Computer Science

Y11 2021-2022

Autumn Term
1.4.1 Threats to computer systems and networks
1.4.2 Identifying and preventing vulnerabilities
1.5.1 Operating systems
1.5.2 Utility software
1.6.1 Ethical, legal, cultural and environmental impact
2.3.1 Defensive design
2.3.2 Testing
2.5.1 Languages
2.5.2 The Integrated Development Environment (IDE)
Spring Term
Practical programming skills revision
2.1.3 Searching and sorting algorithms
Searching and Sorting Practical Programming skills
Summer Term
Theory Revision
Practical Programming Skills Revision

Y10 2021-2023

2.4.1 Boolean logic
1.2.4 Data storage - Numbers
1.2.3 Units
2.1.2 Designing, creating and refining algorithms
2.2.1 Programming fundamentals
2.2.2 Data types
Practical Programming Skills
2.2.3 Additional programming techniques
Practical Programming Skills
1.2.4 Data storage - Characters
1.2.4 Data storage - Images
1.2.4 Data storage - Sound
1.1.1 Architecture of the CPU
1.1.2 CPU Performance
1.1.3 Embedded systems
1.2.1 Primary storage (Memory)
1.2.2 Secondary storage
1.3.1 Networks and topologies
1.3.2 Wired and wireless networks, protocols and layers
Practical Programming Skills Revision

Y11- 2022-2023 (subject to change)

Autumn
1.4.1 Threats to computer systems and networks
1.4.2 Identifying and preventing vulnerabilities
1.5.1 Operating systems
1.5.2 Utility software
1.6.1 Ethical, legal, cultural and environmental impact
2.3.1 Defensive design
2.3.2 Testing
2.5.2 The Integrated Development Environment (IDE)
Spring
Practical Programming Skills Revision
2.1.3 Searching and sorting algorithms
Searching and Sorting Practical Programming skills
Theory Revision
Summer Term
Theory Revision

B-Tec Digital Information Technology

Y10

Between September and March students work on the Component 1 - Exploring User Interface Design Principles and Project Planning Techniques. Students will learn the different 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.

During April through to July in Y10 students continue their technology journey and start Component 3 - Effective Digital Working Practices. Students learn about how current and modern technologies are used by and have an impact on organisations and their stakeholders. Students will learn the ways in which organisations and associated individuals use modern technologies to exchange information, communicate, and complete work-related tasks.

Students also embark on their spreadsheet skills journey in preparation for their component 2 assignment which they will complete in Y11. Students will learn about data that it is part of modern-day life and how data is collected and used to support decision-making a how it can be presented in ways that help make it easy to understand. They learn how to import large amounts of data, how to use data manipulation tools such as filtering, formulas to help analyse the trends in the data.

Y11

Between September to January students will continue their Component 3 journey - Effective Digital Working Practices. They will develop their understanding of legislation and any regulations that are relevant to the development of and IT solution. They will also develop an understanding of security and digital safety, examining how threats and vulnerabilities could impact on the solution the techniques that could be applied to reduce risk. Students will sit their examination in the February of Y11.

Between January and May students continue with component 2 - Collecting, Presenting and Interpreting Data. Student will investigate the role and impact of using data on individuals. Students will learn how to create a dashboard using data manipulation tools and then draw conclusions and review data presentation methods.

A-level Computer Science

	Y12 – Autumn
2.1.1	Programming Techniques
1.2.3	Software development
1.3.2	Database
2.2.1	
1.2.4	Types of programming language
2.1.1/2.1.2/2.1.3	Thinking abstractly, ahead, procedurally
2.1.4	Thinking logically
2.1.5	Thinking concurrently
Component 3 Project analysis this component continues until the February of Y13	
Spring Term	
1.2.2	Application generation
2.2.2	Computational Methods
1.4.1	Data types
1.3.2	databases
1.2.1	Operating systems
1.5.1	Computing related legislation
Component 3 Design	
Summer Term	
1.5.2	Ethical moral and cultural issues
1.4.2	Data structures
1.3.3	Networks
Component 3 Development and testing	

Y13 Autumn	
1.1.3	Input/output and storage
1.3.1	Compression, encryption, and hashing
1.1.1	Structure and function of the processor
2.3	Algorithms
1.4.3	Boolean Algebra
Component 3- Development and Evaluation	

Spring Term	
1.1.2	Types of Processors
1.3.4	Web Technology
1.4.1	Data Types
2.2.2	Computational Methods

Summer Term	
Revision	Preparation for A-level examinations