



BTEC Level 3 National Extended Certificate in Information Technology (AAQ)

Specification details and Holiday homework

Specification link: [BTEC Nationals from 2025 |
Pearson qualifications](#)

NAME _____

Introduction

This qualification is designed for learners who are interested in an introduction to the study of creating IT systems to manage and share information, alongside other fields of study, with a view to progressing to a wide range of higher education courses, not necessarily in IT.

Course Outline

The exam board for the course is Pearson (Edexcel)

Unit No.	Title	GLH	Assessment Type
1	Information Technology Systems	120	External Exam
2	Cyber Security and Incident Management	120	External Exam
3	Website Development	60	Internal (PSAB)
4	Relational Database Development	60	Internal (PSAB)

Points for Coursework

Points for Exams

			Unit size	
			90 GLH	120 GLH
U	Unit size		U	Near Pass
	60 GLH	90 GLH		
	0	0		
	6	9		
	10	15		
Distinction	16	24	Distinction	32

Tasks

Task 1: Information Technology Systems

Create a presentation that covers the content for the below topics. Please refer to Peasons course content guide and do the following:

1. Research each topic
2. Create slides on each topic
3. State the source(s) where you have got information from
4. Use imagery where appropriate
5. Give examples
6. Evaluate the pros and cons for each

Topics:

A: Digital devices in IT Systems B: Transmitting data
C: Operating online
D: Protecting Data and Information E: Impact of IT systems
F: Issues

Task 2: Web Development

Web Development As part of your course on Website Development you will use HTML, CSS and JavaScript. We need you to complete the following course:

<https://www.futurelearn.com/courses/introduction-to-web-development>

Theses courses are available for free and will take you approximately 6 hours to complete (but be careful – the course is only free for three weeks from the time you start on it!

Once you are happy with designing a simple site please:

1. Design it
2. Get views on the design (feedback)

- a. Change it needed
3. Implement it (make it)
 4. Test it
 5. Get views (feedback)
 6. Evaluate it.

Prove the above via a written report.

Task 3: Databases and SQL

Task 1

Go to http://sqlzoo.net/wiki/SQLZOO:SELECT_basics and work your way through the tasks. For each task below, tick when you have managed to complete it and copy-and-paste the code you needed below. The first one has been done for you:

Number	Correct Code (that works!)	Tips
1	SELECT population FROM world WHERE name = 'Germany'	It isn't France we're looking for!
2		It isn't population/area we're looking for!
3		Check the names of the countries you need.
4		Check the numbers you need!

Task 2 (continues overleaf)

You have completed the first 4! Well done ☺ Click on the following hyperlink to move to more challenging SELECT activities: http://sqlzoo.net/wiki/SQLZOO:SELECT_from_WORLD_Tutorial

Number	Correct Code (that works!)	Tips
1	SELECT name, continent, population FROM world	Just click Submit SQL ☺
2		Check the numbers !

3		Try using the code from #2 in Task 1. We need gdp/population...
4		We need the continent to be 'South America' and the population to be divided by 1000000
5		Look at the code you wrote for #3 in Task 1. We need France, Germany and Italy...
6		A tough one! Try LIKE ' %United%' then it includes all words with United inside it...
7		You will need two statements with a big OR between them...
8		You will need to show countries where (population OR area) AND NOT (population AND area)...
9		The ROUND function looks like ROUND(population/1000,2)
10		You can use ROUND to reduce the number of decimal places by using - (eg -5, -7)...

If you finish these then you are very welcome to try and tackle the Harder Questions! No tips for these – you will need to research help yourself 😊

Wider Reading

News/ Articles

A free, open access journal that publishes peer-reviewed academic papers for all computing sectors <https://www.mdpi.com/journal/computers>

BBC – this site has news and information regarding technology and IT
<https://www.bbc.co.uk/news/technology>

Forbes.com - this site contains news and information regarding technology and IT
<https://www.forbes.com/innovation/>

This is a collection of published papers on a variety of data-related subjects
<https://journalofbigdata.springeropen.com/>

Big data research journal – some samples and articles can be viewed. <http://www.journals.elsevier.com/big-data-research/>

A series of journals, magazines in analytics, big data, data mining and knowledge discovery
<https://www.kdnuggets.com/>

Books/audiobooks

BTEC Nationals Information Technology Student Book
https://www.amazon.co.uk/Nationals-Information-Technology-Student-Activebook/dp/1292140410/ref=sr_1_1?keywords=BTEC+Nationals+Information+Technology+Student+Book&qid=1561030309&s=gateway&sr=8-1

Revise BTEC National Information Technology Units 1 and 2 Revision Guide
https://www.amazon.co.uk/Revise-National-Information-Technology-Revision/dp/1292299096/ref=sr_1_fkmr0_1?keywords=Revise+BTEC+National+Information+Technology+Units+1+and+2+Revision+Guide&qid=1561030289&s=gateway&sr=8-1-fkmr0

Microsoft® Access® 2010 Inside Out
https://www.amazon.co.uk/Microsoft%C2%AE-Access%C2%AE-2010-Inside-Microsoft/dp/0735626855/ref=sr_1_1?crid=3H5UGEG687F1Z&keywords=access+2010+inside+out&qid=1561030235&s=gateway&prefix=access+2010+inside+%2Caps%2C123&sr=8-1

Database Systems: A Practical Approach to Design, Implementation, and Management, Sixth Edition (Pearson, 2014) by Connolly T and Begg C - ISBN 9781292061184
This is a comprehensive book on database systems and management.

JavaScript: The Definitive Guide (Definitive Guides), Sixth Edition (O'Reilly Media, 2011) by Flanagan D – ISBN 9780596805524
This is a useful guide on how to use client-side scripting within websites to produce interactivity and ultimately engaging websites

CSS: The Missing Manual, Fourth Edition (O'Reilly Media, 2015) by McFarland D – ISBN 9781491918050

An excellent book on how to use HTML and CSS to produce clean, usable websites.

HTML5 in Easy Steps, Seventh Edition (In Easy Steps Limited, 2011) by McGrath M – ISBN 9781840784251

This book simply conveys how to apply HTML5 scripting to websites easily and efficiently.

Networking All-In-One For Dummies. John Wiley & Sons, sixth revised edition by Lowe, Doug, 2016 – ISBN 10: 1119154723, ISBN-13: 978-1119154723

Details network planning, administration, protocol, virtualisation, cloud networking, servers, etc.

Internet of Things: A Hands-On Approach (1st Edition), VPT, 2014 by Bahga A, ISBN 9780996025515

This book combines both context with technical aspects, and also includes some useful case studies

Useful Websites

Pearson: BTEC Nationals Information Technology (2016 and 2017)

<https://qualifications.pearson.com/en/qualifications/btec-nationals/information-technology-2016.html>

UK government website containing information about UK legislation and subsequent updates and amendments

<https://www.legislation.gov.uk/>

UK's intelligence, security and cyber agency

<https://www.gchq.gov.uk/>

Blogs

Social Media Examiner is one of many blog sites with up-to-date articles about using social media for business purposes

<https://www.socialmediaexaminer.com/>

YouTube

Access

https://www.youtube.com/results?search_query=Access+2010

HTML

https://www.youtube.com/results?search_query=html

Cloud Computing: What is Cloud Computing?

<https://www.youtube.com/watch?v=uYGQcmZUTaw>

Changes to computer thinking – Stephen Fry explains cloud computing

<https://www.youtube.com/watch?v=J9LK6EtxzgM>

The Three Ways to Cloud Compute

<https://www.youtube.com/watch?v=SgujalzkwrE>

Google Compute Engine – Ten Minute Test Drive: Set Up your own Web Server

<https://www.youtube.com/watch?v=LrjpcR-IJwY>

Cloud Wars: Amazon (AWS) vs. Google (GCP) vs. Microsoft (Azure)

<https://www.youtube.com/watch?v=342KEaxFVjM>

Internet of Things [1/5]: Devices and Local Networks (6 minutes) – The first of a really interesting series of five videos split into key themes. This first video focuses on devices and networks and there are 4 other parts

<https://www.youtube.com/watch?v=SDJVF4VUHA>

How to write an effective business plan (15 minutes) – the more traditional approach to producing a business plan

<https://www.youtube.com/watch?v=zfxWIOAVvbU>

Online Courses

The official Microsoft Office website – it contains training material for various versions of software including Access

<https://support.microsoft.com/en-GB/microsoft-365>

The w3schools.com website is a useful starting point for anyone who wishes to learn how to use HTML, CSS and Javascript to produce websites.

<https://www.w3schools.com/>

Web Development course available:

<https://www.futurelearn.com/courses/introduction-to-web-development>

Anyone can register on the Codecademy website. It includes free videos and training tutorials on how to develop websites.

www.codecademy.com

Markup Validation Service (W3C) allows you to validate website content for free. This enables you to check for errors and ensure that your website is W3C compliant.

<https://validator.w3.org>

This website analyses good and poorly designed websites. You may find it useful for showing learners examples when explaining how to design clean, intuitive websites.

www.webpagethatsuck.com

The CSS Zen Garden website allows anyone to explore different CSS templates which can be applied to a website design. You could show learners different styles of website layouts and how those layouts can be achieved using CSS

www.csszengarden.com

Cisco Entry and Cisco Associate

<https://www.cisco.com/site/us/en/learn/training-certifications/certifications/index.html>