Welcome to BTEC Digital IT and Computing

We offer 2 IT courses

Extended Diploma IT

The equivalent of 3 A levels.

Typical Extended Diploma careers

Summer tasks for Extended Diploma

Career range – IT covers a wide range of industries so will be valuable in any career that you choose to progress onto. There are certain specialist units which will give you a good head start such as Social Media, Data Manipulation, Programming, Gaming, Animation and Software Testing.

Extended Certificate IT

The equivalent of 1 A level, typically taken alongside 2 A levels to make up your program.

Typical Extended Certificate careers

Summer tasks for Extended Certificate

Why should I study IT?

The Extended Diploma course covers a wide range of topics so the spread of units gives you not only good depth to your knowledge, but also the kind of breadth required for a wide range of potential careers or a university course.

The Extended Certificate is a good way to enhance your understanding of how IT is used in industry and why it is an essential ingredient to giving organizations that competitive edge.

Assessment method – a mix of internally assessed units and externally assessed units.

What typical careers can I go onto?

Some of the Industries requiring IT skills include:

Logistics, Building, Finance, Games, Retail, Farming, Armed Forces and of course….IT!

Extended Diploma students typically go on to University courses, or straight into a job, or a Degree Apprenticeship

A selection of careers for this course includes: Software design, Programming, Cyber Security, Gaming, Design and creativity, Business Social Media

Extended Certificate students typically go on to (when combined with your other subjects): University course, job or Degree Apprenticeship

Depending on your mix of subjects, but include: Business Social Media, Design and creativity, Data modelling, Systems analyst

Our links to industry this year have included talks from new and established IT professionals	
BT Degree apprentice Will Manchip (ex-Huish student) talking to IT students about cyber security	Matt Morgan from EDF cyber security, talking about his career in Software Development, and Cyber security.

Tasks to complete over the summer – Extended Diploma

Create a folder to store all of the work in.

Programming:

This is a great introduction to programming, using Python and giving you a step-by-step guide in to this brilliant topic!

There are 4 units to **complete** for this Amazon Python course – have fun trying them!

https://amazonpython.firetechcamp.com/login

Cyber Security

Simple example of a Caesar cypher:

https://cryptii.com/pipes/caesar-cipher

Watch the following Khan Academy video on Caesar cyphers and answer the questions:

https://www.bing.com/videos/search?q=caesar+cypher&docid=608029775203861381&mid=A36A76EE006BF1A3B39AA36A76EE006BF1A3B39A&view=detail&FORM=VIRE

1. What is a Caesar Cypher?

2. Who used this method?

3. Why would it not now be considered secure?

4. What is 'frequency analysis'?

Read the following article on Bletchley Park code breaking in WWII

http://www.bbc.co.uk/threecounties/content/articles/2008/05/27/bucks_places_bletchley_park_feature.shtml

1. Who was Alan Turing?

2. How does the article say the codes were actually broken?

3. Who wrote the book that allowed the secret of Bletchley Park to leak out (and what year)?

Find out more about Cyber security:

https://www.cisco.com/c/en/us/products/security/what-is-cybersecurity.html

1. What does CISCO say that cybersecurity is?

2. Click on the basic cybersecurity principles link in the document. Why do you think that tip 3 is important in an organization?

4. What might happen if you left your screen on?

5. Tip 5 is about not sharing your device if you use sensitive browsing such as online banking – why do you think this is important?

Gaming Industry

Read the following article:

https://www.bbc.co.uk/news/technology-46746593

1. What are the key games that have helped the industry to grow so big?

2. The article is from Jan 2019 – can you find out how big the UK games industry is now?

3. The article says that the games industry has benefited most from games on smart apps – why do you think this is the case?

4. What are your top 3 favourite games?

   1
   2
   3

Animation

Download Blender 2.8 (or whichever is the latest version)

https://www.blender.org/

Watch and try out this Introduction to the 'modelling meshes' in Blender:
https://www.youtube.com/watch?v=djpz3SVU2W0

Try out this tutorial https://www.youtube.com/watch?v=Xkcdn29D8CA on making a low-poly tank – it is a challenge for beginners, so stick with it!

Watch the tutorial before starting to work in Blender – you may wish to source some tank images, or sketch them yourself – but these are only needed as a reference point.

You may have to stop the video and rewind quite a few time just to become familiar with the interface – this is normal!

Give yourself plenty of time to complete this.

Further tasks below are also for those on the Extended Certificate….

Summer Tasks for Extended Certificate and Extended Diploma

Where can GPS be used*?*

Read the following…

https://www.traakit.co.uk/agriculture/

https://thefarmingforum.co.uk/index.php?threads/ploughing-gps.967/

https://www.raf.mod.uk/aircraft/typhoon-fgr4/

https://www.rewiresecurity.co.uk/personal-gps-tracking-devices

Moral/Ethical implications of GPS

https://ieeexplore.ieee.org/document/6324666

https://www.vehicletrackingexperts.co.uk/is-it-illegal-to-track-your-spouses-or-childs-car/

Write a short essay covering:

1. What is GPS?
2. Explain 3 reasons why it is advantageous to use it – in industry? Privately?
3. Explain 3 reasons why it might be morally or legally wrong to use GPS tracking devices in the situations you have explained.

From this, **evaluate** (ie compare and come up with your conclusion) as to whether the advantages outweigh the disadvantages of the use of GPS.

Social Media

Have a **look** at these business social media fails:

https://www.inc.com/max-totsky/social-media-fails-2019.html

Why do you think company fails stay with users long after the event?

Read this article:

https://www.socialmediatoday.com/content/risk-management-protecting-your-brand-social-media

List (at least) 3 things that an organization can do to protect its brand

Any queries? Email Andyh@Richuish.ac.uk (course manager) or RalphE@Richuish.ac.uk (course teacher and Course Manager of Computing), or ring the college on 01823 320800.

Back to Top