

Validation Document

1	Title of Programme	Computer Software Solutions
2	Award (e.g. FdA, FdSc)	FdSc
3	Contained Award	Certificate of HE for successful completion of 120 credits at Level 4
4	UCAS code (if applicable)	CDS1
5	HECOS codes	100366 – 50% 100358 – 50%
6	Mode of Study (full and/or part-time)	Full-time
7	Duration (total number of years)	2 years
8	Number of weeks per academic year	31 Each Trimester consists of 8 weeks of module delivery. Trimester 1 has an extra week in which students are prepared for study at the new level. There are 6 assessment weeks.
9	Accrediting Professional / Statutory Body (if applicable)	n/a
10	Location of delivery	Scarborough TEC
11	Faculty	Automotive, Construction, Computing and Engineering
12	Entry requirements	

Standard offer

Standard entry requirement for the foundation degree will be 80 UCAS points, with a minimum of grade C/4 in GCSE or equivalent qualification in English and Maths.

Non-standard offer

The TEC Partnership will also encourage applications from non-traditional learners who lack formal academic qualifications for the standard entry route. All non-traditional applicants will be assessed through an interview assessing their overall capability for the subject matter as well as current academic skills, set an appropriate piece of work (a practical task involving numeracy and literacy or a portfolio of relevant work), a judgement is then made considering their academic potential and relevant experience and skills. For example, a person may not have a background in Computing, but have excellent problem solving and logical abilities and have a desire to change careers through training. In line with a strengths-based approach to widening participation, students without direct experience will be offered extra support and will also benefit from regular tutorials with the Programme Leader so that they feel they are fully supported during their educational journey.

Student transfers and accreditation of prior learning

The TEC Partnership encourages student transfers from other institutions. Applicants may be admitted with credit for prior certificated learning (APCL) or work/life experience or other uncertificated learning

(APeL). Please refer to the [HE07 Admissions, Admissions Appeals and APEL Admissions, Admissions Appeals and Accreditation of Prior Learning \(Transfers\)](#).

International admissions

The TEC Partnership recognises a wide range of entry qualifications as being equivalent to A level standard; if students hold a qualification not listed above please contact the TEC Partnership's Admissions Team on +44 (0) 1472 311222 ext. 434.

International students must evidence they possess a satisfactory command of the English language in terms of reading, writing, listening and are expected to have achieved Level B2 on the Common European Framework of Reference for Language (CEFR), as defined by UK Visas and Immigration

13	Minimum number of students required for the programme to run	8
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14	Degree classification weighting
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The degree classification is awarded based on the average percentage mark achieved at level 5 of the degree.

15	Aims of the programme and distinctive features/fit with existing provision
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Creating computer-based solutions can be inventive, elegant and rewarding. Taking a problem from a client or business then designing and producing a solution is not only professionally satisfying but in high demand in all areas of business, locally, nationally and across the world.

Our FdSc in Computer Software Solutions is distinctive as it allows you to become a comprehensive and employable professional by developing three areas:

- technical skills in designing and building software solutions
- interpersonal skills including building professional relationships and pitching ideas
- methodologies to be able to approach new languages and platforms with confidence.

This programme includes practical skills in programming, web design, mobile app development, database design and human-computer interaction. Alongside hands-on experience, you will learn the theories and methodologies which will allow you to adapt your skills to different systems so you are not restricted to a particular language or software. Having gained broad experience in your first year, you will then have the opportunity to apply this to a range of substantial projects in your second, giving you the scope to apply your skills and specialise in one or more area, culminating in a large-scale independent project.

Each trimester you will study a practical unit where you will learn or apply skills to create a solution and a fundamental unit which underpins the theory upon which you can work with organisations and develop solutions. In Year 1 (Level 4) you will learn practical skills in programming (using high level language), website development, mobile app creation, database development and human-computer interaction (HCI) design. In conjunction you will learn how to approach problem solving in business situations, being able to analyse complex issues, and the knowledge and transferable skills you need to be a professional in this industry. In Year 2 (Level 5) you will apply your skills to develop client and business-based solutions to meet their needs, and also produce a final large-scale project. As well, you will study how to manage large projects and teams, and critically analyse emergent technology by understanding its history.

A graduate from this programme will have an exciting portfolio of work demonstrating a range of skills in a number of disciplines and be employment-ready with expert skills in at least one particular chosen field such as programming, app development or database design. They will have worked to client briefs, developing interpersonal skills and have a professional approach valued in the industry. Although they will have developed in particular languages, software and platforms, they will also have gained methodological knowledge to be able to approach unfamiliar systems with confidence and the skills to learn and will see problems as opportunities for solutions.

At Scarborough TEC, this programme is part of the Yorkshire and Humber Institute of Technology and you will have access to cutting edge technology, industry-standard software and brand new, contemporary facilities for independent and collaborative study and social spaces dedicated for our HE students.

Our collegiate approach means you will be part of our HE family, with small group sizes, one-to-one tutor support and a culture which encourages time and space for reflection, self-development and collaboration.

Aims

1. To practice and develop a range of technical skills in designing and implementing solutions, aiming for competence, confidence and expertise to meet contemporary industry and educational expectations.
2. Deliver a curriculum which allows students to understand and appreciate the whole process from problem to solution in a cyclical manner, providing opportunities for developing practical skills, creativity, personal autonomy and critical reflection.
3. Develop a solution-focused approach to situations and challenges found in the real-world and nurture a desire to provide clients with high-quality solutions.
4. Cultivate interpersonal skills including communication skills and professionalism, with the ability to pitch ideas and build positive working relationships.
5. Provide experience and insight into the real-world of Computing through a teaching team of industry practitioners who actively create rigorous and robust links within the Computing industry both local and further afield.

Work Related Activity/Live Client Projects

When developing skills, knowledge and behaviours in this field, work related activity is an integral part of contributing to a student's knowledge and understanding of industry requirements and contextual appreciation. There is a wealth of large and medium self-employed practitioners within the area who would be in support of this area of learning, both those directly in the industry and those not in the industry but needing a computer-based solution. We are grateful for the involvement of industry experts in the development of this programme to ensure it is suitable to produce employment-ready professionals.

To provide a diverse and realistic range of development and project work, live client projects will be used with underpinning theory embedded and applied. These could be provided by the college or sourced by students as appropriate. Live client briefs will be used whenever possible, allowing opportunities for the client to be involved throughout the project and students to develop interpersonal skills. Where not available or practical, client briefs will be simulated and based on real-world scenarios with inherent complexity and curiosity.

16 Programme Learning Outcomes <i>Upon successful completion of this programme a student will be able to...</i>		
	Programme Learning Outcome	Subject Benchmark Reference
1	Demonstrate the application of logic and problem solving in a range of abstract and real-world situations, including those different to the original context of learning, applying critical thinking and being solution-focused.	QAA Computing 2019 - 3.1.1, 3.1.2, 3.1.3, 3.3 i, 3.3 iii, 3.3 viii, 3.4 i, 3.4 v, 3.5 ii, 6.3 iii, 6.3 iv, 6.5 iii, 6.5 iv
2	Exhibit knowledge and critical understanding of the fundamental principles of Computing, particularly with regard to programming and manipulation of data.	QAA Computing 2019 - 3.1.2, 3.3 i, 3.3 ii, 3.3 iii, 3.4 vi, 3.5 ii, 6.3 i, 6.3 ii, 6.5 i, 6.5 ii
3	Analyse and respond to a client brief with contextual awareness, analysing the risks and constraints and critically evaluating the appropriateness of different approaches.	QAA Computing 2019 - 3.1.1, 3.1.2, 3.1.3, 3.3 i, 3.3 iii, 3.3 iv, 3.3 v, 3.4 i, 3.4 ii, 3.4 iv, 6.3 iii, 6.3 iv, 6.5 iii, 6.5 iv
4	Make a persuasive case for a chosen solution or range of options, develop positive relationships with others and exhibit professionalism through interpersonal skills.	QAA Computing 2019 - 3.1.2, 3.1.3, 3.5 ii, 3.5 iii, 3.5 iv, 3.5 vi, 6.5 iii, 6.5 iv
5	Specify and design reliable, secure and usable computer-based solutions, using a range of established techniques to initiate and undertake critical analysis and design.	QAA Computing 2019 - 3.1.1, 3.1.2, 3.1.3, 3.3 iii, 3.3 iv, 3.3 vi, 3.4 i, 6.3 ii, 6.5 ii
6	Construct solutions to problems from designs and document them using specific languages and platforms, demonstrating methodological understanding to approach unfamiliar systems.	QAA Computing 2019 - 3.1.1, 3.3 iv, 3.3 vii, 3.4 i, 3.4 v, 3.5 ii, 3.5 iii, 6.3 iii, 6.5 iii, 6.5 iv
7	Understand, apply and evaluate using reflective practice and a range of test solutions in order to maintain, improve and redevelop the output.	QAA Computing 2019 - 3.3 vi, 3.4 ii, 3.5 iii, 3.5 iv, 6.3 iii, 6.5 iv, 6.7 iii
8	Understand, use and critically evaluate a variety of design and implementation methodologies, being able to select appropriately for different scenarios.	QAA Computing 2019 - 3.1.3, 3.3 iv, 3.3 vii
9	Explore, recognise and act upon professional considerations, including economic, societal, environmental, sustainability, moral and ethical issues.	QAA Computing 2019 - 3.1.3, 3.3 viii, 3.5 vi, 3.5 vii, 6.3 vi, 6.5 vi
10	Work independently and with others demonstrating self-management, personal responsibility and decision-making, appreciating how limitations of knowledge and skills may impact a solution.	QAA Computing 2019 - 3.1.3, 3.4 iii, 3.5 ii, 3.5 iii, 3.5 iv, 3.5 v
11	Critically evaluate emergent and future developments in Computing using knowledge of the history and culture of Computing.	QAA Computing 2019 - 3.3 vi, 3.3 viii, 3.5 vi, 3.5 vii
12	Employ study skills and research with planning, precision and timeliness, and critically evaluate the results, using them to influence or embedding them into products appropriately and demonstrating conventional academic standards and study skills.	QAA Computing 2019 - 3.3 viii, 3.5 ii

The crux of teaching and learning on this programme is, at its heart, a vocational course with the aim of creating employment-ready professionals. Students will learn theoretical and academic components in order to embed them into the main core of practical learning.

Learning will be in practical workshops and seminars, most of which will take place in purpose-built Computing labs, with breakout spaces available for design and collaborative working.

As students may begin this programme at different levels of knowledge and experience, teaching and learning must give all students a sound foundation of skills, adjusting any misconceptions and ensuring all sessions are valuable, interesting and driving learning forward.

Level 4 will focus on developing students' breadth of skills, knowledge and behaviours in a range of technical areas, with level 5 then deepening this knowledge, culminating in an Applied Project. At level 4 students will practice skills on a small scale and implement them in prototype projects where they will build a partial solution to demonstrate skills and competence. At level 5, learning will build further, and students will be able to create more detailed projects, solving more complex and curious problems in client briefs. In the final project, students can draw together all of their learning from across the programme and produce a large-scale project demonstrating their technical, academic and interpersonal skills.

Study skills and academic writing are included in both level 4 and level 5, discretely in specific modules and embedded throughout the programme. The aim is for students to become increasingly competent in self-management, organisation, decision-making and professional responsibility. For those who wish to continue to level 6, academic skills are woven through the programme to allow preparation to progress to this step. The use of self-directed study and independent learning will be essential to all levels, with tutors guiding and assisting self-directed learning, dependent on the level of the student. The virtual learning environment (VLE) is used widely to encourage self-directed study and also supports collaboration and discussion, and there is an expectation that students will engage in online learning.

Throughout this programme students will be creating a variety of experimental and complete solutions for a professional portfolio which can be used towards their career, whether freelance or for employment interviews in the future.

There are a wide range of transferable skills that students will develop during the course of this programme such as researching, time managing, presentation skills, ability to work within a group and individually, presentation of self, professional standards and professional qualities when working with clients. These methods are both taught explicitly and embedded into all modules within this programme.

18 Programme Structure				
Module Title	Core/ Option	Credits	Level	Delivery T1/T2/T3
Principles of Programming	C	20	4	T1
Professional Studies	C	20	4	T1/2
Logic and Problem Solving	C	20	4	T1/2
Web Development	C	20	4	T2
Systems Analysis and Database Design	C	20	4	T3
Software Engineering and Human Computer Interaction	C	20	4	T3
Object-Oriented Programming	C	20	5	T1
Mobile App Development	C	20	5	T1
Database Development and Management	C	20	5	T1/2
The History and Future of Technology	C	20	5	T2
Applied Project	C	40	5	T2/3

19 References used in designing the programme	
QAA Computing (2019)	
20 Indicators of quality and standards	
<p>The programme will follow the QA standards of the TEC Partnership and has been written with reference to appropriate external reference points.</p> <p>QAA reviews will be published and any weaknesses addressed as appropriate. The TEC Partnership also undertakes a number of scheduled internal periodic and thematic reviews throughout each academic year to assure itself of the quality and standards of its provision.</p> <p>External Examiners' reports are received by the HE Quality Office and a copy forwarded to the relevant School. The TEC Partnership requires action plans to be created for any actions recommended as a result of student, tutor, moderator or External Examiner comments. These are reported to the relevant HE Management Committee. The TEC Partnership also monitors External Examiners' reports and these are reported on through faculty self-evaluation and enhancement documents, the TEC Partnership's quality enhancement report and the External Examiner's institutional analysis report.</p> <p>Annual Monitoring Reviews (AMRs) will take place in line with the requirements of the TEC Partnership and actions planned to rectify any weaknesses and further develop the quality of the provision. These</p>	

AMRs are moderated internally by the Curriculum Manager and then submitted to the HE Quality Department to ensure key sources such as External Examiners' reports are fully reflected upon before being published and also to reduce variability in the quality of information presented.

21 Particular support for learning

The needs of disabled learners are taken into account in the design of all learning programmes.

Students will be screened at induction to identify those with individual learning support needs. The TEC Partnership has well-established procedures in place to support all identified students through the application and assessments for the Disabled Students' Allowance to secure any specialist equipment or tuition which is required.

Students will also be invited in for advice and support through the DSA procedure.

Each student is entitled to one tutorial per trimester with the Programme Leader to discuss individual issues relating to both modules and the programme overall.

In addition to study skills embedded in the programme, students have access to further support through workshops and tutorials in the development of their study skill abilities, such as support towards use of ICT, giving presentations, using formal writing and appropriate academic conventions, avoiding plagiarism, analytical and critical writing skills.

22 Methods for evaluating and improving the quality of learning

All students will have the opportunity to comment on the quality of the learning experience on each module. Staff will also be expected to complete module evaluations for each module that they deliver. This feedback must be analysed by the Module Leader and the results fed into the annual monitoring report, faculty self-evaluation document and subsequent year's module handbook. Programme and Module Leaders must give consideration to modification to improve the delivery of any module and this should be recorded in the annual monitoring report and carried forward for minor or major modifications as appropriate.

The TEC Partnership's policy requires that all teaching staff should be observed delivering learning at least annually. Teaching and learning that does not reach the minimum expected standard will result in an action plan agreed between the line manager and the member of staff.

Student satisfaction is measured by student surveys on larger courses, on the smaller courses student opinion may be gathered by other survey means. Student representatives are invited to course team meetings and additionally have the opportunity to raise items with the Course Leader at individual meetings outside the Course Team.

At Scarborough TEC, each programme has a nominated Student Representative who can take part in regular HE focus groups with members of the HE Team. They are also invited to regular whole college focus groups with the College Senior Management Team. From both, actions are agreed with students and staff which are monitored by the Admin Team and impact is measured by the Student Services and HE Teams, with further actions agreed where applicable.

Students have been involved in the design of this programme including the topics of modules, assessment methods and structure of the programme. They have also contributed to the selection of the computer equipment for our Institute of Technology HE learning and study spaces.

23	Identify any ethical issues that relate to this programme's teaching and assessment	
<p>As with all Computing programmes, students will be dealing with data and they must have an appreciation of the importance of data to an individual and to organisations. This includes having an understanding of legal implications such as GDPR and consider the ethical issues of having access and control of sensitive and important data. Similarly, any work for clients must be handled with professionalism and never be a threat to their competitive position and confidentiality.</p>		
24	Is the Work Based or Work Related?	Work Related
25	How are WBL/WRL opportunities managed, monitored and reviewed, and what particular arrangements are there for student support?	
<p>Work related learning will be managed through the use of real-world client briefs. These will be managed by tutors to ensure they are appropriate, give students the opportunity to fulfil academic criteria as well as learn valuable technical skills, and that they are of appropriate size to be achievable in the timeframe available. The tutor will monitor relationships and communication with clients, regularly discussing progress with students and clients. The client-based projects will be reviewed annually to ensure all briefs are still valid and to find different clients where appropriate. Where real-world client briefs are not available or practical, briefs will be simulated and based on real-world scenarios, ensuring they have the same level of complexity as when working with real-world clients and aiming to make them equally as interesting. As well as learning valuable technical skills, it is important that they are of appropriate size to be achievable in the timeframe available. The tutor will monitor relationships and communications with clients, regularly discussing progress with students and clients. The client-based projects will be reviewed annually to ensure all briefs are still valid and to find different clients where appropriate.</p>		
26	Resources Supplied to the Student	
<ul style="list-style-type: none"> • A suite of high specification Windows computers with a <u>minimum</u> of: <ul style="list-style-type: none"> ○ Intel i5/dual-core/1.6Ghz, with an i7/quad-core/2.2GHz recommended (or equivalent) ○ 8Gb RAM, with 16Gb recommended ○ 256Gb storage space, with 512Gb recommended ○ Dedicated graphics card with GPU ○ 1920x1080 resolution display at least a 15" monitor, with 20" or larger recommended • Installed and updated software with a <u>minimum</u> of: <ul style="list-style-type: none"> ○ Windows 10 ○ Microsoft Office including Access and Project ○ Visual Studio ○ Adobe suite including Muse and Photoshop ○ A software development kit (SDK) for Apple or Android ○ A range of web browsers (with Java installed) 		
27	Resources needed to pass the programme	
<p>The resources needed to pass this programme will be provided at college.</p>		
28	Revision History	
Version	Details of major modification	Date of approval
1		

2		
3		
4		
5		

Curriculum Map																		
Key	Work – State WB or WR or blank Comp = Compensatable Y or N											P = Partially achieved Learning Outcome F = Fully achieved Learning Outcome						
Module name	Level	Work	Module Leader	Assessment and Weighting	Comp	1	2	3	4	5	6	7	8	9	10	11	12	
Principles of Programming	4	-	David Marshall	Report (40%), Portfolio (60%)	N	P	P	P			P	P		P	P			
Professional Studies	4	-	Richard Uttley	Essay (75%), Presentation (25%)	N				P					P	P	P	P	
Logic and Problem Solving	4	-	David Marshall	Essay (50%), Project (50%)	N	P	P								P		P	
Web Development	4	WR	Keith Dykes	Portfolio (40%), Prototype Project (60%)	Y		P	P	P	P	P	P		P	P			
Systems Analysis and Database Design	4	WR	Richard Uttley	Portfolio (40%), Prototype Project (60%)	N		P	P	P	P	P	P	P	P	P			
Software Engineering and Human Computer Interaction	4	-	Richard Uttley	Essay (50%), Presentation (50%)	Y		P			P			P	P	P	P	P	
Object-Oriented programming	5	WR	Richard Uttley	Portfolio (40%), Project (60%)	N	F	F	F	F	F	F	F	F		F			
Mobile App Development	5	WR	Keith Dykes	Portfolio (40%), Project (60%)	Y	F		F	F	F	F	F	F	F	F			
Database Development and Management	5	WR	David Marshall	Portfolio (40%), Project (60%)	N	F	F	F		F	F	F		F	F	F		
The History and Future of Technology	5	-	David Marshall	Essay (50%), Presentation (50%)	Y				F					F	F	F	F	
Applied Project	5	WR	Richard Uttley	Analysis and Design (35%) Implementation, Testing and Documentation (50%) Evaluation and Reflection (15%)	N	F		F	F	F	F	F	F		F		F	