Subject: Information Technology **Level:** BTEC Level 3 National Extended Certificate

(*Equivalent to an A Level*)

Course Summary

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. BTEC Nationals offer learners modern, work-related qualifications which open the door to higher education and a career because they:
are each designed with a clear purpose to support defined progression routes into higher education or employment
build high-level skills such as teamwork, creative thinking and presentation skills.
develop independent research and study skills essential for success at university.
attract UCAS points and are widely recognised by universities and employers.

Course Structure

Unit 1: The Information Technology Systems *(External Assessment – Written Examination)*
You will explore the relationships between the hardware and software that form an IT system, and the way that systems work individually and together, as well as the relationship between the user and the system. You will examine issues related to the use of IT systems and the impact that they have on organisations and individuals. In this unit you will draw on your learning from across your programme to complete assessment tasks.

This unit will give you a fundamental and synoptic understanding of all areas of IT, supporting your progression to an IT-related higher education course.

Unit 2: Creating Systems to Manage Information *(External Assessment)*
You will examine the structure of data and its origins, and how an efficient data design follows through to an effective and useful database. You will examine a given scenario and develop an effective design solution to produce a database system. You will then test your solution to ensure that it works correctly. Finally, you will evaluate each stage of the development process and the effectiveness of your database solution. In this unit you will draw on your learning from across your programme to complete assessment tasks.

Unit 3: Using Social Media in Business *(Internal Assessment)*
You will explore different social media websites, the ways in which they can be used and the potential pitfalls when using them for business purposes. You will develop a plan to use social media strategies for business purposes to achieve specific aims and objectives. You will then implement the plan, developing and posting content and interacting with others. Finally, you will collect data on the business use of social media and review the effectiveness of your efforts.

Unit 4: Website Development *(Internal Assessment)*
In this unit, you will review existing websites – commenting on their overall design and effectiveness. You will use scripting languages such as Hypertext Markup Language (HTML), Cascading Style Sheets (CSS) and JavaScript® and a simple text editor, or rapid application development tools. Finally, you will reflect on the website design and functionality using a testing and review process.

Grades available are Pass, Merit and Distinction

Progression opportunities

When taken alongside other Level 3 qualifications, including BTEC Higher Nationals or A Levels in complementary or contrasting subjects, such as mathematics, physics, science, arts or technology, the qualification gives learners the opportunity to progress to a degree in an information technology discipline or a degree where information technology related skills and knowledge may be advantageous.

Entry requirements

- There are no formal requirements other than the minimum points required to return to study at Sixth Form.
- A GCSE in ICT may be an advantage.

Coleraine Grammar School

ICT Department

ICT A Level Options

The ICT Department is offering two A Levels

AS/A2 Digital Technology

Overview

Develops understanding of ICT Systems

Theoretical approach to ICT. Includes some programming and web design using HTML.

AS –two examination modules.
A2 – one examination module and one coursework module (20%).

AS/A2 Software Systems Development

Overview

Programming

Focuses on learning to program in C# (C Sharp).

AS and A2: Examination and Coursework (50%) each.

Need an A in GCSE Mathematics

Progression Pathways

Both A Levels provide sufficient depth to allow study of any IT/Computing subject in further / higher education.

More Detail on following pages.
It is possible to select both options but check with careers department that it does not limit your options for further / higher education.

Subject: Digital Technology **Level: GCE**

Brief Summary of the course

Digital Technology is a new specification that has been designed to replace GCE ICT. It aims to develop an interest in digital technology and gain an understanding of the system development process. It creates an awareness of a range of advanced modern technology based systems and an appreciation of the potential impact these may have on the world.

Digital Technology encourages pupils to apply their skills to relevant work-related scenarios, to carry out research and development, and present their findings. It helps develop advanced study skills that prepare for third level education and gives students opportunities to progress to further study and career paths leading to professional IT management.

What you will be studying (course content structure / modules / assessments)

Unit AS 1: Approaches to System Development	**Unit AS 2: Fundamentals of Digital Technology**
Reasons for system development. Analysis. Design, development and testing. Implementation. Alternative development approaches. Software projects. Programming environment.	Data representation. Data and information. Hardware and software. Web technology and multimedia.
Assessment: Written examination **1 hour 30 minutes** *50% of AS / 20% of A Level*	**Assessment:** Written examination **1 hour 30 minutes** *50% of AS / 20% of A Level*
Unit A2 1: Information Systems	**Unit A2 2: Application Development**
Networks. Databases. Applications of digital technology including: Artificial intelligence. Expert systems. Cloud computing. Individual social (ethical) and legal considerations.	Analysing the problem. Designing a solution to the real-World problem. Developing the solution. Testing the solution. Evaluating the solution. Developing user support documentation.
Assessment: Written examination **2 hours 30 Minutes** *40% of A Level*	**Assessment:** Coursework *20% of A Level*

Progression opportunities (progression / potential job occupations)

The AS and A2 GCE Advanced level specifications should encourage students to become discerning users of Digital Technology and develop a broad range of ICT skills, knowledge and understanding.

This forms a basis for progression into further learning, including progression from AS to A2 and/or employment. The specification we offer encourages students to develop:

- the capacity for thinking creatively, innovatively, analytically, logically and critically;
- the skills to work collaboratively;
- the ability to apply skills, knowledge and understanding of ICT in a range of contexts to solve problems.

These are valuable skills that could lead a student into the areas of further study in ICT Management, Multimedia, Software design, Games design, Computer programming, Graphic design, CAM engineering, and CAD

Entry requirements

- There are no formal requirements other than the minimum points required to return to study at Sixth Form.

Subject: Software Systems Development **Level: GCE**

Brief Summary of the course

Software Systems Development is an applied qualification in which you develop knowledge, understanding and skills in the development of software applications through practical application. The ability to write computer programs in languages that are used widely in industry is one of the most valuable skills to have in the world today. Knowing languages such as C# allows you to program and develop applications on a range of platforms such as desktops and mobiles.

What you will be studying (course content structure / modules / assessments)

AS1 1: Introduction to Object Oriented Development	**AS2: Event Driven Programming**
In this unit you will develop a thorough understanding of object oriented systems. *You will learn about:* • Software. • Defining Data. • Program Control Structures. • Objects. • Data Structures. • Exception Handling. • Managing Input/Output. • Testing an Object Oriented Application.	In this unit you will learn how to develop and implement object oriented technologies in an event driven environment such as creating an application with an appropriate user interface. *You will learn about:* • Defining Graphical User Interface (GUI) Objects. • Understanding Events. • Using Multiple Forms. • Designing an Event Driven Application.
Assessment: Written examination **2 hours** *50% of AS / 20% of A Level*	**Assessment:** Coursework *50% of AS / 20% of A Level*
A2 1: Systems Approaches and Database Concepts	**A2 2: Implementing Solutions**
This unit will provide you with a thorough understanding of the reasons for systems development. You will also be introduced to database concepts, enabling you to understand relational database systems. *You will learn about:* • Reasons for Systems Development. • Systems Methodologies. • Managing Projects. • Testing. • Database Concepts. • Entity Relationship (ER) Models. • Normalisation. • Structured Query Language (SQL).	In this unit you will learn to design and build a solution to a given problem using an RDMS through an event driven programming environment. *You will learn about:* • Applying Project Management Techniques to the Development Process. • Selecting a Systems Approach to the Solution of a Business Problem. • Documenting the Design of the Solution and Testing the Design. • Developing and Implementing a Desktop Solution Using an RDMS through an Event Driven Programming Environment. • Testing and Evaluating the Solution.
Assessment: Written examination **2 hours** *50% of A2 / 30% of A Level*	**Assessment:** Coursework *50% of A2 / 30% of A Level*

Progression opportunities (progression / potential job occupations)

Software Systems Development fosters a genuine interest in computer programming with a focus on developing practical industry standard skills. It develops expertise that will prepare you for further study in computing related subjects, to work in today's software industry, as well as an understanding of advanced programming constructs – an asset in many career paths.

Entry requirements

- At least an A ***in GCSE Mathematics***. *Criteria may be enhanced depending on demand.*