BTEC Level 1 & 2 Tech Award in Digital Information Technology (DIT)
Curriculum Overview

Intent

At Oldbury Academy, Computing Faculty we intend for students to learn, develop and recall the required knowledge and skills as outlined by the exam board specification. Whilst the key knowledge and skills will be embedded throughout the curriculum, students' learning will be established through practical examples of real life contexts and that of the local area. This intent aims at inspiring students to become independent learners and to achieve a level 3 qualification or move onto the world of Cyber security/IT

Students complete 3 components and develop spreadsheet skills and real life user interface software knowledge. The final component recalls on knowledge only and the learning that has taken place in Year 11

What will I study?

See below

How will I be assessed?

Students achieve BTEC tech grade: pass, merit or distinction.

Component 1 is coursework worth 30% of overall grade.

Component 2 is coursework worth 30% of overall grade.

Component 3 is an exam worth 40% of overall grade

What skills will I need?

The course is designed to encourage students to be independent thinkers and devise a solution to a problem in the form of a spreadsheet and a user interface. Skills used include: data analysis and interpretation, group work, individual research, planning and report writing, software specific skills. Students will make extensive use of IT and Google online facilities.

What happens in lessons?

All of our lessons are varied

- Working as a group to discuss ideas
- Independent research activities
- Teacher led for software demonstration
- Taking part in visits relevant to Component 1

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	Year 10	Year 11
Autumn	**Overview** **Component 1 (BIT01)** Exploring User Interface Design Principles and Project Planning Techniques **Learning Aim A** Investigate user interface design for individuals and organisations **Learning Aim B** Use project planning techniques to plan and design a user interface **Learning Aim C** Develop and review a user interface	**Overview** **Component 3 (BIT 03) EXAM COMPONENT** **(Continued from Year 10 Summer Term).** Effective Digital Working Practices **LA – B** System attacks and external threats, internal threats, user restrictions, data level protection, policies, back ups and recovery, **LA – C** Shared data, environmental issues, equal access, acceptable use policies, data protection, criminal use of ICT. **LA – D** Data and information flow diagrams, flowcharts, system diagrams, tables and written information
	Skills – Learning Aim A- • Understand different types of user interfaces used by individuals and organisations: – Define user interfaces and understand their software and human features – Know different types of interface including text base, speech, GUI/WIMP, sensor, menus and forms – Know a range of uses including computers, handheld devices, entertainment systems, domestic appliances, controlling devices and embedded systems • Be able to investigate the needs of audiences and how they affect the design of interfaces including: – Skill level – expert, regular, occasional, novice – Demographics – age, past experiences • Understand design principles for effective user interaction including: – Colour – Font style • Investigate a variety of design principles including: – User perception of colour and symbols – Retaining user attention by grabbing attention and labelling items – pop-up messages, help features, reversal of actions **Learning Aim B:** • Understand what project planning tools are used to plan a user interface – Gantt charts	**Knowledge Component 3** **LA – B** System attacks and external threats, internal threats, user restrictions, data level protection, policies, back ups and recovery. **All students will be able to:** • Understand why systems are attacked • Describe the external threats virus, Trojan, phishing and shoulder surfing • Understand the internal threats of stealing or leaking information, overriding security controls and downloads from the internet and untrustworthy websites • Understand the impact of security breaches including data and financial loss • Describe user access restrictions including physical security measures and passwords • Understand how computers are protected with anti-virus software • Understand how backups are used to recover data. **LA – C** Shared data, environmental issues, equal access, acceptable use policies, data protection, criminal use of ICT. **All students will be able to:**

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	• Be able to investigate the waterfall, agile and scrum methodologies • When creating a project proposal understand the following – User accessibility requirements – Constraints • When creating a project plan understand: – Key milestones • Create an initial design that includes: – Input and output requirements – User accessibility needs • Produce a design specification that includes: – Visualisation such as storyboard and sketches – Hardware and software requirements • Discuss the aims of the design • Develop an initial design using the following design principles: – Language – Layout – User perception – Retaining user attention – Intuitive design • Be able to review the success of the user interface including the strengths and weaknesses in: – Suitability for purpose and audience – Ease of use – Accessibility features – How effectively the design principles have been met • Suggest improvements that could be made to the user interface to better meet the audience needs **Learning Aim C:** • Understand what are SMART aims/objectives • Evaluate the strengths and weaknesses of user interfaces: • Explain how a user interface is easy to use and suitability for different audiences and purpose • Demonstrate the testing of user interface	• Explain how data is shared between organisations • Understand the responsible use of data with respect to privacy • Understand the impact of manufacture, use and disposal of IT systems on the environment • Understand the importance of providing equal access to digital services and information • To understand the purpose and use of acceptable use policies • To understand Data protection principles • To understand the criminal use of computer systems including unauthorised access and modification of materials. **LA – D** Data and information flow diagrams, flowcharts, system diagrams, tables and written information **All students will be able to:** • interpret a simple data flow diagram • interpret an information flow diagram • state the use of a flowchart • draw a simple flowchart to describe the steps in an activity or process • follow a simple flowchart to show what the output will be
	Assessments Controlled Assessment window opens from 15th September 2024 to 15 December 2024. **Component 1 will be submitted by end of Autumn Term.**	**Assessments** ***Mini Assessments at the end of each Learning Aim.*** ***Supported by regular class tests / reflective tasks***

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		Mock Exam in Nov 2024. **All Year 11 DIT students will sit the BIT03 exam in January 2025 Exam window.**
Spring	**Overview** **<u>Component 2 (BIT02)</u>** Collecting, Presenting and Interpreting Data **Learning Aim A** Investigate the role and impact of using data on individuals and organisations. **Learning Aim B** Create a dashboard using data manipulation tools **Learning Aim C** Draw conclusions and review data presentation methods	**Overview** **Component 3 (Re-sits)** **All students who did not achieve their target grade will be entered for the June 2025 Exam window for the re-sits.** Component 3 Effective Digital Working Practices (BIT03) **LA – A** Communication technologies, cloud storage and computing, using cloud technologies, inclusivity and accessibility, impacts of modern technology **LA – B** System attacks and external threats, internal threats, user restrictions, data level protection, policies, back ups and recovery,
	Skills **Component 2** Collecting, Presenting and Interpreting Data **Learning Aim A** - Investigate the role and impact of using data on individuals and organisations. **All students will be able to:** At the end of this Learning Aim all students should be able to: • Understand data is unprocessed and has no: – Meaning – structure – context • Understand information is processed data and has: – meaning – structure – context • Understand the different ways of presenting information as: – Text – Numbers – Tables – Graphs/charts	**Skills** **LA – A** Communication technologies, cloud storage and computing, using cloud technologies, inclusivity and accessibility, impacts of modern technology **All students will be able to:** • Describe setting up and using ad hoc networks • Describe changes to modern teams facilitated by modern technologies: - Based worldwide, multicultural, inclusive, in different time zones, flexible • Describe how modern technologies can be used to manage modern teams: - Collaboration tools, communication tools, scheduling and planning tools • Describe how organisations use modern technologies to communicate with stakeholders: - Communication platforms (website, social media, email, voice communication) • Describe features and uses of cloud storage including synchronisation of cloud and individual devices and availability (24/7) • Describe features and uses of cloud computing including online applications and collaboration tools/features • Describe how notifications are used in cloud and traditional systems **LA – B**

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- Understand the following validation methods:
  - Range check
  - Presence check
  - Length check
- Understand the following verification methods:
  - Proofreading
  - Double entry
- Understand the following data collection methods:
  - Primary data – including interviews, questionnaires, surveys
  - Secondary data – including websites, books
- Understand that different types of organisations use data modelling to help make decisions including:
  - Transport
  - Education
  - Retail
  - Entertainment
  - Sport and fitness

Learning Aim B
Create a dashboard using data manipulation tools

All students will be able to:

- Understand how data is imported from files and the Internet
- Understand the following basic features of spreadsheets:
  - Formulae – including add, divide, subtract, multiply
- Understand and be able to use functions:
  - Basic functions: SUM, AVERAGE, MIN, MAX
- Be able to outline data with the following features:
  - Subtotal: AVERAGE, SUM, MIN, MAX, COUNT, COUNTA
- Understand the following processing methods:
  - Multiple and linking worksheets (for dashboard and raw data)
  - Cell comments
  - Alternative views including hiding/unhiding cells and freezing panes
  - Conditional formatting including data bars, colour scales, icon sets
- Make use of appropriate presentation methods:
  - Tables
  - Graphs and charts

System attacks and external threats, internal threats, user restrictions, data level protection, policies, back ups and recovery.

All students will be able to:

- Understand why systems are attacked
- Describe the external threats virus, Trojan, phishing and shoulder surfing
- Understand the internal threats of stealing or leaking information, overriding security controls and downloads from the internet and untrustworthy websites
- Understand the impact of security breaches including data and financial loss
- Describe user access restrictions including physical security measures and passwords
- Understand how computers are protected with anti-virus software
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- Use appropriate presentation features including:
  - Font size, style and colour; cell borders and shading
  - Graphics; axis labels; titles; merge cells; text wrap
- Use the dashboard to:
  - Explain the methods used to present data so that it can be clearly understood with detailed examples
  - Identify trends, patterns and possible errors in the data
- Produce a dashboard that includes the following:
  - Data summaries including totals, counts, averages and percentages

Learning Aim C
Draw conclusions and review data presentation methods

All students will be able to:

- Understand how data is imported from files and the Internet
- Understand the following basic features of spreadsheets:
  - Formulae – including add, divide, subtract, multiply
- Be able to use the following basic features:
  - Sorting – including multiple columns and values
- Be able to outline data with the following features:
  - Subtotal
- Understand the following processing methods:
  - Multiple and linking worksheets (for dashboard and raw data)
  - Cell comments
  - Alternative views including hiding/unhiding cells, freezing panes
  - Conditional formatting including data bars, colour scales, icon sets
- Produce a dashboard that includes the following:
  - Data summaries including totals and counts
- Make use of appropriate presentation methods including:
  - Graphs and charts
- Use appropriate presentation features including:
  - Font size, style and colour; cell borders and shading
- Be able to create pivot tables including
  - Dynamic charts/graphs based on pivot tables
- Use the dashboard to:

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	– Explain the methods used to present data so that it can be clearly understood with detailed examples – Identify trends in the data	
	Assessments **Controlled Assessment window opens from 15th January 2024- 15 May 2025.** **Component 2 Controlled Assessment will be submitted by end of Spring Term 2.**	**Assessments** ***Mini Assessments at the end of each Learning Aim.*** ***Supported by regular class tests / reflective tasks*** **Mock Exam in Feb 2025.**
Summer	**Overview** **Component 3 (BIT03) – EXAM COMPONENT -** Effective Digital Working Practices **LA – A** Communication technologies, cloud storage and computing, using cloud technologies, inclusivity and accessibility, impacts of modern technology	Component 3 – Recap of skills **LA – C** Shared data, environmental issues, equal access, acceptable use policies, data protection, criminal use of ICT. **LA – D** Data and information flow diagrams, flowcharts, system diagrams, tables and written information
	Skills **All students will be able to:** • Describe setting up and using ad hoc networks • Describe changes to modern teams facilitated by modern technologies: - Based worldwide, multicultural, inclusive, in different time zones, flexible • Describe how modern technologies can be used to manage modern teams: - Collaboration tools, communication tools, scheduling and planning tools • Describe how organisations use modern technologies to communicate with stakeholders: - Communication platforms (website, social media, email, voice communication) • Describe features and uses of cloud storage including synchronisation of cloud and individual devices and availability (24/7) • Describe features and uses of cloud computing including online applications and collaboration tools/features	**LA – C** Shared data, environmental issues, equal access, acceptable use policies, data protection, criminal use of ICT. **All students will be able to:** • Explain how data is shared between organisations • Understand the responsible use of data with respect to privacy • Understand the impact of manufacture, use and disposal of IT systems on the environment • Understand the importance of providing equal access to digital services and information • To understand the purpose and use of acceptable use policies • To understand Data protection principles • To understand the criminal use of computer systems including unauthorised access and modification of materials. **LA – D** Data and information flow diagrams, flowcharts, system diagrams, tables and written information

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	• Describe how notifications are used in cloud and traditional systems	**All students will be able to:** • interpret a simple data flow diagram • interpret an information flow diagram • state the use of a flowchart • draw a simple flowchart to describe the steps in an activity or process • follow a simple flowchart to show what the output will be
	Assessments ***Mini Assessments at the end of each Learning Aim.*** ***Supported by regular class tests / reflective tasks***	**Assessment** ***Mini Assessments at the end of each Learning Aim.*** ***Supported by regular class tests / reflective tasks*** **Component 3 Exam – 1st May 2025**