EPCHS Computing Department: Year 12 Computer Science Programme of Study

The aims of the A Level qualification are to enable learners to develop:

- *an understanding of and ability to apply the fundamental principles and concepts of computer science including; abstraction, decomposition, logic, algorithms and data representation*
- *the ability to analyse problems in computational terms through practical experience of solving such problems including writing programs to do so*
- *the capacity for thinking creatively, innovatively, analytically, logically and critically*
- *the capacity to see relationships between different aspects of computer science*
  - *mathematical skills*
- *the ability to articulate the individual (moral), social (ethical), legal and cultural opportunities and risks of digital technology*

Year/Term	Unit of Work	Intent
Autumn	KS4 to KS5 Transition	To prepare students for the A Level course by visiting some of the main concepts from the GCSE Computer Science course.
	1.1 The characteristics of contemporary processors, input, output and storage devices	To understand the main components of a computer and their uses.
Spring	1.2 Software and software development	To understand the various types of software and the different methodologies used to develop software
	1.3 Exchanging data	To understand how data is exchanged between different systems

Summer	1.4 Data types, data structures and algorithms	To understand how data is represented and stored within different structures. Understand the different algorithms that can be applied to these structures
	1.5 Legal, moral, cultural and ethical issues	The individual moral, social, ethical and cultural opportunities and risks of digital technology. Legislation surrounding the use of computers and ethical issues that can or may in the future arise from the use of computers