

Year 12

Timing	Unit Title	Key Question	Knowledge	Assessing Understanding
Autumn Term	2.1 C# Practice / conversion	Can I write GCSE-level programs in C#	- C# programming skills, including : - Variables - Algorithms - Loops - File handling - Arrays - Parameters	How understanding is assessed: - Practical exercises and worksheets - Progress is monitored and recorded during lessons Skills - Variables - Algorithms - Loops - File handling - Arrays Assessment point information Progress is monitored in lessons and used for AP purposes
	2.2	Second level programming with OOP	- OOP structures - Classes - Properties - Methods - Constructors	How understanding is assessed : - Practice exercises in C# Skills - Programming in C# Assessment point information A test, based on an old AS Paper, is formally marked according the original MS

Autumn Term	Data Representation	How do we store numbers and text in a computer?	• Binary numbers • Sign-and-magnitude and two's complement • Hex • Adding and subtracting binary • ASCII and Unicode	How understanding is assessed : • Practice exercises in lessons Skills • Conversion from one form to another Assessment point information • BM data contributes to AP • Homework exercise grades contribute to AP
	Legals	What are the laws which control computer use?	• DPA • CDP • Computer Misuse Act • RIPA	How understanding is assessed : • Presentations in teams Skills • Presentation skills • Ability to focus information Assessment point information • Presentation grades contribute to AP
	Low Level Coding	What is low level code and how do we use it?	• Assembly language • LMC • Processors and buses • The fetch-execute cycle • CISC and RISC	How understanding is assessed : • Homework exercises Skills • Writing low level code Assessment point information • BM data contributes to AP • Homework exercise grades contribute to AP

Autumn Term	Networks	How do we connect computers together?	• Network hardware • Network topologies • The protocol stack • HTML • CSS • Javascript	How understanding is assessed : • Practice exercises in lessons • Formal unit test Skills • Write or interpret web pages • Interpret javascript code Assessment point information • BM data contributes to AP • Test marks contribute to AP
Autumn / Spring Term	Databases	How do relational databases work?	• Justification for databases • Relational databases theory • SQL	How understanding is assessed : • challenge exercises in lessons / homework • practical questions in SQL Skills • Write SQL queries Assessment point information • BM data contributes to AP • Homework questions contribute to AP
Spring Term	2.2.2 Software Development	What are the stages of developing software?	• Waterfall lifecycle, agile methodologies, extreme programming, the spiral model and rapid application development. • The relative merits and drawbacks of different methodologies and when they might be used. • Different test strategies, including black and white box testing and alpha and beta testing	How understanding is assessed: • Homework sheets • Google tests Skills • Test programs that solve problems using suitable test data and end user feedback • Programming in C#

				Assessment point information two exercises are formally marked, and are taken together with BM data and with marks from a Google test
	2.1 Elements of computational thinking	What is meant by computational thinking?	- Thinking abstractly – nature and need for abstraction - Thinking ahead - Thinking procedurally – components, steps and solution of problem - Thinking logically	How understanding is assessed : - Homework sheets - Google tests Skills - Dependent on topics chosen - Test programs that solve problems using suitable test data and end user feedback Assessment point information Any homework feeds into the Assessment point, together with BM data.
	Form-based Programming	How do I use C# in real programming?	- Basic concepts including - objects and properties - naming - conversion - combo box - shapes - images - radio buttons - buttons - data grids - database connectivity	How understanding is assessedsed : - Practical exercises in VSi - Reworked exercise from 2.2 done in VS Skills - Programming in VS Assessment point information Any homework feeds into the Assessment point, together with BM data.

Spring Term	Logic	How can we simplify a complex circuit?	Karnaugh Maps	How understanding is assessed : - Practical exercises in lessons Skills - Simplifying complex logic Assessment point information - BM data contributes to AP
	Data Structures (1)	How do we structure data in a computer system?	- Stacks - Queues	How understanding is assessed : - Practical exercises in lessons - Homework sheets Skills - Ability to structure given data - Can write algorithms to manage structures Assessment point information - BM data contributes to AP - Homework grades contribute to AP

	Continuous Revision and bits	What don't I know?	• All theory topics • Minor topics, for example : • Abstraction • Systems analysis	How understanding is assessed : • Weekly homework sheets which grow and shrink according to progress made Skills • Various Assessment point information • All weekly marks feed into AP
Summer Term	Final Revision	DO I know all the material? Can I get all the marks?	• All Theory for both Units	How understanding is assessed : • Weekly homeworks Skills • Exam technique Assessment point information Grades from the sheets feed into the final AP
	OOP theory	What are the benefits of OOP	• OOP theory as in OCR documents	How understanding is assessed : • Written test Skills Assessment point information

				• Test feeds into AP
	Database Handling in C#	How do we control and edit external databases	• Using OOP to access external SQL databases	How understanding is assessed : • In-lesson observation Skills • OOP / SQL coding Assessment point information • BM data feeds into AP
All Year	ELCEC	How do technological changes affect society?	• Topical issues – new each year	How understanding is assessed : • Short essays Skills • Essay technique Assessment point information • Essay marks feed into AP