks are guided by programme and module learning outcomes.</p> <p>Each module will have two assessment components. Programme learning outcomes will be assessed twice giving ample opportunity for students to meet the specified learning outcomes of each task and will also ensure that module learning outcomes are only assessed once.</p>

Assignments tasks will be managed across the academic year ensuring there is sufficient time between assessments to support the completion of the programme.

The course promotes independent learning through the promotion of CPD when learning new software and when researching and applying new theories and concepts. Students are encouraged to adopt an analytical approach to their engagement with Software Development, transitioning from user to developer and analyst by applying a critical eye to key computing skills development and independently applying new found approaches to their own computing solutions and concepts. Greater autonomy is expected as students move from L4 to L5 of the programme and this is supported through the exploration, experimentation, development and application of key theories and practice in their coursework.

Formative assessments usually carry no weighting but are critical for the student's development and can be useful preparation for the related summative assessment. Formative assessment can take the form of a group or individual critique, and informal peer assessment through peer group discussions.

Formative assessment is a part of the individual tutorial system, featured in every module, and feedback is given verbally or in written format depending on the module. Each assessment is aligned with its intended learning outcomes and learning activities, so it is clear what is being assessed.

Formative assessment is a key feature of the first year and will be the focus of group tutorials during the induction period to familiarise students with the formative feedback strategy.

Summative feedback will be given in written format using standard programme feedback forms. The feedback will discuss the final grade decision and how it was reached and also offer feedforward style feedback that will identify areas for improvement and suggest approaches that can be adopted in future assessments. This will help students to identify areas for improvement, and of current strengths which are to be developed.

All feedback will be presented in line with the institution's policy ensuring timely feedback is given to students for each assessment.

17	<b>Programme Modules</b>						
	<b>Level</b>						
	<b>Code</b>	<b>Title</b>	<b>Credits</b>	<b>Core/ Option</b>	<b>Non- Compensatable</b>	<b>Compensatable</b>	<b>Variance</b>
		Networks	20	Core		Yes	
		Principles of Cyber Security	20	Core		Yes	
		Principles of Databases	20	Core		Yes	
		Principles of Programming	20	Core		Yes	
		Professional Development	20	Core		Yes	
		Web and Apps	20	Core		Yes	
	<b>Level 5</b>						
	<b>Code</b>	<b>Title</b>	<b>Credits</b>	<b>Core/ Option</b>	<b>Non- Compensatable</b>	<b>Compensatable</b>	<b>Variance</b>
		Advanced Web Development	20	Core		Yes	
		Mobile App Development	20	Core		Yes	
		Employability Skills	20	Core		Yes	
		Software Testing	20	Core		Yes	
	Software Development	20	Core		Yes		
	Project	20	Core		Yes		

## Programme Structure

**Software Development Full-Time**

Level 4				
<b>Semester One</b>	<b>Principles of Programming</b> (20 Credits)	<b>Web and Apps</b> (20 Credits)	<b>Networks</b> (20 Credits)	<b>Professional Development</b> (20 Credits)
<b>Semester Two</b>		<b>Principles of Databases</b> (20 Credits)	<b>Principles of Cyber Security</b> (20 Credits)	

Level 5			
<b>Semester One</b>	<b>Software Development</b> (20 Credits)	<b>Advanced Web Development</b> (20 Credits)	<b>Employability Skills</b> (20 Credits)
<b>Semester Two</b>	<b>Mobile App Development</b> (20 Credits)	<b>Software Testing</b> (20 Credits)	<b>Project</b> (20 Credits)

**Software Development Part-Time**

Level 4				
<b>Year One</b>		<b>Web and Apps</b> (20 Credits)	<b>Networks</b> (20 Credits)	<b>Professional Development</b> (20 Credits)
<b>Year Two</b>	<b>Principles of Programming</b> (20 Credits)	<b>Principles of Databases</b>	<b>Principles of Cyber Security</b> (20 Credits)	

Level 5			
<b>Semester One</b>	<b>Software Development</b> (20 Credits)	<b>Advanced Web Development</b> (20 Credits)	<b>Employability Skills</b> (20 Credits)
<b>Semester Two</b>	<b>Mobile App Development</b> (20 Credits)	<b>Software Testing</b> (20 Credits)	<b>Project</b> (20 Credits)

The Foundation Degree is awarded on successful completion of both level 4 and level 5 of the award.

The course is full-time, students studying on the foundation degree full time will attend college for 2 days per week. Students, alongside core modules will have a tutorial which will have a study support theme.

The Part-time option will see students attend college for 1 day per week over 4 years.



	<p>At Level 4 all modules are delivered in either semester 1 or semester 2 with the exception of Principles of Programming which is delivered across both semesters. This will ensure that skills are developed sequentially and will be enhanced over the academic year. For example, in semester 1, the mark-up programming language used in the Web and Apps module will introduce students to writing code that will inform and underpin skills they will be developing in the Principles of Programming module. This will also ensure that skills in semester one will feed in to modules in semester two. In addition, having the Networks module in the first semester will provide the network infrastructure knowledge to better understand the principles of Cyber Security in respect of ensuring networks are not vulnerable to attack.</p> <p>At Level 5 all modules are delivered in either semester 1 or semester 2. The sequence of modules is designed to provide the practical tools in one module that will be used in the proceeding module. For example, the skills learnt in software development will be further developed and applied in the software testing module. Thus, providing further opportunity to implement programming and debugging skills developed in software development in a different context.</p>
19	<p><b>Apprenticeships</b> N/A</p>
20	<p><b>Support for Students and Their Learning</b> The award adopts the following approach to student learning support.</p> <ul style="list-style-type: none"> <li>● Tailored induction to support the transition in to Higher Education</li> <li>● A robust communications system functions to give students access to lecturers and management; this includes e-mail, the VLE and notice boards and open office policy.</li> <li>● All necessary information about the programme is provided by means of the student handbook, module handbooks and the VLE.</li> <li>● Each student is allocated a personal tutor for regular tutorials and personal development planning. This is implemented in the first term and continued throughout the year of study.</li> <li>● Formative submissions outlined in course scheme of work and formative feedback given for each module component.</li> <li>● Practical work supported by regular peer feedback through workshop critiques.</li> <li>● Shared documents and folders between staff and students to support live editing and feedback on work.</li> <li>● There is an extensive range of learning resources in the Library, supported by specialist staff that provide bespoke study skills sessions for students.</li> <li>● The University Centre provides an extensive range of services for students, including support for those with special needs, welfare, counselling, financial and careers advice</li> <li>● There are a range of student services such as welfare, counselling, financial and careers advice.</li> <li>● Employability embedded throughout the programme</li> </ul> <p>Students will be given a Chromebook or an equivalently priced laptop if they prefer when they start the course. There will be an option for students to upgrade this to a more powerful laptop if they agree to pay a supplement that will make up the difference in the cost of a Chromebook and the more powerful laptop. This cost will be reviewed yearly to</p>

	<p>reflect the changes in cost of devices year on year. The Chromebook or laptop will be required to last students the full duration of the course.</p> <p>The department has a coaching tutor employed to support students and their learning. The coaching tutor will provide support in academic, technical and personal settings. The coaching tutor will also support students with deadlines, applying for short extension and mitigation and will also track and chase low attendance and engagement.</p> <p>Personal tutorials will be carried out by the coaching tutor, these meetings will provide regular one to one support. Discussions will be logged and shared with module tutors to identify potential problems but to also highlight and share praise for excellent performance on module tasks.</p> <p>The coaching tutor will act as the go to person for support. This will provide consistency for students with a clearly support staff who will get to know the students and their individual support needs.</p>
<p><b>21</b></p>	<p><b>Distinctive Features</b></p> <p>The newly formed Digital and Engineering department is uniquely positioned to offer excellent opportunities to students on our programmes. The provision in the department includes, Computing, Computer Games and Engineering programmes. This pack of courses offers exciting opportunities for collaborative work between students and staff.</p> <p>The cross over between the different disciplines outlined are numerous. The aim of the programmes is to have cross collaboration across all levels. Examples of the opportunities are to have Computing students who will have computer programming skills to work with Game Development students who will have 3D modelling and game level design skills, the potential outcomes are fully working prototype games.</p> <p>The Engineering industry are requiring more digital skills in manufacturing, automation and 3D product visualisations. Computing tutors are fully skilled in the topics of 3D modelling and could port these skills in to Computer Aided Design. Engineering staff could deliver Maths and Science based topics to Software Development students.</p> <p>These staff skills and knowledge place the department in a unique position to deliver modern programmes that are reflective of industry needs and practices.</p> <p>All courses are delivered on the same floor with teaching spaces that will easily facilitate collaborative opportunities.</p> <p>There are shared modules at both L4 and L5 on the Computing and Computer Games programmes to further facilitate collaborative opportunities. Timetables will be synchronised to support these opportunities.</p> <p>The focus of the programme is preparing students for a career in the computing and digital sector, either as a self-employed practitioner or as an employee of an SME or large-scale company. There is an overall emphasis on work related learning that reflects industry practice. Work related progression is the focus of two modules (Professional Development and Employability) with the aim of developing professionalism and preparing graduates for the world of employment in the sector.</p>

The first year of the course is designed to provide a range of principle skills that are broadly required across the computing and digital sectors.

The institution currently offers computing and digital related studies from Level 1 to level 6, this supports students who develop better in a familiar environment with staff they know to achieve their full potential in a supportive environment.

A focus of the programme is the development of practical skills that will form the foundation of a varied portfolio and are a valuable resource to demonstrate practical experience to employers.

There is also a focus on developing personal and employability skills that are fast becoming required by employers in addition to practical skills. These skills often termed as “soft Skills” are embedded in the programme and as also in modules at level 4 and level 5.

There is a strong teaching team with links to industry that brings opportunity to students and the provision of real experience of working within the industry is embedded throughout the programme through simulation of practice and a series of guest lectures.

The department has a good working relationship with the institution’s ITSS department, who have provided advice and guidance on module content. The ITSS department are also open to providing 2<sup>nd</sup> year students with the opportunity of short-term voluntary work experience. This is not a requirement of the course in terms of assessment and achievement but is encouraged if students have the time to fit work experience around course, home and personal commitments.

#### **The differences between Software Development and Web and Mobile Apps Articulated**

Software development refers to a set of activities dedicated to the process of creating, designing, deploying and supporting software. Software development is primarily conducted by programmers, software engineers and software developers.

Programmers write source code to program computers for specific tasks. Programmers typically interpret instructions from software developers and use programming languages like C++ or Java to carry them out. Software engineers apply engineering principles to build software and systems to solve problems. Software developers have a less formal role than engineers and can be closely involved with specific project areas — including writing code. At the same time, they drive the overall software development lifecycle — including working across functional teams to transform requirements into features, managing development teams and processes, and conducting software testing and maintenance.

The modules developed for the Software development course give will give the students the skills to gain employment in any of the above roles.

Web development is the work involved in developing a website for the Internet (World Wide Web) or an intranet (a private network). Web development can range from developing a simple single static page of plain text to complex web-based internet applications (web apps). Web development may include web engineering, web design, web content development, client liaison, client-side/server-side scripting, and e-commerce development. In the current market place, many apps and websites need to be accessed, or even be standalone, on mobile devices.

The modules developed for the web and mobile apps module will give the students the skills set and knowledge to gain employment in the above identified roles.

The two courses share a couple of modules due to the overlap of the skillsets required. Software developers will need to have a working knowledge of HTML and server-side scripting to cover the requirements to distribute programmes or connect and search databases over a local network, including via mobile app.

The two modules that overlap are: Advanced Web which concentrates on the server-side scripting and connection with databases across networks and the internet; and Mobile Application Development which covers the aspects of the mobile development. These will be required in both disciplines in the IT industry.

The courses differ by incorporating two modules that are specific for to the role: the software development course has a module concentrating on testing, a very large area in the discipline, and a software project that incorporates all the stages of the development life cycle and also the management of the project; the web & mobile application course has modules on digital asset production which will enhance the knowledge of website content, design, and development, and also has a module concentrating on the user experience and user interface, a crucial part of developing the front end of a system to be deployed over a network or mobile infrastructure.

Both courses have a similar skillset but at the same time have core differences in the disciplines. We have addressed these by sharing the common elements and then including key modules that will enhance the students' employability in their chosen discipline.

### Stage Outcomes (Undergraduate Awards only)

No.	Programme Outcome	Stage/Level 4(1)
<b>K1</b>	Evaluate the relevant theories, concepts and principles applicable to software development	Describe and discuss concepts and principles applicable to software development
<b>K2</b>	Identify and use appropriate research methods in the context of Software Development	Use appropriate research methods in the context of software development
<b>K3</b>	Evaluate the legal and ethical issues and the expectations of users in relation to computing practice	Describe key legal and ethical issues and the expectation of users in relation to computing practice.
No.	Programme Outcome	Stage/Level 4(1)
<b>C1</b>	Apply problem solving and solution-based methodologies to software development	Use problem solving and solution-based methodologies to software development
<b>C2</b>	Analyse, interpret and use data from a variety of sources	Use data from a variety of appropriate sources in defined contexts
<b>C3</b>	Use balanced and logical arguments to resolve given questions, scenarios and case studies	Resolve given questions, scenarios and case studies
<b>C4</b>	Select appropriate tools and techniques for the development and implementation of software solutions	Use tools and techniques for the development and implementation of software solutions
No.	Programme Outcome	Stage/Level 4(1)
<b>P1</b>	Apply a range of practical skills in the context of software development	Demonstrate practical skills in the context of software development
<b>P2</b>	Develop usable solutions using appropriate software, programming languages and/or design concepts	Apply solutions using appropriate software, programming languages and/or design concepts in defined contexts
<b>P3</b>	Effectively integrate a range of practical computing techniques	Integrate a range of practical computing techniques
<b>P4</b>	Integrate the expectation of users and appreciation of legal and ethical issues when developing a computing solution	Appreciate the expectations of users and legal and ethical issues when developing a computing solution
No.	Programme Outcome	Stage/Level 4(1)
<b>T1</b>	Reflect systematically on your approach and performance to further develop learning.	Identify your own strengths and weaknesses to develop learning
<b>T2</b>	Act with increasing autonomy with reduced need for supervision and direction, within defined guidelines	Act with limited autonomy with reduced need for supervision and direction, within clearly defined contexts

<b>T3</b>	Communicate accurately using a range of communication methods appropriate to the context	Use a range of communication methods appropriate to the context
<b>T4</b>	Demonstrate creativity, innovation and independent thinking	Demonstrate creativity within clearly defined contexts

**Key:** K = Knowledge and Understanding C = Cognitive and Intellectual P = Practical Professional T = Key Transferable  
[see Section 16 programme specification]

## Map of Outcomes to Modules

Level 4															
Module Titles	Outcome Key														
	K1	K2	K3	C1	C2	C3	C4	P1	P2	P3	P4	T1	T2	T3	T4
Principles of Programming		✓			✓	✓			✓						✓
Web and Apps				✓				✓	✓			✓	✓		
Principles of Databases		✓			✓	✓				✓	✓				
Networks	✓						✓	✓					✓		
Principles of Cyber Security	✓		✓	✓						✓	✓			✓	
Professional Development			✓				✓					✓		✓	✓

Level 5															
Module Titles	Outcome Key														
	K1	K2	K3	C1	C2	C3	C4	P1	P2	P3	P4	T1	T2	T3	T4
Software Development	✓					✓			✓						✓
Mobile App Development	✓			✓	✓				✓	✓			✓		
Advanced Web Development				✓	✓	✓		✓			✓				
Software Testing			✓				✓			✓		✓			✓
Employability Skills		✓					✓					✓		✓	
Project		✓	✓					✓			✓		✓	✓	

Map of Teaching and Learning Methods

Level 4

Module Titles	Methods								
	Lectures	Student led/ interactive/ shared learning seminars	Case Studies	Skills workshops	Practical's (design and production sessions)	Group activities	Guest speakers	Independent / E Learning/ On-line forums	(insert other)
Principles of Programming	✓	✓	✓	✓	✓			✓	
Web and Apps	✓	✓		✓	✓			✓	
Principles of Databases	✓	✓			✓			✓	
Networks	✓	✓	✓		✓	✓	✓	✓	
Principles of Cyber Security	✓	✓			✓		✓	✓	
Professional Development	✓	✓	✓		✓			✓	



### Level 5

Module Titles	Methods							
	Lectures	Student led/ interactive/ shared learning seminars	Case Studies	Skills workshops	Practical's (design and production sessions)	Group activities	Guest speakers	Independent / E Learning/ On- line forums
Software Development	✓	✓	✓	✓	✓			✓
Mobile App Development	✓	✓		✓	✓			✓
Advanced Web Development	✓	✓			✓			✓
Software Testing	✓	✓			✓	✓	✓	✓
Employability Skills	✓	✓	✓	✓			✓	✓
Project	✓	✓	✓		✓	✓		✓

### Map of Assessment Methods

### Level 4

Module Titles	Methods					
	Report	Programming Portfolio	Practical	Evaluation	Presentation	Evaluative Response
Principles of Programming	40% (1200 Words) Wk 29	60% (1800 Words) Wk 27				
Web and Apps			70% (2100 Words) WK 13	30% (900 Words) WK 14		
Principles of Databases			70% (2100 Words) WK 28	30% (900 Words) WK 29		
Networks	30% (900 Words) Wk 9		70% (2100 Words) Wk 15			

Principles of Cyber Security	60% (1800 Words) Wk 24		40% (1200 Words) Wk 30			
Professional Development					40% (1200 Words) Wk 17	60% (1800 Words) Wk 26

### Level 5

Module Titles	Methods							
	Report	Programming Portfolio	Practical	Portfolio of Testing and Deployment	Case Study	Interview and Pitch	Practical Project	Reflection
Software Development	30% (1200 Words) Wk 11	70% (2800 Words) Wk 15						
Mobile App Development	30% (1200 Words) Wk 22	70% (2800 Words) Wk 29						
Advanced Web Development	30% (1200 Words) Wk 12		70% (2800 Words) Wk 14					
Software Testing	30% (1200 Words) Wk 23			70% (2800 Words) Wk 27				
Employability Skills					40% (1600 Words) Wk 10	60% (2400 Words) Wk 13		
Project							70% (2800 Words) Wk 28	30% (1200 Words) Wk 30