Digital Information Technology

	Composite 1: Exploring User Interface Design Principles and Project Planning Techniques	Composite 2: Collecting, Presenting and Interpreting Data	Composite 3: Effective Digital Working Practices
Curriculum Content	**Component A** Understand interface design for individuals and organisations A1 User Interfaces ● Types of user interface ● Range of uses and devices ● Factors affecting the choice of user interface ● Hardware and software influences A2 Audience Needs ● Accessibility needs ● Skill level ● Demographics A3 Design principles ● Colours ● Font style/size ● Language ● Amount of information ● Layout ● User perception ● Retaining user attention ● Intuitive design A4 Designing an efficient user interface ● Use of keyboard shortcuts ● Informative feedback ● Easy reversal of actions ● Ensuring buttons/links are distinguishable ● Using bigger objects to influence selection and reduce selection time ● Making objects stand out to reduce focus time ● Placing related objects next to each other to reduce selection time. **Component B** Be able to use project planning techniques to plan, design and develop a user interface B1 Project planning techniques ● Planning tools ● Methodologies B2 Creating a project proposal ● Purpose and audience. ● Project requirements ● User accessibility requirements. ● Constraints ● Project plan ● Timescales	**Component A** Understand materials, components and processes for a given engineered product A1 Characteristics of data and information ● Characteristics of data ● Characteristics of information A2 Representing information ● Text ● Numbers ● Tables ● Graphs/charts ● Sparklines ● Infographics. A3 Ensuring data is suitable for processing ● Validation methods ● Verification methods A4 Data collection ● Data collection methods ● Data collection features A5 Quality of information ● Quality of information factors A6 Sectors that use data modelling ● Types of sectors A7 Threats to individuals ● Threats to individuals **Component B** Be able to create a dashboard using data manipulation tools B1 Data processing methods ● data manipulation methods ● advanced manipulation methods ● other processing methods B2 Producing a dashboard ● Showing data summaries from the data set ● Appropriate presentation methods ● Using appropriate presentation features **Component C** Be able to draw conclusions and review data presentation methods C1 Drawing conclusions based on findings in the data ● Findings	Component 3 consolidates the skills and knowledge acquired in Composites 1 and 2 and is synoptic. **Component A** Modern technologies A1 Modern technologies ● Communication technologies ● Features and uses of cloud storage ● Features and uses of cloud computing ● How the selection of platforms and services impacts on the use of cloud technologies ● How cloud and 'traditional' systems are used together ● Implications for organisations when choosing cloud technologies A2 Impact of modern technologies ● Changes to modern teams facilitated by modern technologies ● How modern technologies can be used to manage modern teams ● How organisations use modern technologies to communicate with stakeholders ● How modern technologies aid inclusivity and accessibility ● Positive and negative impacts of modern technologies on organisations ● Positive and negative impacts of modern technologies on individuals **Component B** Cyber security B1 Threats to data ● Why systems are attacked ● External threats (threats outside the organisation) to digital systems and data security ● Internal threats (threats within the organisation) to digital systems and data security ● Impact of security breach B2 Prevention and management of threats to data ● User access restriction ● Data level protection ● Finding weaknesses and improving system security B3 ● Defining responsibilities ● Defining security parameters ● Disaster recovery policy ● Actions to take after an attack **Component C** The wider implications of digital C1 Responsible Use ● Shared data (location-based data, transactional data, cookies, data exchange between services)

	B3 Creating an initial design ● Producing a design that meets user requirements and user accessibility needs. ● Producing a design specification ● Producing a design B4 Developing a user interface ● Initial design using the design principles listed in A3 Design principles. <u>Component C</u> **Be able to review a user interface.** C1 Review ● Strengths and weaknesses of the user interface ● Suggest improvements	C2 How presentation affects understanding ● information being misinterpreted ● information being biased ● inaccurate conclusions being made.	● Environmental C2 Legal and ethical ● Importance of providing equal access to services and information ● Net neutrality and how it impacts on organisations. ● The purpose and use of acceptable use policies ● Blurring of social and business boundaries ● Data protection principles ● Data and the use of the internet ● Dealing with intellectual property ● The criminal use of computer systems <u>Component D</u> **Planning and communication in digital systems** D1 Forms of notation ● Understand how organisations use different forms of notation to explain systems, data and information ● Be able to interpret information presented using different forms of notation in a range of contexts. ● Be able to present knowledge and understanding using different forms of notations.
Prior knowledge and skills (from previous year / key stage)	Some students will have covered basic programming (scratch) in KS2 Computer Science. Most students should have experienced Computer Science as a KS3 rotation subject in year 9. Some students will also have had experience in year 8 and year 7, but due to covid related disruption this will not apply to all students. Due to the mixed previous experiences of students, no prior knowledge will be assumed.	While Component 1 is complimentary to Component 2's, knowledge and skills do not build on those of Component 1.	Component 3 consolidates and assesses learning from Components 1 and 2.
Assessment Objectives			**AO1** Demonstrate knowledge of facts, terms, processes and issues **AO2** Demonstrate an understanding of facts, terms, processes and issues **AO3** Apply an understanding of facts, terms, processes and issues **AO4** Make connections with the concepts, issues, terms and processes
Vocabulary / Key Subject Terminology	o Software o Operating System o Interface o GUI o Maintainability o Logical o Iterative o Proprietary o Open Source o Analogue o Digital o Binary o Hexadecimal o Conversion o Denary o Character set o ASCII o Unicode o Abstraction o Gantt Chart o Milestone	o Data types o Validation o Maintainability o Error o Logical o Syntax o Software o Data o Analogue o Digital o Binary o Hexadecimal o Conversion o Denary o Character set o ASCII o Unicode o Pseudocode o Flowchart o Abstraction o Decomposition	o Cloud Computing o Virus o Hacker o Attack o DDOS o Protection o Environmental o Cultural o Moral o Ethical o Misuse o Copyright

		- Selection - Sequence - Function - Procedure - Data types - Validation	
Assessment 1	Knowledge retrieval questions	Knowledge retrieval questions	Knowledge retrieval questions
Assessment 2	Internal Assessment Component 1 SAM	Internal Assessment Component 2 SAM	External Assessment Mock (SAM)
Assessment 3	Internal Assessment Component 1	Internal Assessment Component 2	External Assessment
Assessment 4			
Assessment 5			
Cross Curricular Links with other Faculties	- Science: Moments, levers and gears, fluid pressure. - Literacy: Articles related to engineering sectors, products, companies and job roles.	- Numeracy: Measuring and marking out - Science: use of keywords - Literacy: articles about materials and their application, interpreting engineering briefs	- Numeracy: Measuring and marking out. - Science: application of scientific principles - Literacy: interpreting engineering briefs
Knowledge Organiser content	Component 1 keywords	Component 2 keywords	Component 3 keywords
British Values	'Rule of Law' and why we have rules and regulations in the Computer rooms 'Mutual Respect' and 'Tolerance' will be encouraged throughout all discussions. 'Mutual Respect' and 'Tolerance' will also be referred to during all knowledge organiser quizzes.	'Rule of Law' and why we have rules and regulations in the Computer rooms 'Mutual Respect' and 'Tolerance' will be encouraged throughout all discussions. 'Mutual Respect' and 'Tolerance' will also be referred to during all knowledge organiser quizzes.	'Rule of Law' and why we have rules and regulations in the Computer rooms 'Mutual Respect' and 'Tolerance' will be encouraged throughout all discussions. 'Mutual Respect' and 'Tolerance' will also be referred to during all knowledge organiser quizzes.
Extra-Curricular Offer			