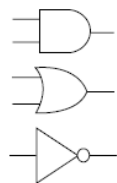




Curriculum Journey COMPUTER SCIENCE

University, Employment, Apprenticeships

FINAL EXAMS MOCK EXAMS PROGRAMMING



Year 11

EXAM UNIT

Designing defensively: Anticipating misuse Authentication

How do you use basic file handling operations: open, read, write, close?

How do you select and use suitable test data?

Logic Gates

BOOLEAN: AND Gate NOT Gate OR Gate

How to design, create and refine algorithms using flow charts

What are the characteristics of high and low level languages?

CT techniques: decomposition, abstraction, and algorithmic thinking

Computer disposals

Describing ethical considerations

Understand the impact of the Data Protection Act

Understand cultural and environmental requirements

SYSTEM ARCHITECTURE

ETHICAL, LEGAL, CULTURAL AND ENVIRONMENTAL CONCERNS

Von Neumann architecture

Types of computer systems: General and Purpose and Embedded

Explain specified legislation: Data Protection Act 2018 Computer Misuse Act 1990 Copyright patents and design Act 1988 Software licences

What is the impact of technology on wider society?

What are the needs for virtual memory?

Can you analyse system architecture, storage and memory?

Can you explain various aspects of a CPU



Do you have a practical understanding of binary?

Difference between cyber security and network security



MOCK EXAMS

MEMORY AND STORAGE

NETWORK SECURITY



Computer storage acronyms: CPU, RAM, ROM, HDD, SSD

Two state systems



Wired and wireless networks

How do we prevent network vulnerabilities?

Why do hackers hack?

What is Boolean logic?

Use of modules in Python

Data structures: Array and lists

Data types: Real, Integer, Boolean, Character and string, Casting

Networks in the modern digital age

Network Protocols

Networks and topologies



Year 10

PROGRAMMING FUNDAMENTALS

COMPUTER NETWORKS

Use of Construct3 to create a basic2D game



Iteration and loops

Translators & IDEs

Machine code

Debugging

What is an operating system?

What mobile operating systems are there?

What is systems software?

What is utility software?



GAMING WITH CONSTRUCT3

COMPUTER SYSTEMS

CYBER SECURITY

Year 9

How can we input CT into gaming?



How can we work with lists in Python?

Building a gaming PC for a given purpose

Introduction of internal components

Looking into protection online in regard to identity and privacy



How can we test programs effectively?



What is a network attack?

CPU & Memory

Understanding the different types of software



How does Wi-Fi work?

Program player movement

INTERMEDIATE GAMING

NETWORKS & THE INTERNET

PROGRAMMING



What does your router do?



What is a network?

What is Computational Thinking?

How can we write code to solve problems?

Can you incorporate variables?

What is the difference between LANs & WANs?

What are the basic principles of computer architecture?

What are health and safety environmental issues?

Looking over internet requirements

Looking at overviews of computer acts

Learn to test and debug programs



COMPUTER SYSTEMS

ONLINE COMMUNICATION

Year 8

How do computers store information?

How can we use electronics to design simple systems?



Can you describe different type of components?

How do we communicate online?



Can you develop your own program?

How does a computer execute code?



How will you design your game?

How do we identify pattern recognition?

GAMING WITH SCRATCH

BASIC PYTHON PROGRAMMING

How can we promote e-safety?

How can we help prevent cyber bullying?

How can we stay safe online?

Who invented the WWW?

What content would be included?

What kind of problems could we face?

What knowledge will you apply?

Do you have a good awareness of using social media?

What problem solving processes are within gaming?



PROBLEM SOLVING

INTERNET SAFETY

Year 7

EXTRA CURRICULAR



Can you operate micro controllers?

Can you establish an understanding of a computer system?

What basic digital literacy skills are required?

How can we present solutions?

design, write and debug programs that accomplish specific goals

solve problems by decomposing them into smaller parts



select, use and combine a variety of software



DIGITAL LITERACY

ONLINE COMMUNICATION

COMPUTER SYSTEMS

controlling or simulating physical systems

computer networks

use technology safely, respectfully and responsibly



XBOX