St Mary's CE High School Curriculum Map 2023 -24

BTEC Level 3 National Diploma in Information Technology Year 12 Double Qualification

Unit 8 Computer Games Development   Unit 11 Cyber Security and Incident Management

Autumn 1a	Autumn 1b	Spring 2a	Spring 2b	Summer 3a	Summer 3b
Learning Aim A: Cyber security threats, system vulnerabilities and security protection Learning Aim B: Use of networking architecture and principles for security Learning Aim C: Cyber security protection plan **Learning Aim A: Investigate technologies used in computer gaming**	Learning Aim C: Cyber security protection plan Learning Aim D: Cyber security documentation Learning Aim E: Forensic procedures **Learning Aim A: Investigate technologies used in computer gaming**	**Learning Aim A: Investigate technologies used in computer gaming** **Learning Aim B: Design a computer game to meet client requirements**	**Learning Aim B: Design a computer game to meet client requirements** **Learning Aim C: Develop a computer game to meet client requirements**	**Learning Aim C: Develop a computer game to meet client requirements**	**Learning Aim C: Develop a computer game to meet client requirements**

BTEC Level 3 National Diploma in Information Technology Year 12 Double Qualification

CONTENT					
A1 – Cyber security threats **A2 –** System vulnerabilities **A3 –** Legal responsibilities **A4 –** Physical security measures **A5 –** Software and hardware security measures **B1 –** Network types **B2 –** Network components **B3 –** Networking infrastructure services and resources **C1 –** Assessment of computer system vulnerabilities **C2 –** Assessment of the risk severity for each threat **A1 -** Social trends in computing	**C3 –** A cyber security plan for a system **D1 –** Internal policies **D2 –** External service providers **E1 –** Forensic collection of evidence **E2 –** Systematic forensic analysis of a suspect system **A2 –** Technologies used in computer gaming	**A2 –** Technologies used in computer gaming **B1 –** Computer games design processes and techniques	**B2 –** Design Documentation **B3 –** Reviewing and refining designs **C1 –** Principles of computer games development **C2 –** Developing computer games	**C3 –** Testing computer games **C4 –** Reviewing computer games	**C5 –** Quality characteristics **C6 –** Skills, knowledge and behaviours

SKILLS					
Students will learn about the different cyber security threats, including internal & external threats. They will learn the impact of a credible threat on an organisation. Students will explore the different types of system vulnerabilities and the legal responsibilities that apply to systems. Students will develop their understanding of physical, software and hardware security measures that can be used to protect systems. Students will develop their understanding of the different network types, network components and network infrastructure services and resources. They will learn how to secure these for organisational contexts.

Students will investigate the social trends relevant to computer games. Students will also develop | Students will look at the threats and system vulnerabilities and the culture of continuous need to protect organisations and individuals from the impact of loss. They will learn how to assess computer system vulnerabilities. They will learn how to use the risk severity matrix to assess the severity of each threat, from this they will produce a cyber security plan for a system. Students will learn how to complete cyber security documentation, including internal policies, incident response policies, disaster recovery policies. They will also learn about the external service providers policies and why they are needed. Students will understand the different methods of forensic collection of evidence following a cyber security | Students will also investigate the technologies used in computer gaming and understand that this is continuously evolving. Students will also develop their literacy, research and analysis techniques. Students will design a computer game to meet the needs of clients, this will include the design processes and techniques of designing a game. Students will need to produce a variety of design documentation, including but not limited to the type of gameplay, a data dictionary, algorithm design, storyboards etc. Students will develop their creative skills. | Students will review and refine their designs, to improve the quality, effectiveness and appropriateness of the designs. Students will develop their testing and development skills. Students will develop a computer game using the principles of computer game development. They will develop the visual style, the input methods, asset integration and any advanced features that their game requires. Students will develop their creativity skills and their technical game creation skills. | Students will test their computer game to ensure functionality of the game meets client requirements and carry out any necessary improvements. They will then review their game to ensure that it meets the client requirements and is suitable for its intended purpose. Students will develop their computer game skills and their ability to refine and improve their product to meet client needs. | Students will look at the quality characteristics of their game against other games. Finally, they will evaluate their own performance, knowledge and behaviours. Students will develop their data analysis skills and their evaluative skills. |

their literacy, research and analysis techniques.	incident and purpose. They will look at systematic forensic analysis of a suspect system. Students will also investigate the technologies used in computer gaming and understand that this is continuously evolving. Students will also develop their literacy, research and analysis techniques.				

St Mary's CE High School Curriculum Map 2023 -24

BTEC Level 3 National Diploma in Information Technology Year 12 Double Qualification

KEY QUESTIONS					
What are the main cyber security threats? What are the internal threats that can occur? What are the external threats that can occur? What are the system vulnerabilities that can occur? What are the legal responsibilities to a company? What are physical security measures? What are the key software and hardware security measures? What are the different network types and how can they impact upon cyber security? What are the different network components and how can they impact on cyber security? What are different networking infrastructure services and resources? How do they impact upon cyber security?	What is a cyber security plan? What are the stages of a cyber security plan? What is the risk severity matrix? What is a cyber security risk assessment? What is a cyber security plan for a system? What is cyber security documentation? What are the different internal policies? What is a incident response policy? What is a disaster recovery policy? What are external service providers? What are the different forensic procedures? How do we collect forensic evidence? What is systematic forensic analysis? What are the technologies that are used within computer gaming?	What are the different hardware options in computer gaming? What are the different software options in computer gaming? What is the purpose of game engines? What are the mathematical techniques and processes used in the development of games? What are the different game play features?	What are the different design documentations? Why is important to have a test plan? Why is it important to work with clients to improve the quality of designs? What is the importance of improving schematic documentation? What are the principles of computer game development? How can we develop computer games?	Why is it important to review computer games with the client? What is the importance of testing our game throughout the development process?	What are the quality characteristics? What skills, knowledge & behaviours are needed to develop a computer game?

	What are the social trends in computer gaming? What are the popular gaming genres?	What are the benefits and drawbacks of different gaming platforms?				
ASSESSMENT	Exam style questions based upon learning Aim A, B & C	Exam style questions based upon learning Aim A, B, C, D & E	Report investigating technologies used in computer gaming. A report showcasing the design of a computer game to meet client requirements. Exam will take place	A report showcasing the design of a computer game to meet client requirements. A report showcasing the development a computer game to meet client requirements	A report showcasing the design of a computer game to meet client requirements. A report showcasing the development a computer game to meet client requirements	A report showcasing the design of a computer game to meet client requirements. A report showcasing the development a computer game to meet client requirements