

BUSINESS, COMPUTING AND ICT

Department Aims

The aim of the Business, Computing & ICT department is to equip the students with the necessary knowledge, skills and competencies in order to prepare them for their future lives whether it be further education or going into the world of work.

Department Ethos

To be the best we can be, to constantly reflect on our activities and to see change as an opportunity, not a threat.

Department Staff

Mr A Percival - Head of Department

Mrs S Routledge-Brown – Teacher of Business Studies with responsibility for BTEC Business & Second in Department

Mrs D Champ – Teacher of Business Studies with responsibility for A Level Business & Third in Department

Mrs C Rixson – Teacher of Computer Science and ICT

Mrs L Douthett – Teacher of Computer Science and ICT

Mrs E Eddison – Teacher of Computer Science

Out of school activities

G12 is available for students to use at the times below in order for students to complete work in all subject areas. The room is supervised by a member of staff should students require assistance.

Day	Before School 7.30am – 8.20am	Lunchtime 1.10pm – 1.45pm	After School 3.15pm – 4.15pm
Monday	✓	✓	Closed for Intervention
Tuesday	✓	✓	Closed for Intervention
Wednesday	✓	✓	Closed for Intervention
Thursday	✓	✓	Closed for Intervention
Friday	✓	✓	Closed

All students are expected to bring the following equipment to lessons:

- Pen (Blue/Black, Red and Green)
- Pencil
- Ruler
- Rubber

Homework is set as and when required but tends to be every week. Failure to complete homework by the deadline is likely to result in a detention of up to 15 minutes and the homework handed in the following day.

ICT & Computing Curriculum Overview - From September 2018

Key Stage 3 Years 7 and 8

In Key Stage 3, the Department teaches both ICT and Computer Science to Year 7 and Year 8 students. The department aims to ensure that students learn ICT skills and knowledge that will support their future GCSEs and result in valuable life skills as well as introduce the subject of Computer Science so that they have a good grounding to embark on the GCSE Computer Science course as an option. Students are assessed through assessments at the end of each module taught.

All students receive 1 x 60 minute lesson of Computer Science each week, during which each student has access to an individual computer for the duration of the lesson. In addition students receive a 9 week block of 2 x 60 minute lessons per week of ICT.

Year 7 Computer Science

- Introduction to ICT & Computing at Shirley

- At the end of this Unit all pupils should be able to:
 - Use basic file management techniques to create folders, save, copy, move, rename and delete files and folders and make backup copies of files
 - Recognise extensions for common file types such as .doc or .docx, .ppt, .jpg etc.
 - Keep their files in well organised and appropriately named folders
 - Explain what constitutes a “strong” password for an online account
 - Describe a code of conduct
 - List some of the dangers and drawbacks of social networking sites
 - List some possible responses to cyberbullying
 - Send and reply to emails, send attachments
 - Use a search engine to find information

- Control Systems with FLOWOL

- At the end of this Unit all pupils should be able to:
 - Identify everyday situations where computer control is used
 - Identify common types of sensors used by control systems
 - Identify control flowchart symbols and understand how they are used to break down problems
 - Produce flowchart-based solutions for control systems that include sequences and loops

- Graphics

- At the end of this Unit all pupils should be able to:
 - Explain that bitmap images are made up of individual pixels
 - Explain that in the case of a vector graphic, properties such as position, fill, stroke colour and dimensions are stored
 - Create and manipulate a simple group of objects to form a logo design
 - Change the saturation, brightness and contrast in an image
 - Add text to a graphic
 - Use a graphics package to create an artwork; for example, a movie poster

- Spreadsheet Modelling

- At the end of this Unit all pupils should be able to:
 - Give examples of how computer models are used in the real world
 - Format a simple spreadsheet model
 - Use simple formulae and functions
 - Name cells in a spreadsheet model
 - Use a simple spreadsheet model to explore different “what if” scenarios

- Create a basic pie chart to display results

- Building Apps Using A Web-App Builder

- At the end of this Unit all pupils should be able to:
- evaluate a simple GUI (Graphical User Interface)
- create a simple GUI (Graphical User Interface) within a web application
- explain the processes involved in building an app
- understand the term 'Home Screen'
- build a photo gallery
- use the map building tool

HTML and website Development

- At the end of this Unit all pupils should be able to:
- Write HTML code to create a simple web page and display it in a browser
- Write CSS to define the styles used in a web page
- Create a simple navigation system using HTML
- Use a design to create a template for a web page using HTML
- Create their own multi-page website
- Insert text, images and links on their web pages

Introduction to basic programming

- At the end of this Unit all pupils should be able to:
- Run simple Python programs in Interactive and Script mode
- Write pseudocode to outline the steps in an algorithm prior to coding
- Write programs using different types of data (e.g. strings and integers)
- Correctly use different variable types (e.g. integer and floating point), assignment statements, arithmetic operators
- Distinguish between syntax and logic errors and be able to find and correct both types of error
- Use relational operators to control the order in which program statements are executed and in what order (if and while statements)
- Use comments to document their programs and explain how they work

Spreadsheet Modelling

- At the end of this Unit all pupils should be able to:
- Give examples of how computer models are used in the real world
- Format a simple spreadsheet model
- Use simple formulae and functions
- Name cells in a spreadsheet model
- Use a simple spreadsheet model to explore different "what if" scenarios
- Create a basic pie chart to display results

Year 8 Computer Science

Computer Crime and Cyber Security

- At the end of this Unit all pupils should be able to:
- Name the major Acts concerning computer use
- Describe briefly some of the dangers of putting personal data on social networking sites
- Describe briefly ways of protecting online identity and how to report concerns
- Identify some of the signs of fraudulent emails and respond appropriately
- Adhere to Copyright Law when using written text, downloading music etc.

- List some of the Health and Safety hazards associated with computer use
- Describe how to safely dispose of an old computer

Understanding Computers

- At the end of this Unit all pupils should be able to:
 - Distinguish between hardware and software
 - Give examples of computer hardware and software
 - Draw a block diagram showing CPU, input, output and storage devices
 - Name different types of permanent storage device
 - Suggest appropriate input and output devices for a simple scenario
 - Explain what RAM and ROM are used for
 - Show how numbers and text can be represented in binary
 - Explain the impact of future technologies

Building Apps Using A Web-App Builder

- At the end of this Unit all pupils should be able to:
 - Evaluate a simple GUI (Graphical User Interface)
 - Create a simple GUI (Graphical User Interface) within a web application
 - Explain the processes involved in building an app
 - Understand the term 'Home Screen'
 - Build a photo gallery
 - Use the map building tool

Sound Editing In Audacity

- At the end of this Unit all pupils should be able to:
 - Explain how sound is digitized
 - Use input and output devices to record and play sounds
 - Select suitable materials for a project
 - Use basic editing techniques to produce a sound file
 - Work collaboratively to give and receive feedback on work done by others
 - Most pupils will be able to:
 - Select appropriate material for a specific audience
 - Combine speech, music and sound effects from different sources into one end product
 - Use more sophisticated editing techniques
 - Explain how their product meets the given brief
 - Some pupils will be able to:
 - Plan and create a project with the minimum of assistance
 - Include a range of suitable techniques and effects to produce an effective product that meets specification

Further Programming in Python

- At the end of this Unit all pupils should be able to:
 - Use data types correctly and convert between them when necessary
 - Write programs that use a loop to repeat a section of code
 - Write programs that use lists (known as 'arrays' in some languages)
 - Create and call a function or procedure
 - Find and debug syntax errors
 - Look at a given section of code and describe its function

Year 7 & 8 ICT

This course encourages students to develop the skills to be able to use the 3 main

Microsoft Office programs to produce professional-looking documents.

Topic 1: Microsoft PowerPoint Students develop the skills to produce high-quality presentations, using a variety of tools including charts, graphs and drawn objects.

Topic 2: Microsoft Word Students develop the ability to create word-processed documents: entering text, editing and formatting work, using tables and pictures and effectively using the spell-checker.

Topic 3: Microsoft Excel Students develop a working knowledge of spreadsheets, from entering data, formulae (basic and advanced) and formatting worksheets, to creating charts and producing high-quality documents.

Key Stage 4 Information

Computer Science GCSE

Computer Science offers students the opportunity to:

- Gain a real understanding of the way computers work inside;
- Create computer programs that could be used for real-life purposes. At the moment students are assessed via 3 units:
- Unit 1: Written Exam Paper – 1 ½ hours in length and externally marked by exam board - 50%
- Unit 2: Series of short tasks solving problems using computers - 2 hours in length and externally marked by exam board - 30%
- Unit 3: Controlled Assessment – 20 hours (max) in length whereby students develop a piece of work using programming software following a task brief issued by exam board - 20%

GCSE Topic Overview:

Year 9

Computer Systems - Inputs, Outputs, Storage (memory etc.), Processes (CPU)

Computational Thinking and Programming

How data is represented in a computer (including converting Denary to binary and hexadecimal and vice versa)

Data Representation & Data Types

Computer Software

Functions of Operating Systems

Year 10

Preparation for practical investigation (Unit 3 project)

Different types of networks

Internet & Communications (html programming, compression, encryption etc.)

Complete Unit 3 project

Ethical, Social & Legal Aspects, Data Structures and Organisation of Data

Year 11

Introduce and complete Unit 3 project

Revision/Mocks

Revisiting practical investigation work bearing in mind exam board report PLUS Security and Data Management

Revisiting weak areas (identified by mock etc)/preparing for Unit 2 exam

Revision for Units 1 & 2 exams

Business Studies GCSE

Business Studies offers students the opportunity to actively engage in the study of business and to develop as effective and independent learners. It also aids them in becoming critical and reflective thinkers with enquiring minds. The course will also focus on improving key skills such as communication, application of number, ICT, problem solving and working with others.

Assessment Objectives

The students will be assessed on their ability to

- Recall, select and communicate knowledge.
- Apply knowledge in different contexts, plan and carry out investigations.
- Analyse and evaluate evidence and make reasoned judgements.

GCSE Topic Overview

- 3.1 Business in the real world
- 3.2 Influences on business
- 3.3 Business operations
- 3.4 Human resources
- 3.5 Marketing
- 3.6 Finance

Delivery

Year 9

- 3.1 Business in the real world
- 3.4 Human resources

Year 10

- 3.2 Influences on business
- 3.3 Business operations

Year 11

- 3.5 Marketing
- 3.6 Finance

Assessment Methods

Paper 1: Influences of operations and HRM on business activity

- Written exam: 1 hour 45 minutes
- 90 marks
- 50 % of GCSE

Which contains

- Section A has multiple choice questions and short answer questions worth 20 marks.

- Section B has one case study/data response stimuli with questions worth approximately 34 marks.
- Section C has one case study/data response stimuli with questions worth approximately 36 marks

Paper 2: Influences of marketing and finance on business activity

- Written exam: 1 hour 45 minutes
- 90 marks
- 50 % of GCSE

Which contains

- Section A has multiple choice questions and short answer questions worth 20 marks.
- Section B has one case study/data response stimuli with questions worth approximately 34 marks.
- Section C has one case study/data response stimuli with questions worth approximately 36 marks.

Key Stage 5 Information

The Department offer the EDUQAS Computer Science and the AQA Business Studies A-Level courses as well as the Edexcel BTEC Business Level 3 Extended Diploma.

In Key Stage 5 all students who opt to study the AS/A2 Level in ICT or Business Studies receives 8 X 60 minute lessons in each subject over a 2 week period. Those students who opt to study the BTEC Business course receive 24 x 60 minute lessons over a 2 week period.

Additional lessons are organised in order to support students with their studies. In all three Level 3 courses, Computer Science and Business, it is vital that students engage in the reading of articles detailing ICT/Computer Science developments respectively in our everyday lives to enhance their understanding of the theoretical aspects they study in class.

Computer Science A2

This course is starting September 2017. This course encourages learners to develop:

- An understanding of, and the ability to apply, the fundamental principles and concepts of computer science, including abstraction, decomposition, logic, algorithms and data representation.
- The ability to analyse problems in computational terms through practical experience of solving such problems, including writing programs to do so the capacity for thinking creatively, innovatively, analytically, logically and critically.
- The capacity to see relationships between different aspects of computer science.
- The ability to articulate the individual (moral), social (ethical), legal and cultural opportunities and risks of digital technology.

A-Level Topic Overview

Year 12 Computer Science

Autumn Term

Hardware and Communication - Component 2.1
Data Transmission - Component 2.2
Data Representation and data types - Component 2.3
Algorithms and programs - Component 1.3
(Introduction to Python)
The Operating System - Component 2.6

Spring Term

Data Representation and data types - continued
Organisation and structure of data - Component 2.4
Databases and distributed systems - Component 2.5
The Operating System - continued
Different Types of Software Systems - Component 2.7
Data security and integrity - Component 2.8

Summer Term

Economic, moral, legal, ethical and cultural issues relating to computer science - Component 1.9
Data structures - Component 1.1
Logical Operations - Component 1.2
Preparation for Programmed Solution – Component 3

Year 13 Computer Science

Autumn Term

Production of Programmed Solution to a Problem - Component 3 (Non Examination Assessment)
Principles of programming - Component 1.4

Spring Term

Systems Analysis - Component 1.5
System Design - Component 1.6
Software Engineering - Component 1.7
Program Construction - Component 1.8

Summer Term

Revision

Method of Assessment at the end of Year 13

Component	Maximum Raw Mark	Scaling factor	Scaled Maximum Mark	% Weighting
C1	100	2	200	40

C2	100	2	200	40
C3	100	1	100	20

A level qualifications are reported as a grade from A* to E. Results not attaining the minimum standard for the award will be reported as U (unclassified).

BUSINESS STUDIES - A2

The department delivers the Edexcel A-Level in Business.

Edexcel A-Level Business (New Linear Spec)

Course Description

The A-Level course contains three components and each component is an externally assessed written examination.

Theme 1: Marketing and people

Students will develop an understanding of:

- meeting customer needs
- the market
- marketing mix and strategy
- managing people
- entrepreneurs and leaders.

Theme 2: Managing business activities

Students will develop an understanding of:

- raising finance
- financial planning
- managing finance
- resource management
- external influences

Overview of Edexcel A-Level Business Studies Topics - Year 2

Theme 3: Business decisions and strategy

This theme develops the concepts introduced in Theme 2. Students will develop an understanding of:

- business objectives and strategy
- business growth
- decision-making techniques
- influences on business decisions
- assessing competitiveness
- managing change.

Theme 4: Global business

This theme develops the concepts introduced in Theme 1. Students will develop an understanding of:

- globalisation
- global markets and business expansion
- global marketing
- global industries and companies (multinational corporations).

BTEC LEVEL 3 EXTENDED DIPLOMA IN BUSINESS (equivalent to 3 A-Levels)

This is a two year course in Business and is the equivalent of three A-Levels, and will prepare students for employment or for entry into higher education.

The course allows students to develop practical skills and theoretical understanding of the world of business and complete projects investigating topics such as marketing, financial analysis, website design and retail strategies. At the end of the course, successful students will have a good knowledge of the wide world of business and a practical skill set that will prepare them for the next stage in their business career.

During the course students will develop their group work, IT and presentation skills. The units they will study include elements of accounting, marketing, human resource management and website design.

Method of Assessment

Students must complete seven mandatory units plus a further 6 optional units that provide for a combined total of 180 credits.

This course has 4 externally assessed units and 9 internally assessed units.

BTEC Overview of Topics

UNIT	TITLE
TWO (Externally assessed)	Developing a Marketing Campaign
THREE (Externally assessed)	Personal and Business Finance
FOUR	Managing an Event
FIVE	International Business
EIGHT	Recruitment and Selection
NINE	Team Building in Business

YEAR 13

UNIT	TITLE
ONE	Exploring Business
SIX (Externally assessed)	Principles of Management
SEVEN (Externally assessed)	Business Decision Making
SEVENTEEN	Digital Marketing
EIGHTEEN	Creative Promotion
NINETEEN	Pitching for a New Business
TWENTY ONE	Training and Development