Computer Science: Curriculum Overview
Year 12

Term	Topic studied	What will I learn?	How will I be assessed?	Wider reading:
Year 12 Autumn	Data Structures Logical Operations Algorithms and Programs Programming (Continuous using VB.Net)	• 3D arrays; Stacks and queues; Manipulation of 3D arrays; Linked lists; Trees • Boolean expressions including XOR, NAND and NOR; Applying logical expressions; Boolean identities; De Morgan's laws; Simplifying Boolean expressions • Algorithms; Recursion; Validation and verification; Sorting; Quicksort; Searching; Traversal of data structures • Recursion; Object Orientated Programming; Programming structures; Forms and console; IDE tools and features; Assembly and Basic	In class assessments; past exam papers; workbook tasks; programming tests; program reviews; programming projects; flipped learning	The teacher website (pupils given logins) A/AS Level Computer Science for WJEC/Eduqas Student Book (ISBN 9781108412728) Read Chapters: • Data Structures • Logical Operations • Algorithms and Programs
Year 12 Spring	Principles of Programming Systems Analysis System Design Programming (Continuous using VB.Net)	• Programming paradigms; Object oriented programming; Standardisation; Natural language; Syntax diagrams; BNF • Different approaches to analysis; The Waterfall and Agile models; Feasibility studies; Investigation and analysis; Changeover; Testing, maintenance and documentation; Back-up and recovery • Natural language interface; Design validation; Design evaluation • Recursion; Object Orientated Programming; Programming structures; Forms and console; IDE tools and features; Assembly and Basic	In class assessments; past exam papers; workbook tasks; programming tests; program reviews; programming projects; flipped learning	The teacher website (pupils given logins) A/AS Level Computer Science for WJEC/Eduqas Student Book (ISBN 9781108412728) Read Chapters: • Principles of Programming • Systems Analysis • System Design
Year 12 Summer	Software Engineering Program Construction Economic, Legal, Moral, Ethical and Cultural Issues Programming (Continuous using VB.Net)	• Types of software tools used to aid software engineering; Software packages used to help in analysis, specification, design and testing; Version management • Translators and executable programs; Compilers, interpreters and assemblers; Translation and execution errors • Codes of conduct for promoting professional behaviour; Social and economic impact of computers; Moral, ethical and cultural issues relating to computing; The effects on employment of computing technology; Legislation; Security, privacy and data protection; Freedom of information • Recursion; Object Orientated Programming; Programming structures; Forms and console; IDE tools and features; Assembly and Basic	In class assessments; past exam papers; workbook tasks; programming tests; program reviews; programming projects; flipped learning	The teacher website (pupils given logins) A/AS Level Computer Science for WJEC/Eduqas Student Book (ISBN 9781108412728) Read Chapters: • Software Engineering • Program Constructions • Economic, Legal, Moral, Ethical and Cultural Issues