



carmel
college

Inspiring minds.
Shaping futures.



COMPUTER SCIENCE

COURSE GUIDE 2017

“Everybody in this country should learn how to program a computer, because it teaches you how to think.”

STEVE JOBS, CO-FOUNDER OF APPLE

Computer Science

Exam Board OCR

Why choose Computer Science at Carmel?

A Level Computer Science is a traditional course for those interested in following a career in Computer Programming, Systems Analysis, Network Engineering or any other Computer Science related career path. During the course you will gain an in-depth understanding of how the computer works and what it can do. It is suited to those who want to extend perhaps their personal interest in computers, or to develop skills such as programming. Computer Science is an intensely creative subject that combines invention and excitement, and can look at the natural world through a digital prism.

The Computer Science Department promises to provide you with a high standard of teaching and extra support to ensure you are successful. We want you to enjoy your studies and be part of our excellent achievements.

What will I study?

The A Level specification introduces students to the internal workings of the Central Processing Unit (CPU), how data is exchanged, how to develop software and the legal and ethical issues associated with the use of computer systems. Students will be encouraged to use computational thinking and utilise algorithms to solve problems. The specification will provide insight into, and experience of how computer science works, stimulating your curiosity.

How will I be assessed?

You will be assessed through two exams and a piece of coursework. The exams will be sat at the end of the two year course.

- Unit 1 Computer Systems (exam) – 40% of total A Level
- Unit 2 Algorithms and Programming (exam) – 40% of total A Level
- Unit 3 Programming Project (coursework) – 20% of total A Level

Our students say...

The thing I enjoy most about Carmel is the support you can get from your tutors, whether you need help with work for lessons or your own personal endeavours in the field.

I like studying Computer Science because every success when programming or following an algorithm gives you a sense of achievement. It's really interesting to learn about the various ways computers work and how to manipulate them to accomplish your task. I would recommend it even to people who don't plan on pursuing a career that directly uses it, as it gives you problem solving skills that can help in any aspect of life. After Carmel I hope to go to university and study Computer Science, specifically in games programming, and then try to pursue a job in that field.

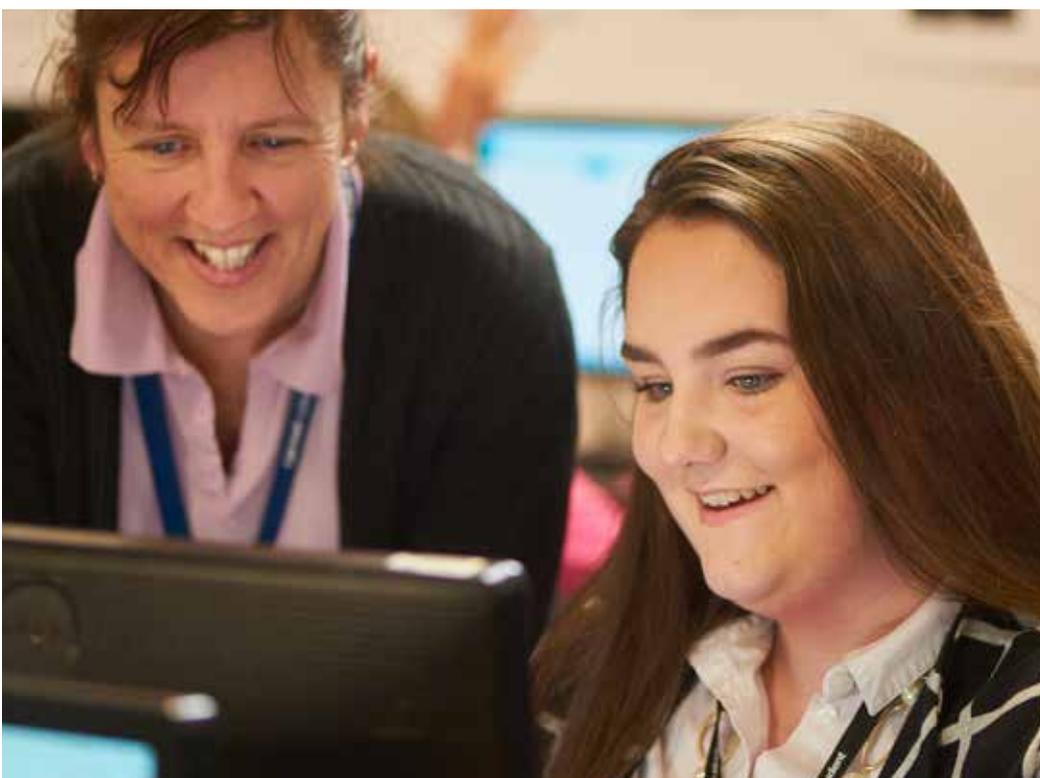


Matthew Bray

Sts Peter & Paul Catholic College

Studying:

Computing, Maths, Graphics, Critical Thinking



Where does this course lead?

Many Computer Science students progress to a wide range of HE courses from computer games design & creation to more traditional computer networking courses. For Computer Science degrees, A Level Maths is also required. Computing appears in a number of joint related subjects, eg Geography & Computing.

The following are examples of student progression:

Liverpool John Moores
Computer Science
Computer Technology

University of Liverpool
Computer Science

University of Wolverhampton
Computer Games Design

University of Central Lancashire
Foundation Entry Computing

University of Hull
Computer Software Development
(with Foundation Year)

Edge Hill University
Computing

University of Birmingham
Computer Science

University of Bolton
Computing (2 years)

Leeds Beckett University
Computing

University of Bristol
Computer Science

University of Chester
Computer Science

Our students say...

I enjoy coming to Carmel as I am able to study the subjects that I love every day, as well as being given amazing opportunities within my chosen subjects.

I really enjoy studying Computer Science. The thing that I like most about the subject is the programming, as the only limit to what you can achieve is your imagination. Carmel has a great, welcoming atmosphere. The teachers are always available to speak to for advice and help you with your work. As an Enrichment activity, I study Mandarin in which I will gain a Chinese qualification. When I leave Carmel, I hope to go on to study Computer Science at university.



Jordanna Woods
Penketh High School

Studying:
Computer Science, Maths, Graphics

// Student Voice 2016 //

"The parts of the course that I like the most are learning how to write sections of code and the mathematical type aspects of the course such as the use of binary arithmetic."

"The environment in the class is fantastic. I feel free to voice my opinion and get help from the teachers or my peers around me. Computer programming in my opinion is a team effort and I appreciate the environment I am in which enables me to do that."

"The content of the course is extremely interesting, regular mini-tests and mock papers help improve exam technique and encourage revision for topics."

"The lessons are well planned and organised. The methods of teaching used help to develop our skills."

"I enjoy being given a task to work on, on something we might not have done before where we have to problem solve to find the answers."

"The programming part is always fun and sometimes challenging which (in my opinion) helps improve on problem solving."



Our students say...

Carmel College has a truly student-centric approach to teaching. Tutors are always on hand to assist with any curricular queries and students' attainment is their foremost priority.

I would highly recommend the Computer Science course to any aspiring programmer out there. The course is highly practical and you'll be sure to leave with a decent proficiency in programming, this is without doubt my favourite aspect of the course. With the help of my subject tutors I've been able to quickly gain a grasp of programming which has empowered me to build real-world applications such as puzzles and calculators. The ability to do this is undeniably quite satisfying and helps to equip me for my aspired future career as a Software Engineer.



Joël Cieslar
St Edmund Arrowsmith, Ashton

Studying:

Computer Science, Business Studies, English Language, Statistics

Frequently Asked Questions

What is Computer Science?

Computer Science students fundamentally learn how to design and create software whereas ICT students learn how to use software.

Can I study Computer Science if I have not taken it at GCSE?

Yes.

What support will I receive?

All students receive extra support via individual and group tutorials throughout the academic year as required. Revision classes are scheduled prior to modular examinations.

What is the department like?

There are 6 dedicated computer suites with wireless internet connection, printing facilities, interactive whiteboards and multi-media projectors. In addition to these we also have a theory classroom.

Students also take part in workshops at Manchester Metropolitan University.

How successful are Carmel's Computer Science students?

Summer 2016 Examination Results:

Computer Science (GCE Advanced Level) - 100% Pass Rate, 81% A*-C



What are the entry requirements for this course?

A Level Computer Science
GCSE grade 6 in Maths.

Meet the Tutors

Head of Department
Kay Arrowsmith

Computer Science Tutor
Philip Gorman



Carmel College
Prescot Road
St Helens
Merseyside WA10 3AG

www.carmel.ac.uk

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More Information

You can get a detailed course specification from the exam board website:
www.ocr.org.uk