

# Key Stage 5 Digital Technologies Student Handbook

Course titles

OCR Computer Science A-Level

NCFE Level 3 Certificate in Cyber Security Practices Gateway

Level 3 Diploma in Networking and Cybersecurity

Pearson BTEC Level 3 Extended Certificate in IT

Pearson BTEC Level 3 Extended Certificate in E-Sports



# Welcome from the Head of Specialisms – Sarah Crookes

I wanted to extend a really warm welcome to you to UTC Swindon and the Digital Department in particular. The IT subjects we offer are one of the things that makes a UTC different from where you may have been at school before and certainly adds credibility when you apply for your next stage in just over a year's time.

Cyber Security, IT and Computer Science are especially relevant subjects in today's world and are commanding increasingly higher salary rewards as a consequence. Every business now requires IT of some description and the world of e-commerce is diversifying and expanding at an unprecedented rate. I am pleased that you have chosen to study at least one of these subjects as this can take you onwards to a range of rewarding careers.

## Introducing the Staff:



## Head of Specialisms: Sarah Crookes

Sarah is responsible for all Engineering and Digital Technology courses within UTC Swindon. If you have any concerns that cannot be answered by another member of staff, then please contact her.

## **Digital Teachers:**

You will be studying a variety of qualifications, and these will be led by different teachers. They will tell you which subjects/qualifications they are responsible for and the assessment dates that you need to adhere to.

Sue Bond

Hollie Danby

Byron Calderwood

## **EQUIPMENT:**

We recommend that you get your own laptop, if possible, to aid you in completing college work. If you need to buy a computer, we recommend a windows-based PC which will run the programmes you need but not a Chromebook as these are generally not powerful enough for

some applications. You will also need standard stationery such as pens, pencils, notebook, maths set and scientific calculator.



### QUALIFICATIONS

#### **OCR Computer Science A-Level:**

The OCR A Level in Computer Science will encourage you to be inspired, motivated and challenged by following a broad, coherent, practical, satisfying and worthwhile course of study. It will provide insight into, and experience of how computer science works, stimulating your curiosity and encouraging you to engage with computer science in your everyday life and to make informed choices about further study or career choices.

Content Overview	Assessment	Course Weighting
The characteristics of	Computer systems (01)	40% of total A level
contemporary processors,	140 marks	
input, output and storage	2 hours and 30 minutes	
devices	written paper	
<ul> <li>Software and software</li> </ul>	(no calculators allowed)	
development	Algorithms and	40% of total A level
<ul> <li>Exchanging data</li> </ul>	programming (02)	
<ul> <li>Data types, data</li> </ul>	140 marks	
structures and algorithms	2 hours and 30 minutes	
<ul> <li>Legal, moral, cultural</li> </ul>	written paper	
and ethical issues	(no calculators allowed)	
<ul> <li>Elements of</li> </ul>		
computational thinking		

<ul> <li>Problem solving and programming</li> <li>Algorithms to solve problems and standard algorithms</li> </ul>		
You will choose a computing problem to work through according to the guidance in the specification. • Analysis of the problem • Design of the solution • Developing the solution • Evaluation	Programming project (03) 70 marks Non-exam assessment	20% of total A level

# NCFE Level 3 Certificate in Cyber Security Practices:

This qualification aims to increase your knowledge and skills within cyber security. The qualification will help you to understand:

• key terminology and legislation used in cyber security and understanding and the consequences and implications of inadequate cyber security

• the Threat Model and the behaviours and effects of malicious software

• how to reduce or remove a cyber security vulnerability and how to apply a cyber security control

• cyber security incident response plans and how to carry out a cyber security incident postmortem

• the behaviours and skills expected within cyber security

To achieve this qualification, you will need to complete 6 Mandatory units

Unit	Unit Title	Assessment	GLH
1	Understand Cyber Security Principles	Internal	30
2	Understand Threat intelligence in Cyber Security	Internal	30
3	Cyber Security Testing, Vulnerabilities and Controls	Internal	30
4	Cyber Security Incident Response	Internal	30
5	Legislation and ethical conduct within cyber security	Internal	20
6	Professional Skills and Behaviours for Cyber Security	Internal	10

This qualification carries 16 UCAS points, but it could provide evidence for a personal statement to enable you to enter Higher Education. The qualification allows you to gain an in-depth knowledge of cyber security whilst developing skills required for employment. Achievement of this qualification will help support progression into a variety of job roles and occupational areas within the digital sector.

# Gateway Qualifications Level 3 Diploma in Networking and Cybersecurity:

This qualification carries 24 UCAS points.

This qualification is for learners who want to develop and extend their digital and IT skills to prepare for different roles in the digital and creative industries within Networking and Cybersecurity. The qualification is also designed for job roles in other industries where specific digital and IT skills are required, such as finance, marketing, machining, and manufacturing.

There are seven units to complete, and all are assessed internally.

Unit	Unit Title	Assessment	GLH
1	Project Management	Internal	42
2	Access Control	Internal	42
3	Data Communications	Internal	42
4	Ethical Hacking	Internal	42
5	Network Management	Internal	42
6	Network Threats and Vulnerabilities	Internal	42
7	Networking	Internal	42

### **BTEC Level 3 Extended Certificate in IT:**

You may have opted for the BTEC Level 3 in IT which is equivalent to 1 A-Level.

Below are the units you will be following to gain your IT qualification. You will be given the content and the assessment criteria by your teacher when you start each unit. You will study four units over the two years.

Unit	Unit Title	Assessment	GLH
1	Information Technology Systems	External	120
2	Creating Systems to Manage Information	External	90
3	Using Social Media in Business	Internal	90
5	Data Modelling	Internal	60

## **BTEC Level 3 Extended Certificate in E-Sports:**

You may have opted for the BTEC Level 3 in E-Sports which is equivalent to 1 A-Level.

Below are the units you will be following to gain your E-Sports qualification. You will be given the content and the assessment criteria by your teacher when you start each unit but all of them are assessed internally so there are no exams. You will study four units in total.

Unit	Unit Title	Assessment	GLH
1	Introduction to Esports	Internal	60
2	Esports Skills, Strategies and Analysis	Internal	120
3	Enterprise and Entrepreneurship in the Esports Industry	Internal	90
5	Health, Wellbeing and Fitness for Esports Players	Internal	90

#### **BTEC ASSESSMENT**

Assessment of BTEC units can be either internal or external. The course staff will explain the assessment for each unit and prepare you for them.

Units which are assessed internally means that your teacher will set you assignments and you will complete the work and they will mark this. However, this work will be subject to a verification check by BTEC during the academic year.

You need to make sure that you meet deadlines and follow the guidelines and rules given to you about submission of assignments.



## The Importance of Meeting Deadlines

Meeting deadlines is one of life's most important skills to acquire. All of us, no matter what job we will do in our life, will need this skill in order to be successful. BTEC courses are designed to reflect and acknowledge real-world employment conditions and, as such, teaching students how to meet deadlines is a top priority. Therefore, you must meet the deadlines set for submission.

From September 2014, BTEC decided that students will have one submission opportunity only for their work. Once submitted, the work will be graded. It is, therefore, <u>absolutely crucial</u> that you develop good working habits as soon as you begin the course.

## **Resubmission**

If you do not achieve the targeted assessment criteria on the first submission you <u>may</u> be given one opportunity to improve and re-submit your work, to gain the pass criteria. However, this has to be decided by the Lead Internal Verifier, under the rules laid down by BTEC. Your teacher will need to ask the Lead Internal Verifier to give authorisation to allow you to resubmit your work, but this will NOT be granted automatically.

**If** you are allowed to resubmit a piece of work, you must improve/add to the original piece without further guidance and must hand this in on the date agreed with your teacher (usually within 10 working days). Also, this must not roll over into the next academic year.

However, in exceptional circumstances, there may be a legitimate reason for not being able to meet the deadline. This gives you an opportunity to explain the reasons why you cannot meet the assessment deadline and agree a new deadline date. This must be done at least 5 days before the deadline date wherever possible, not afterwards. The submission diagram that follows is a useful tool to help understand the process.

## **Submission Diagram**

### Example:

You have been set a deadline for the 29<sup>th</sup> September 20XX- the diagram below will outline the submission and resubmission guidelines:



The teaching team will monitor the progress of assignments as they are being undertaken and will discourage plagiarism.

If your teacher feels that you have plagiarised, then a meeting will take place to consider the case and the outcome. There is a high chance that you will fail the unit if found plagiarising.

## <u>Group Work</u>

Some tasks will be completed in groups. You can work in groups to prepare fully for the assignment, but you must complete and submit the work individually.

## Submission Checklist

- 1. Complete the work to the best of your ability and print double sided maximum size 12 text with each page numbered and your name in the header.
- 2. Print out the assignment brief containing the declaration form and attach it to your work.
- 3. If you need to resubmit the assignment you must hand in the cover pages and original assignment again to provide an audit trail for when the work is moderated by Pearson.

## **BTEC GRADING OF THE QUALIFICATION**

Each unit has a specification [what you need to learn] and then assessment criteria. Each unit is graded Pass, Merit or Distinction.

- To get a Pass, you must have met all the Pass Assessment criteria
- To get a Merit, you must have met all the Merit Assessment criteria
- To get a Distinction, you must have met all the Distinction Assessment criteria

This adds up to give you a total point score once you have completed all 15 (or 10) units. As you complete units, you will be able to keep a track of the grade you may get at the end of the course.

#### **UCAS POINTS**

		BTEC		Cyber Security	EPQ (Extended
		Extended	BTEC		Project
UCAS Points	A-Levels	Certificate	Diploma		Qualification)
168	A*A*A*				
160	A*A*A				
152					
144	AAA				
128	ABB				
112	BBC		D*D*		
104			D*D		
96	CCC or AA		DD		
80	BB		DM		
64	CC		MM		
56	A*	D*			
48	А	D	MP		
40	В				
32	С	М	PP		
28					A*
24	D			Pass - Diploma	А
20					В
16	E	Р		Pass - Certificate	С

### **Useful Websites, Videos and Resources**

Websites:

National Cyber Security Centre <u>https://ncsc.gov.uk</u>

International Organisation for Standardisation <u>www.iso.org</u>

Centre for Internet Security <a href="https://www.cisecurity.org">https://www.cisecurity.org</a>

The NATO Cooperative Cyber Defence Centre of Excellence https://ccdcoe.org