

Computer Science



Unit 1 – Fundamental of Algorithms

Students will study the following:

- The identification of inputs, processing and outputs
- The use of trace tables and visual inspection to determine the workings of an algorithm

Unit 2 – Fundamentals of Data Representation

- The analysis of bit pattern to represent different types of data
- The representation of data values in binary and hexadecimal
- The use of a character encoding table to convert characters to character codes

Unit 3 – Computer Systems and Networks

- The construction of truth tables with logic gates and for simple circuits
- The creation and modification of simple logic circuit diagrams
- The principles of software classification
- The explanation of the Von Neumann architecture and the Fetch-Execute cycle
- The explanation of the main types of computer networking
- The evaluation of wired and wireless networks
- The explanation of common network protocols
- The evaluation of different forms of network security
- The description of the 4 layer TCP/IP model

Unit 4 – Cyber Security and Ethics

- The explanation of a variety of cyber threats
- The description of penetration testing
- The definition and explanation of social engineering
- The definition and description of malware



- The evaluation of the methods to detect and prevent cyber security threats
- The explanation of ethical, legal and environmental impacts of technology on society, including the issues of privacy