

AUTUMN TERM

- **3.1 Fundamentals of Algorithms Paper 1** -Students will learn how to applications and code are read by devices. It will build on their knowledge of Year 9 programming, and they will take on challenging scenarios, where Algorithmic and problem-solving skills will be needed to be successful. They also look at Pseudocode and Flowcharts to learn more about designing/structuring programs.
- **3.2 Programming Paper 1** – Students will learn how to program basic skills required for the course. It will build on their knowledge of Year 9 programming and will take on practice of challenging scenarios, where Algorithmic and problem solving skills will be needed in order to be successful. This will include output, input, casting, conditional statements, iteration, lists and subroutines.

SPRING TERM

- **3.3 Fundamentals of Data Representation**- Students will learn about how the computer represents/ displays/stores data. They will understand the importance of Binary in machines and look in detail at how images/sound/text are portrayed. Students will also be introduced to Binary and Hexadecimal calculations/conversions. Students will also be introduced to ASCII and Unicode character sets.
- **3.4 Computer Systems**- Students will learn about how the various components inside a computer work from the CPU to main memory and secondary storage (Hard Drives etc). They will also look at the fundamental operation of the computer (Fetch Decode Execute Cycle) and how we can analyse the performance of a device.
- **Programming Project**–. This is the development of a computer program along with the computer programming code itself which has been designed, written and tested by a student to solve a problem. Students will produce an original report outlining this development.

SUMMER TERM

- **3.2 Programming paper 1** – Students will learn more advanced programming skills required for the course. It will build on their knowledge from Autumn term and will develop into more challenging scenarios where problem solving and cross curricular skills and knowledge are required. This will include modifying text and CSV files; 2D lists and their properties and will have a focus on structured programming and modularisation.
- **Programming Project**–. This is the development of a computer program along with the computer programming code itself which has been designed, written and tested by a student to solve a problem. Students will produce an original report outlining this development.
- **3.5 Fundamentals of computer networks**- Students will learn what the different elements of the Internet are, and how data is sent and received. We look at how the internet has rules (protocols) and how there are various levels (layers) that complete different tasks that combine to make the internet work. Students will also look at how networks can be set up online and offline.



Year 10

BTEC ICT

Autumn Term and Spring Term

- **Component 1:** Exploring User Interface Design Principles and Project Planning Techniques-

Students will develop their understanding of what makes an effective user interface and how to effectively manage a project. They will use this understanding to plan, design and create a user interface. In this component, students will learn the different design principles that can be used to design effective user interfaces and apply appropriate project planning techniques to create a user interface that meets user requirements. This component will build on Key Stage 3 where students have learned about computer systems and software applications. Learners will learn how effective design and planning has a major impact on the user experience.

- **PSA 1-** This is an Internally assessed unit of coursework worth 30%.

Learning aims

- A Investigate user interface design for individuals and organisations
- B Use project planning techniques to plan and design a user interface
- C Develop and review a user interface.

Spring and Summer Term

- **Component 2:** Collecting, Presenting and Interpreting Data

Students will understand the characteristics of data and information and how they help organisations in decision making. They will use data manipulation methods to create a dashboard to present and draw conclusions from information. In this component, students will learn the different data manipulation tools that can be used to change the way that data is presented. They will provide clear summaries of the data and present them in a dashboard that will allow organisations to make effective decisions. This component will help to develop students understanding of how to represent information in different ways to give it more meaning.

- **PSA 2-** This is an Internally assessed unit of coursework worth 30%.

Learning aims

- A Investigate the role and impact of using data on individuals and organisations
- B Create a dashboard using data manipulation tools
- C Draw conclusions and review data presentation methods.

BUILDING EXCEPTIONAL YOUNG MEN



Year 10

BTEC Enterprise

Autumn Term

- **Component 1: Exploring Enterprises**

Students will explore different enterprises to develop their knowledge and understanding of the characteristics of enterprises and the skills needed by entrepreneurs to be successful. Learners will explore how enterprises use market research to find out about their customer needs and competitor behaviour and how internal and external factors may affect enterprises.

Students will explore why enterprises are successful, looking at the impact of factors both inside and outside the control of the enterprise, and investigate ways in which situational analyses can be used to support decision making. This component will give students an understanding of the factors that contribute to a successful enterprise. They will develop transferable skills, such as research and data analysis, which will support your progression to Level 2 or Level 3 vocational or academic qualifications

Spring Term

- **PSA 1- This is an Internally assessed unit of coursework worth 30%.**

Learning aims

A Understand how and why enterprises and entrepreneurs are successful

B Understand customer needs and competitor behaviour through market research

C Understand how the outcomes of situational analyses may affect enterprises.

Summer Term

- **Component 2: Planning and Presenting a Micro-Enterprise Idea**

Students will generate two realistic ideas for a micro-enterprise and choose one of these to plan within budget. They will individually present their business plan for their idea and review the production and delivery of their presentation to make recommendations for improvements.

BUILDING EXCEPTIONAL YOUNG MEN

AUTUMN TERM

- **1.2 Memory and storage** – Students will learn why computers have secondary storage and be able to recognise a range of secondary devices. They will compare the advantages and disadvantages of each storage device. Students will also understand why data must be stored in binary format. They will learn the denary/Hex/Binary number systems.
- **1.3 Fundamentals of computer networks**- Students will learn what the different elements of the Internet are, and how data is sent and received. We look at how the internet has rules (protocols) and how there are various levels (layers) that complete different tasks that combine to make the internet work. Students will also look at how networks can be set up online and offline.
- **1.4 Network Security** – Students will learn the threats posed to devices/ systems. They will be able to know the principles of each attack including how the attack is used and the purpose of the attack.
- **1.5 System Software**- Students will learn the purpose and functionality of Operating systems and Utility software.

SPRING TERM

- **1.6 Ethical, Legal, cultural and environmental impact.** Students will learn about how technology introduces ethical, legal, cultural, environmental and privacy issues. Students will learn the relevant legislation to computer Science.
- **Revision and exam techniques**– Students will recap all topics and complete exam style questions to prepare them for their Paper 1 and Paper 2 exams.

Content Overview	Assessment Overview
J277/01: Computer systems This component will assess: • 1.1 Systems architecture • 1.2 Memory and storage • 1.3 Computer networks, connections and protocols • 1.4 Network security • 1.5 Systems software • 1.6 Ethical, legal, cultural and environmental impacts of digital technology	Written paper: 1 hour and 30 minutes 50% of total GCSE 80 marks This is a non-calculator paper. All questions are mandatory. This paper consists of multiple choice questions, short response questions and extended response questions.
J277/02: Computational thinking, algorithms and programming This component will assess: • 2.1 Algorithms • 2.2 Programming fundamentals • 2.3 Producing robust programs • 2.4 Boolean logic • 2.5 Programming languages and Integrated Development Environments	Written paper: 1 hour and 30 minutes 50% of total GCSE 80 marks This is a non-calculator paper. This paper has two sections: Section A and Section B. Students must answer both sections. All questions are mandatory. In Section B, questions assessing students' ability to write or refine algorithms must be answered using either the OCR Exam Reference Language or the high-level programming language they are familiar with.



Year 11

BTEC ICT

- **Component 3: Effective Digital Working Practices- This is an External exam unit worth 40%**

Students will explore how organisations use digital systems and the wider implications associated with their use. This component will give students an opportunity to explore how the developments in technology over recent years have enabled modern organisations to communicate and collaborate more effectively than ever before. The component is designed to allow students to explore the digital systems available to organisations and how their features have an impact on the way organisations operate. Students will explore how developments in technology have led to more inclusive and flexible working environments, and how regulation and ethical and security concerns influence the way in which organisations operate.

Assessment objectives

A01 Demonstrate knowledge of facts, terms, processes and issues in relation to digital information technology

A02 Apply an understanding of facts, terms, processes and issues in relation to digital information technology

A03 Analyse, evaluate and make reasoned judgements about the use, factors and implications influencing digital information technology

A04 Make connections with the concepts, issues, terms and processes in digital information technology

Autumn Term – A01 & A02

Spring Term- A03 & A04

Summer Term- Revision and Examinations

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YOUR
SCHOOL
JOURNEY

YEAR 11

GCSE Edexcel Business

AUTUMN TERM

- **Topic 2.1 Growing the business** – Students are introduced to methods of growth and how and why business aims and objectives change as businesses evolve. The impact of globalisation and the ethical and environmental questions facing businesses are explored. In this unit student will be assessed through an end of unit written assessment.
- **Topic 2.2 Making marketing decisions** – Students will learn how each element of the marketing mix is managed and used to inform and make business decisions in a competitive marketplace. In this unit students will be assessed through an end of unit written assessment.
- **Topic 2.3 Making operational decisions** – Students will learn about meeting customer needs through the design, supply, quality and sales decisions a business makes. In this unit students will be assessed through an end of unit written assessment.

SPRING TERM

- **Topic 2.4 Making financial decisions** – Students will learn the tools a business has to support financial decision making, including ratio analysis and the use and limitation of a range of financial information. In this unit students will be assessed through an end of unit written assessment.
- **Topic 2.5 Making human resource decisions** – Students will learn what growing a business means and what decisions are made relating to organisational structure, recruitment, training and motivation. In this unit students will be assessed through an end of unit written assessment.
- **Revision and exam techniques**– Students will recap all topics and complete exam style questions to prepare them for their exam in June.
- **Tutor 4 U trip**– Students will have the opportunity to attend a exam grade booster session which will support students with exam technique.

SUMMER TERM

- **Revision and exam techniques**– Students will continue to recap all topics and complete exam style questions to prepare them for their exam in June.

BUILDING EXCEPTIONAL YOUNG MEN