Stuart Bathurst Catholic High School

Computer Science, IT, Business and Digital Media Department

Long-term sequencing **Year 12 A-Level Computer Science (new sequence for 2022-23)**

CURRICULUM INTENT: To provide a smooth transition from key stage 4 to key stage 5; to provide a knowledge-rich and balanced curriculum to support all learners through the course content; to provide multiple opportunities to use coding to create working and functional programs, and to solve given complex problems; to continue from GCSE level to a higher level of understanding of computer systems such as hardware, networks, databases and the Internet; to understand the impacts of digital technology to the individual and wider society, with particular attention paid to cultural, ethical and spiritual impact.

HALF TERM 1:	HALF TERM 2:	HALF TERM 3:
STUDENTS MUST KNOW: • Binary conversion and arithmetic, Hexadecimal. • ASCII and Unicode • Floating point arithmetic • Bitwise manipulation and masks • Boolean logic; gates and expressions • Karnaugh mapping • Adders and D-type gates • Processor types, operation and performance **HOW THIS WILL BE ASSESSED:** Mini assessment at end of first half term Weekly knowledge checkers and/or homework	**STUDENTS MUST KNOW:** • Input, Output and Storage devices • Relational databases and normalisation • SQL – retrieval, definition, updating • Transaction processing • Compression and Encryption • Systems analysis methods • Assembly language, HTML and CSS, JavaScript • *Coursework: Deciding on a project, Analysis* **HOW THIS WILL BE ASSESSED:** Full assessment (Units 1/6/8) wo/e 9/12/22 Weekly knowledge checkers and/or homework	**STUDENTS MUST KNOW:** • Systems software; types and functions of OS • Nature of applications • Programming languages • Writing and following Languages • *Coursework: Design* • *Coursework: Mastering Python Arcade* **HOW THIS WILL BE ASSESSED:** Mini assessment at end of first half term Weekly knowledge checkers and/or homework
HALF TERM 4:	HALF TERM 5:	HALF TERM 6:
STUDENTS MUST KNOW: • Structure of the Internet & communication • Network security and threats • Search engine indexing • Client-server and peer-to-peer systems • *Coursework: Coding and testing* **HOW THIS WILL BE ASSESSED:** Full assessment (for Units 2/3/4/5) w/e 31/3/23 Weekly knowledge checkers and/or homework	**STUDENTS MUST KNOW:** • Arrays, tuples and records • Queues • Lists and linked lists • Stacks • Hash Tables • Graphs • Trees • *Coursework: Coding and testing* **HOW THIS WILL BE ASSESSED:** Mini assessment at end of H/T Weekly knowledge checkers and/or homework	**STUDENTS MUST KNOW:** • Computing related legislation • Ethical issues • Environmental issues • Moral and cultural issues • Privacy and censorship • *Coursework: final coding and testing* **HOW THIS WILL BE ASSESSED:** Full assessment (all terms) w/e tbc Weekly knowledge checkers and/or homework

Home learning will consist of a combination of: Worksheets (written and online), exam questions, QLA revision, GCSEPOD, SENECA