

# Staffordshire University Programme Specification

<b>Programme Title:</b>	FdSc Computer Science (Technical)
<b>Final Award(s):</b>	FdSc Computer Science (Technical)* FdSc Computer Science (Software Development) FdSc Computer Science (Software Tester) FdSc Computer Science (Digital Accessibility Specialist) FdSc Computer Science (Network Engineer) FdSc Computer Science (Cyber Security Technologist) FdSc Computer Science (Data Analyst) FdSc Computer Science (Business Analyst)
<b>Intermediate Award(s):</b>	CertHE Computer Science (Technical)
<b>Awarding Institution(s):</b>	Staffordshire University
<b>Teaching Institution(s):</b>	Staffordshire University London Digital Institute
<b>Site(s) of Delivery:</b>	London
<b>QAA Subject Benchmark(s):</b>	Computing Benchmark 2016
<b>Academic Year of Entry:</b>	September 2022
<b>Date:</b>	10/12/20
<b>Date of Revision:</b>	07/12/21

*\*Non-specialism pathway final award*

<b>Approval dates</b>	<b>Site(s) of Delivery:</b>
<b>Programme Instance(s):</b>	Staffordshire University London Digital Institute
Full-time	<i>Sept 2022</i>
Part-time	<i>Sept 2022</i>

## Objectives of this Programme

### FdSc Computer Science Programme

- To provide a foundation degree level Computer Science education which is relevant, rich in skills development, and at the forefront of knowledge.
- To provide applied technical and learning progression routes for those who have completed aligned Level 3 programs of study such as T Levels and other aligned subjects with practically focused post-16 curricula.
- To ensure knowledge, skills and behaviours, that map to specific occupational standards, are attainable for students in order that career and employability opportunities against specific roles are embedded.
- To enable, at Level 5, specialisms in software development, digital accessibility, networking, cyber security, and data related subjects as a specific study pathway (or to study more broadly if preferred).
- To enable the development of individual interests in the field of Computer Science in order to support a future career path.
- To produce graduates who have proficiency in several programming languages and system design methods and techniques, and who can apply their skills in different areas of the computing industry.
- To provide an enriched learning experience which will support and facilitate personal, academic and professional development throughout the period of study, laying the foundation for life-long learning and continuing professional development after graduation.
- To equip students with skills and understanding to support employability, enterprise and entrepreneurship, within the context of globalisation.

In addition to the above, pathway specialisms (occupational standards) will cover:

### FdSc Computer Science (Technical)

- To provide a flexible course that encompasses multiple subject areas of the computer science discipline, enabling the study of wide-ranging computing related topics. This route does not attract HTQ quality mark as it does not align to a particular occupational standard.

### FdSc Computer Science (Software Development)

- To produce Software Engineering graduates who are practiced in the complete software development lifecycle.
- To develop theoretical and practical skills to create robust, large-scale systems that are engineered software solutions to real world problems.

#### **FdSc Computer Science (Software Tester)**

- To produce graduates with the required skills to apply both manual methods and automated testing to a range of software applications.
- To equip students with the knowledge to both design and cost a testing process to a range of software systems.

#### **FdSc Computer Science (Digital Accessibility Specialist)**

- To produce graduates who can manage and apply web technologies to a variety of applications for several different devices and can create and convert media and content to make it suitable and useable for any web or mobile delivery.
- To produce graduates that understand and appreciate the latest web standards, and understand the importance of the user, accessibility, and usability.

#### **FdSc Computer Science (Network Engineer)**

- To develop graduates with a detailed understanding of network communications specialising fully in computer networks, communication and computer security.
- To enable students to specialise and become expert in lead networking vendor technologies such as Amazon AWS, Juniper, and CISCO.

#### **FdSc Computer Science (Cyber Security Technologist)**

- To provide students with a solid grounding in Cyber Security fundamentals which will equip them with the underpinning skills needed to progress in a chosen Cyber Security field.
- To develop knowledge in networking, software security and ethical hacking.

#### **FdSc Computer Science (Data Analyst)**

- To produce graduates who have proficiency in several data capture, analysis and modelling tools.
- To equip students with the required knowledge to apply industry standard system design methods and techniques to large scale projects.

#### **FdSc Computer Science (Business Analyst)**

- To equip students with skills to analyse a range of computing-based business systems.
- To provide students a balanced grounding in both computing fundamentals and their fit to business applications.

## What is distinctive about this programme?

### **FdSc Computer Science**

The FdSc Computer Science degree follows national policy whereby digital and technical skills gaps in the marketplace are met. Courses that meet both students' and employers' needs and expectations with regards to the development of computing and digital skills in order to prepare students for current and future careers in Industry. To this end the FdSc is mapped to the latest competences and occupational standards to boost skills, knowledge and behaviours.

The FdSc Computer Science degree combines a solid grounding in Computer Science fundamentals with flexibility and choice at Level 5 to specialise in discipline pathways related to software development, software testing, digital accessibility design, networking, cyber security, and data related subjects. Pathways are a key strength of the course as students have the ability to choose modules to shape the final year (towards a subject discipline, or to opt to choose modules from several pathways so they have a wide coverage of Computer Science disciplines to give a broader focus to study).

Industry collaborations throughout the program of study with real world and live assessment briefs being co-created with industry partners will afford students the opportunity to explore technical developments as well as apply their knowledge and skills within work-related environments.

### **Level 5 specialisms**

**Software Development** – This route enables students to learn about programming, web scripting, web development, mobile device design, and the wider architecture of systems and software.

**Software Tester** – There is specialism development in programming, web development, testing automation, and the management process of large-scale system software testing.

**Digital Accessibility Specialist** – Students will become practiced in designing accessibility and user experience for a wide array of platforms, coupled with design and testing knowledge to create usable systems and interfaces.

**Network Engineer** – The study of modules related to cloud computing, virtualisation, network security, and routing and switching with CISCO and AWS technologies will give students a strong grounding within the discipline.

**Cyber Security Technologist** – Students will study both forensic and cyber aspects of the discipline through modules related to digital forensics, cyber operations, and ethical hacking.

**Data Analyst** – Data drives all walks of computing and this route has key focuses on data warehousing, Artificial Intelligence, and visualisation.

**Business Analyst** – In studying this route students will focus on business strategy, business intelligence, and requirements engineering.

In Level 5 for the Pathway Project module students will be able to tailor learning to their own interests and build strengths through selecting the specific study topic which will support their eventual career (they will negotiate with staff the specific topic, so they have full input into determining what they study). The choice of option modules in the second year of the course is very important and we therefore guide students to ensure they chose the right set of modules to map against a chosen career path.

The course offers a balance of practical skills combined with academic rigour. This is a unique offering which builds on the strengths and experience of Staffordshire University in delivering practical scholarship relevant to real world situations. Taking this approach, the course puts students at the forefront of leading-edge technologies, and this begins by providing a solid grounding of the underlying technologies and theories of Computer Science, before moving to advanced topics.

The course will prepare students to enter a range of employment roles related to the wider area of Computer Science, with that role depending on the option choices made during the course. Roles could include system analyst, programmer, web developer, cyber security specialist, and many more diverse roles.

We work closely with industry leaders such as Google, Amazon Web Services (AWS), CISCO, Airbus, Kaspersky, and Hamilton-Barnes to ensure the teaching curriculum remains up to date. Students will have the opportunity to take mini credentials on the course from the likes of Cisco, Amazon Web Services, Microsoft, and Adobe.

## Programme Outcomes

FdSc Computer Science (Technical) Level 4*		
University Outcome	Programme Outcome	Mapped Modules
Knowledge & Understanding	Demonstrate an understanding of Computer Science concepts, principles and technical knowledge through practical and theoretical application. <b>CRCS 1, 8, CRPS 1, 2, 5, GSE 4, 6</b>	<i>(note name abbreviations due to module codes not assigned)</i> BSDA, CANC
Learning	Develop lines of argument and evaluate possible practical and technical approaches, tools, techniques, platforms and solutions based on knowledge of underlying Computer Science concepts and principles. <b>CRCS 3, CRPS 4, 5, 6, GSE 2, 4, 5</b>	BSDA, CANC,
Enquiry	Find, evaluate, manage, apply, and understand information from a range of sources both from a theoretical and technical perspective. <b>CRCS 3, CRPS 3, GSE 2, 6</b>	ISD
Analysis	Discuss and evaluate arguments, assumptions, abstract concepts and data theoretically and by way of practical/technical application. <b>CRCS 3, CRPS 3, GSE 1, 2</b>	BSDA, ISD
Problem Solving	Develop appropriate questions and strategies to achieve a solution (or identify a range of solutions) to a Computer Science based problem with practical/technical demonstration. <b>CRCS 4, 5, 7, CRPS 4, 5, 6, GSE 5, 6</b>	BSDA, CANC, IS
Communication	Develop and communicate ideas, to explore problems and find solutions through a variety of methods including technical demonstration. <b>CRCS 5, 7, 8, CRPS 2, GSE 4, 5, 6</b>	BSDA, CANC
Application	Apply Computer Science concepts, principles and techniques, including those at the forefront of the discipline knowledge to computing problems theoretically and practically. <b>CRCS 1, 2, 3, 4, CRPS 1, 2, 3, GSE 2, 3, 4,</b>	BSDA, CANC, ISD
Reflection	Demonstrate an ability to reflect upon and evaluate theory. <b>CRCS 8, CRPS 3, GSE 3, 4, 5, 7</b>	ISD

*\*Non-specialism pathway intermediate award*

## FdSc Computer Science (Technical) Level 5

University Outcome	Programme Outcome	Mapped Modules
Knowledge & Understanding	Demonstrate, both practically and theoretically, knowledge to address ethical and legal issues, sustainability, risk and safety and the ways in which these impact organisations and user experience in computer science. <b>CRCS 3, 7, CRPS 2, 3, 4, GSE 6</b>	<i>(note name abbreviations due to module codes not assigned)</i> PProj, PP
Learning	Present the required skills to deal with uncertainty, ambiguity and limitations of knowledge in taking decisions in designing computer systems by way of practical/theoretical demonstration. <b>CRCS 3, CRPS 4, 5, GSE 2, 4, 5, 6</b>	PProj, PP
Enquiry	Learn to acknowledge the cultural, ethical, economic, legal, and social issues surrounding the use of information. <b>CRCS 3, CRPS 6, GSE 2, 6</b>	PProj, PP
Analysis	Work with data (that may be incomplete) to draw appropriate conclusions. <b>CRCS 8, CRPS 6, GSE 2, 6</b>	PProj, PP
Problem Solving	Solve Computer Science based problems that address issues and find solutions for scalability and security by means of practical/technical and theoretical demonstration. <b>CRCS 1, 2, 3, CRPS 1, 2, GSE 1, 2, 4</b>	PProj, PP
Communication	Communicate clear solutions to both specialist and non-specialist audiences in a variety of forms including practical/technical demonstration. <b>CRCS 3, 4, 5, CRPS 2, GSE 1, 2, 4</b>	PProj, PP
Application	Solve complex Computer Science based problems working within teams and industry simulated environments. <b>CRCS 4, 5, 6, 7, CRPS 4, 5, 6, GSE 4, 5, 6</b>	PProj, PP
Reflection	Solve complex ideas and apply critical reflection to tasks carried out. <b>CRCS 2, 6, CRPS 3, GSE 4, 5, 7</b>	PProj, PP

#### FdSc Computer Science (Software Development) Level 5

University Outcome	Programme Outcome	Mapped Modules
Knowledge & Understanding	Theoretically and practically, demonstrate knowledge to address ethical and legal issues, sustainability, risk and safety and the ways in which these impact organisations in the design of software applications (addressing the complete software development lifecycle). <b>CRCS 3, 7, CRPS 2, 3, 4, GSE 6</b>	<i>(note name abbreviations due to module codes not assigned)</i> WD, PProj, PP
Learning	Present the required skills to deal with uncertainty, ambiguity and limitations of knowledge in taking decisions in the design of software-based applications using both theoretical and practical skills. <b>CRCS 3, CRPS 4, 5, GSE 2, 4, 5, 6</b>	PProj, PP, WD, MAD
Enquiry	Learn to acknowledge the cultural, ethical, economic, legal, and social issues surrounding the use of information in large-scale systems. <b>CRCS 3, CRPS 6, GSE 2, 6</b>	PProj, PP
Analysis	Work with data (that may be incomplete) to draw appropriate conclusions to be used in the design of real-world software solutions.	PProj, PP



	<b>CRCS 8, CRPS 6, GSE 2, 6</b>	
Problem Solving	Analyse, document and implement software-based solutions to computer science problems by way of theoretical and practical/technical demonstration. <b>CRCS 1, 2, 3, CRPS 1, 2, GSE 1,2, 4</b>	PProj, PP, APID, SSD, MAD
Communication	Communicate clear solutions to both specialist and non-specialist audiences in a variety of forms including practical/technical demonstration. <b>CRCS 3, 4, 5, CRPS 2, GSE 1, 2, 4</b>	PProj, PP, APID, SSD, MAD
Application	Apply both methods and practical tools in the design of software-based solutions. <b>CRCS 4, 5, 6, 7, CRPS 4, 5, 6, GSE 4, 5, 6</b>	PProj, PP, APID, SSD, MAD
Reflection	Solve complex ideas and apply critical reflection to tasks carried out. <b>CRCS 2, 6, CRPS 3, GSE 4, 5, 7</b>	PProj, PP
<b>FdSc Computer Science (Software Tester) Level 5</b>		
<b>University Outcome</b>	<b>Programme Outcome</b>	<b>Mapped Modules</b>
Knowledge & Understanding	Practically and theoretically demonstrate knowledge to address ethical and legal issues, sustainability, risk and safety and the ways in which these impact organisations, also demonstrating the ability to create large scale software testing plans. <b>CRCS 3, 7, CRPS 2, 3, 4, GSE 6</b>	<i>(note name abbreviations due to module codes not assigned)</i> MST, TA, PProj, PP
Learning	Present the required skills to deal with uncertainty, ambiguity and limitations of knowledge in taking decisions in the design and testing of computer applications. <b>CRCS 3, CRPS 4, 5, GSE 2, 4, 5, 6</b>	PProj, PP, MST, TA
Enquiry	Learn to acknowledge the cultural, ethical, economic, legal, and social issues surrounding the use of information. <b>CRCS 3, CRPS 6, GSE 2, 6</b>	PProj, PP
Analysis	Work with data (that may be incomplete) to draw appropriate conclusions in order to be utilised in software testing cost models. <b>CRCS 8, CRPS 6, GSE 2, 6</b>	PProj, PP
Problem Solving	Design a full testing process to be applied to systems testing and show the knowledge to adjust test plans dynamically. <b>CRCS 1, 2, 3, CRPS 1, 2, GSE 1,2, 4</b>	PProj, PP, WD, APID
Communication	Communicate, both theoretically and practically, clear technical solutions to both specialist and non-specialist audiences in a variety of forms the process involved with manual and automated testing processes. <b>CRCS 3, 4, 5, CRPS 2, GSE 1, 2, 4</b>	PProj, PP, TA, MST
Application	Allocate personnel roles to a full-scale testing process design within a team-based setting. <b>CRCS 4, 5, 6, 7, CRPS 4, 5, 6, GSE 4, 5, 6</b>	PProj, PP, TA, MST
Reflection	Solve complex ideas and apply critical reflection to tasks carried out. <b>CRCS 2, 6, CRPS 3, GSE 4, 5, 7</b>	PProj, PP

<b>FdSc Computer Science (Digital Accessibility Specialist) Level 5</b>		
<b>University Outcome</b>	<b>Programme Outcome</b>	<b>Mapped Modules</b>
Knowledge & Understanding	Theoretically and technically demonstrate knowledge to address ethical and legal issues, sustainability, risk and safety and the ways in which these impact organisations in the design of application and web-based computing solutions to problems. <b>CRCS 3, 7, CRPS 2, 3, 4, GSE 6</b>	<i>(note name abbreviations due to module codes not assigned)</i> WD, AUE, IDT, PProj, PP
Learning	Both theoretically and practically, present the required skills to deal with uncertainty, ambiguity and limitations of knowledge in taking decisions in the design of interface-based solutions. <b>CRCS 3, CRPS 4, 5, GSE 2, 4, 5, 6</b>	PProj, PP, WD, MAD, WF
Enquiry	Learn to acknowledge the cultural, ethical, economic, legal, and social issues surrounding the use of information. <b>CRCS 3, CRPS 6, GSE 2, 6</b>	PProj, PP
Analysis	Work with data (that may be incomplete) to draw appropriate conclusions. <b>CRCS 8, CRPS 6, GSE 2, 6</b>	PProj, PP
Problem Solving	Analyse, document and implement both mobile and web-based solutions to computer science problems by way of theoretical and practical/technical demonstration. <b>CRCS 1, 2, 3, CRPS 1, 2, GSE 1, 2, 4</b>	PProj, PP, MAD, IDT
Communication	Both theoretically and practically, communicate clear solutions to both specialist and non-specialist audiences in a variety of forms of visual design formats used by both interface and web design specialists. <b>CRCS 3, 4, 5, CRPS 2, GSE 1, 2, 4</b>	PProj, PP, MAD, IDT, WF
Application	Apply both methods and practical tools in the design of programmed based solutions to problems. <b>CRCS 4, 5, 6, 7, CRPS 4, 5, 6, GSE 4, 5, 6</b>	PProj, PP, AUE
Reflection	Solve complex ideas and apply critical reflection to tasks carried out. <b>CRCS 2, 6, CRPS 3, GSE 4, 5, 7</b>	PProj, PP
<b>FdSc Computer Science (Network Engineer) Level 5</b>		
<b>University Outcome</b>	<b>Programme Outcome</b>	<b>Mapped Modules</b>
Knowledge & Understanding	Theoretically and practically demonstrate knowledge to address ethical and legal issues, sustainability, risk and safety and the ways in which these are addressed in the networking discipline. <b>CRCS 3, 7, CRPS 2, 3, 4, GSE 6</b>	<i>(note name abbreviations due to module codes not assigned)</i> PProj, PP, ARST, CA, VNS
Learning	Demonstrate a clear understanding of network communication infrastructures and their smaller components by theoretical and practical/technical means. <b>CRCS 3, CRPS 4, 5, GSE 2, 4, 5, 6</b>	PProj, PP, ARST, CA

Enquiry	Learn to acknowledge the cultural, ethical, economic, legal, and social issues surrounding the use of information. <b>CRCS 3, CRPS 6, GSE 2, 6</b>	PProj, PP
Analysis	Work with data (that may be incomplete) to draw appropriate conclusions. <b>CRCS 8, CRPS 6, GSE 2, 6</b>	PProj, PP
Problem Solving	Design practical networking solutions to problems that embody both networking and security disciplines. <b>CRCS 1, 2, 3, CRPS 1, 2, GSE 1,2, 4</b>	PProj, PP, VNS
Communication	Theoretically and practically communicate clear solutions to both specialist and non-specialist audiences in a variety of forms. <b>CRCS 3, 4, 5, CRPS 2, GSE 1, 2, 4</b>	PProj, PP
Application	Show the required knowledge to apply in context Amazon AWS, Juniper and CISCO technology to solve data loading problems. <b>CRCS 4, 5, 6, 7, CRPS 4, 5, 6, GSE 4, 5, 6</b>	PProj, PP, ARST, CA, VNS
Reflection	Solve complex ideas and apply critical reflection to tasks carried out. <b>CRCS 2, 6, CRPS 3, GSE 4, 5, 7</b>	PProj, PP

### FdSc Computer Science (Cyber Security Technologist) Level 5

University Outcome	Programme Outcome	Mapped Modules
Knowledge & Understanding	Practically and theoretically demonstrate knowledge to address ethical and legal issues, sustainability, risk and safety and the ways in which these relate to cyber security fundamentals. <b>CRCS 3, 7, CRPS 2, 3, 4, GSE 6</b>	<i>(note name abbreviations due to module codes not assigned)</i> PProj, PP, DF, CO, ET
Learning	Practically and theoretically present the required skills to deal with uncertainty, ambiguity and limitations of knowledge in identifying security breaches and proposing solutions as fixes. <b>CRCS 3, CRPS 4, 5, GSE 2, 4, 5, 6</b>	PProj, PP, EH, VNS
Enquiry	Learn to acknowledge the cultural, ethical, economic, legal, and social issues surrounding the use of information. <b>CRCS 3, CRPS 6, GSE 2, 6</b>	PProj, PP
Analysis	Work with data (that may be incomplete) to draw appropriate conclusions. <b>CRCS 8, CRPS 6, GSE 2, 6</b>	PProj, PP
Problem Solving	Work with the various disciplines in computer science and choose the best solutions for networking and security problems and demonstrate solutions both theoretically and practically/technically. <b>CRCS 1, 2, 3, CRPS 1, 2, GSE 1,2, 4</b>	PProj, PP, DF, CO, EH, VNS
Communication	Theoretically and practically communicate clear solutions to both specialist and non-specialist audiences in a variety of forms as to the protection methods used within the cyber security domain. <b>CRCS 3, 4, 5, CRPS 2, GSE 1, 2, 4</b>	PProj, PP, DF, CO, EH, VNS
Application	Apply both methods and practical tools in the defence of computing applications and systems <b>CRCS 4, 5, 6, 7, CRPS 4, 5, 6, GSE 4, 5, 6</b>	PProj, PP, VNS, CO
Reflection	Solve complex ideas and apply critical reflection to tasks carried out. <b>CRCS 2, 6, CRPS 3, GSE 4, 5, 7</b>	PProj, PP

<b>FdSc Computer Science (Data Analyst) Level 5</b>		
<b>University Outcome</b>	<b>Programme Outcome</b>	<b>Mapped Modules</b>
Knowledge & Understanding	Theoretically and practically demonstrate knowledge to address ethical and legal issues, sustainability, risk and safety and the ways in which these relate to the data analytics field, addressing issues of data capture, analysis, and application tools. <b>CRCS 3, 7, CRPS 2, 3, 4, GSE 6</b>	<i>(note name abbreviations due to module codes not assigned)</i> PProj, PP, DW, ADM, BIV
Learning	Both theoretically and practically, present the required skills to deal with uncertainty, ambiguity and limitations of knowledge in creating requirements specifications and modelling notations. <b>CRCS 3, CRPS 4, 5, GSE 2, 4, 5, 6</b>	PProj, PP, BIV
Enquiry	Learn to acknowledge the cultural, ethical, economic, legal, and social issues surrounding the use of information. <b>CRCS 3, CRPS 6, GSE 2, 6</b>	PProj, PP
Analysis	Work with data (that may be incomplete) to draw appropriate conclusions. <b>CRCS 8, CRPS 6, GSE 2, 6</b>	PProj, PP
Problem Solving	Work with incomplete details and carry out further investigation to draw up requirements and models for new computing applications. <b>CRCS 1, 2, 3, CRPS 1, 2, GSE 1, 2, 4</b>	PProj, PP, DW, ADM, BIV
Communication	Communicate clear solutions to both specialist and non-specialist audiences in a variety of forms as to proposed designs for new computing applications by way of theoretical and practical/technical method. <b>CRCS 3, 4, 5, CRPS 2, GSE 1, 2, 4</b>	PProj, PP, DW
Application	Select and apply industry standard system design models and techniques to large scale computing problems <b>CRCS 4, 5, 6, 7, CRPS 4, 5, 6, GSE 4, 5, 6</b>	PProj, PP, BIV
Reflection	Solve complex ideas and apply critical reflection to tasks carried out. <b>CRCS 2, 6, CRPS 3, GSE 4, 5, 7</b>	PProj, PP
<b>FdSc Computer Science (Business Analyst) Level 5</b>		
<b>University Outcome</b>	<b>Programme Outcome</b>	<b>Mapped Modules</b>
Knowledge & Understanding	Theoretically and practically demonstrate knowledge to address ethical and legal issues, sustainability, risk and safety and the ways in which these can impact the analysis of business-based computing systems. <b>CRCS 3, 7, CRPS 2, 3, 4, GSE 6</b>	<i>(note name abbreviations due to module codes not assigned)</i> PProj, PP, SBP, RE, BIV
Learning	Theoretically and practically, present the required skills to deal with uncertainty, ambiguity and limitations of knowledge in taking decisions in designing computer systems. <b>CRCS 3, CRPS 4, 5, GSE 2, 4, 5, 6</b>	PProj, PP, SBP, RE

Enquiry	Learn to acknowledge the cultural, ethical, economic, legal, and social issues surrounding the use of information. <b>CRCS 3, CRPS 6, GSE 2, 6</b>	PProj, PP, RE
Analysis	Work with data (that may be incomplete) to draw appropriate conclusions. <b>CRCS 8, CRPS 6, GSE 2, 6</b>	PProj, PP, RE
Problem Solving	Solve Computer Science based problems that address issues and find solutions for design by theoretical and practical/technical methods. <b>CRCS 1, 2, 3, CRPS 1, 2, GSE 1,2, 4</b>	PProj, PP, SBP, BIV
Communication	Communicate clear solutions to both specialist and non-specialist audiences in a variety of forms. <b>CRCS 3, 4, 5, CRPS 2, GSE 1, 2, 4</b>	PProj, PP
Application	Apply industry recognised methods and techniques to the analysis of computing systems. <b>CRCS 4, 5, 6, 7, CRPS 4, 5, 6, GSE 4, 5, 6</b>	PProj, PP, RE, BIV
Reflection	Solve complex ideas and apply critical reflection to tasks carried out. <b>CRCS 2, 6, CRPS 3, GSE 4, 5, 7</b>	PProj, PP

## Learning, Teaching and Assessment Approach of this Programme

A substantial variety and range of teaching and learning strategies are used on this award. These take the form of class attendance, directed reading, independent reading (this is very strongly encouraged), electronic delivery of learning material, computer simulations, discussions with supervisors, practical work, problem solving, working with peers in group activities, working with people in industry, undertaking literature reviews and critically appraising published work, giving presentations, being interviewed, report writing, industrial visits and seminars. This variety of methods is designed to encourage you to become an independent learner so that you can continue to increase your knowledge even after you finish the course (and thus contributes to your employability).

Teaching and learning within the University is supported by electronic distribution of information and course management through the Blackboard virtual learning environment. Each module within the Department has a presence on Blackboard. This allows students to engage in studies in a structured, directed and flexible manner. The system also provides a means of formal and informal communication between students and lecturers through discussion forums. Many of the modules on the FdSc have been developed to make full use of this facility and are used as exemplars of good practice. The information on Blackboard is in support of, and not as a replacement for, attendance at taught classes each week – attendance is a requirement (for on-campus students).

Students will approach studies from both practical and theoretical perspectives; and learn from the range of assessment activities that they will be subjected to. These activities are briefly summarised below. Students will receive both written and verbal feedback on these activities from tutors to assist them as they develop assessments, which is defined as 'formative feedback'. At the end when final assessments are marked students will receive summative feedback.

**Blogs / logbooks** - Students will be required to keep blogs that detail their learning.

**Project** - In Level 5 all students will identify a topic and investigate this, writing a report at the end.

**Exams** - Students will on some modules undertake written exams to apply knowledge they have learned in relation to given examination scenarios.

**Technical Reports/Essays** - Some modules will include essays where students are required to investigate topics and write these up presenting their own interpretations and conclusions.

**Artefacts** - Students will develop small computing artefacts on some modules to illustrate how they interpret designs they have made into a final solution.

**Multiple choice questions (MCQs)** - Tests will be used on some modules so students can show their knowledge by selecting appropriate answers from a range provided.

**Presentations** - In some module's presentations will be used to summarise findings the students have made in relation to a task or problem.

**Practical/technical Demonstrations** - In some modules, students will demonstrate the practical or technical output of their work.

All assessment mechanisms will focus, wherever possible, on integrating practical and theoretical methodologies to ensure that students can demonstrate their technical skills by way of showcasing their knowledge and understanding of the attendant theory whilst incorporating professional standards and behaviours.

The substantial range of facilities available within the Department and the University, contribute to generating a research/academic community environment and culture that impacts favourably on FdSc students. However, the resource that influences the learning of students most on this award is probably the staff - their approach to supporting students, their specialist subject knowledge, and their knowledge of appropriate specialist texts and other support material that can contribute to learning. Thus, we believe in, and practice, research-informed teaching.

## Learning Opportunities on this Programme

**Post-Assessment Activity** – Apart from the two semesters of teaching each year students will at the end of each academic year attend Post-Assessment Activity (PAA) classes. These are important and have two main purposes. Firstly, to develop skills that can lead to Microsoft Certification (such as Microsoft Office Specialist), and secondly to provide 'Level-up' preparation for the next year of study instilling additional theory and skills in advance. On completion of Level 5 teaching the PAA will include sitting Microsoft Technology Expert examination(s), and learning about Microsoft Technical Expert (MTE), as well as preparing students in relation to employment or further study. Students can also study and take certifications other than Microsoft that includes those from the likes of Cisco, Amazon Web Services, and Adobe topics.

**Industry Networking** – throughout the program students will have the opportunity to engage with our industry partners via guest lectures, networking events, competitions, conferences etc. to help build their professional profiles and prepare them for the world of work. Mentorship and guidance will underpin the subject curriculum so that students will be



able to contextualise the relevance of the skills, knowledge and behaviours in relation to their own personal career goals.

## Structure of this Programme

The core and optional modules delivered on this programme are outlined in the table(s) below. For full delivery details, please see Appendix 1.

### Level 4

#### Core Modules

Module Code	Module Title	Credit Value	Pre-requisites
TBC	Computer Architecture, Networks and Cyber	40	None
TBC	Business, Systems and Data Analysis	40	None
TBC	Introduction to Software Development	40	None
<b>Intermediate Award:</b>		CertHE Computer Science	

### Level 5

#### Core Modules

Module Code	Module Title	Credit Value	Pre-requisites
<b>FdSc Computer Science (Software Developer)</b>			
TBC	Professional Practice	20	None
TBC	API Development	20	None
TBC	Web Development	20	None
TBC	Pathway Project	20	None
TBC	Mobile App Development	20	None
TBC	Server-Side Development	20	None

#### **FdSc Computer Science (Software Tester)**

TBC	Professional Practice	20	None
TBC	API Development	20	None
TBC	Web Development	20	None
TBC	Pathway Project	20	None
TBC	Test Automation	20	None
TBC	Managing Software Testing	20	None

#### **FdSc Computer Science (Digital Accessibility Specialist)**

TBC	Professional Practice	20	None
TBC	Accessibility and User Experience	20	None

TBC	Web Development	20	None
TBC	Pathway Project	20	None
TBC	Interface Design and Testing	20	None
TBC	Web Frameworks	20	None

<b>FdSc Computer Science (Network Engineer)</b>			
TBC	Professional Practice	20	None
TBC	Advanced Routing, Switching and Troubleshooting	40	None
TBC	Cloud Architecture	20	None
TBC	Pathway Project	20	None
TBC	Virtualization and Network Security	20	None

<b>FdSc Computer Science (Cyber Security Technologist)</b>			
TBC	Professional Practice	20	None
TBC	Digital Forensics	20	None
TBC	Cyber Operations	20	None
TBC	Pathway Project	20	None
TBC	Ethical Hacking	20	None
TBC	Virtualization and Network Security	20	None

<b>FdSc Computer Science (Data Analyst)</b>			
TBC	Professional Practice	20	None
TBC	Data Warehousing	20	None
TBC	AI and Data Mining	20	None
TBC	Pathway Project	20	None
TBC	Business Intelligence and Visualisation	20	None

<b>Optional Modules</b>			
<b>Module Code</b>	<b>Module Title</b>	<b>Credit Value</b>	<b>Pre-requisites</b>
TBC	Negotiated Studies	20	None
TBC	Ethical Hacking	20	None
TBC	Managing Software Testing	20	None

<b>FdSc Computer Science (Business Analyst)</b>			
TBC	Professional Practice	20	None
TBC	Strategic Business Planning	20	None
TBC	Requirements Engineering	20	None
TBC	Pathway Project	20	None
TBC	Business Intelligence and Visualisation	20	None

<b>Optional Modules</b>			
<b>Module Code</b>	<b>Module Title</b>	<b>Credit Value</b>	<b>Pre-requisites</b>



TBC	Negotiated Studies	20	None
TBC	Ethical Hacking	20	None
TBC	Managing Software Testing	20	None
<b>Final Award:</b>		FdSc Computer Science (with named pathway)	

## Award Specific Information

### Accreditation by Professional, Statutory and Regulatory Bodies and Link to Approved Apprenticeship Standard

Not Applicable

### Site(s) of Delivery

Staffordshire University London

### Accrediting Body

Not applicable

### Award Specific Regulations

All programmes are subject to Staffordshire University's Regulations and Policies:  
<https://www.staffs.ac.uk/legal/policies/index.jsp>

### Admissions Criteria

All programmes are subject to Staffordshire University's Admissions Policy:  
<https://www.staffs.ac.uk/legal/policies/Staffs-admissions-policy.jsp>

## Appendix 1. Delivery Structure of the Programme Instance(s)

<b>Site of Delivery:</b>	Staffordshire University London Digital Institute		
<b>Teaching Institution:</b>	Staffordshire University		
<b>Arrangement Type:</b>	Not applicable		
	<b>Programme Instance:</b>	<b>Entry Month:</b>	<b>Duration:</b>
	Standard Full-Time	September	2 years
	Standard Part-Time	September	3 years

<b>Level 4 – FdSc Computer Science</b>			
<b>Semester 1</b>	Core Computer Architecture, Networks and Cyber (40 credits)	Core Business, Systems and Data Analysis (40 credits)	Core Introduction to Software Development (40 credits)
<b>Semester 2</b>			
<b>Intermediate Award:</b>		<b>CertHE Computer Science (120 credits)</b>	

<b>Level 5 – FdSc Computer Science (Software Developer)</b>			
<b>Semester 1</b>	Core Professional Practice (20 credits)	Core API Development (20 credits)	Core Web Development (20 credits)
<b>Semester 2</b>	Core Pathway Project (20 credits)	Core Mobile App Development (20 credits)	Core Server-Side Development (20 credits)

<b>Level 5 - FdSc Computer Science (Software Tester)</b>			
<b>Semester 1</b>	Core Professional Practice (20 credits)	Core API Development (20 credits)	Core Web Development (20 credits)
<b>Semester 2</b>	Core Pathway Project (20 credits)	Core Test Automation (20 credits)	Core Managing Software Testing (20 credits)

<b>Level 5 - FdSc Computer Science (Digital Accessibility Specialist)</b>			
<b>Semester 1</b>	Core Professional Practice (20 credits)	Core Accessibility and User Experience (20 credits)	Core Web Development (20 credits)
<b>Semester 2</b>	Core Pathway Project (20 credits)	Core Interface Design and Testing (20 credits)	Core Web Frameworks (20 credits)

<b>Level 5 - FdSc Computer Science (Network Engineer)</b>			
<b>Semester 1</b>	Core Professional Practice (20 credits)	Core Advanced Routing, Switching and Troubleshooting (40 credits)	Core Cloud Architecture (20 credits)
<b>Semester 2</b>	Core Pathway Project (20 credits)		Core Virtualization and Network Security (20 credits)

<b>Level 5 - FdSc Computer Science (Cyber Security Technologist)</b>			
<b>Semester 1</b>	Core Professional Practice (20 credits)	Core Digital Forensics (20 credits)	Core Cyber Operations (20 credits)

<b>Semester 2</b>	Core Pathway Project (20 credits)	Core Ethical Hacking (20 credits)	Core Virtualization and Network Security (20 credits)
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<b>Level 5 - FdSc Computer Science (Data Analyst)</b>			
<b>Semester 1</b>	Core Professional Practice (20 credits)	Core Data Warehousing (20 credits)	Core AI and Data Mining (20 credits)
<b>Semester 2</b>	Core Pathway Project (20 credits)	Core Business Intelligence and Visualization (20 credits)	Option/Negotiated Studies (20 credits)
<b>Optional Modules</b>			
<b>Module Code</b>	<b>Module Title</b>	<b>Credit Value</b>	<b>Semester</b>
TBC	Ethical Hacking	20	2
TBC	Managing Software Testing	20	2

<b>Level 5 - FdSc Computer Science (Business Analyst)</b>			
<b>Semester 1</b>	Core Professional Practice (20 credits)	Core Strategic Business Planning (20 credits)	Core Requirements Engineering (20 credits)
<b>Semester 2</b>	Core Pathway Project (20 credits)	Core Business Intelligence and Visualization (20 credits)	Core Option / Negotiated Studies (20 credits)
<b>Optional Modules</b>			
<b>Module Code</b>	<b>Module Title</b>	<b>Credit Value</b>	<b>Semester</b>
TBC	Ethical Hacking	20	2
TBC	Managing Software Testing	20	2

## **Appendix 2. Apprenticeship Standard mapping, Knowledge, Skills and Behaviours (KSBs)**

See Higher Technical Qualifications Mappings.xlsx