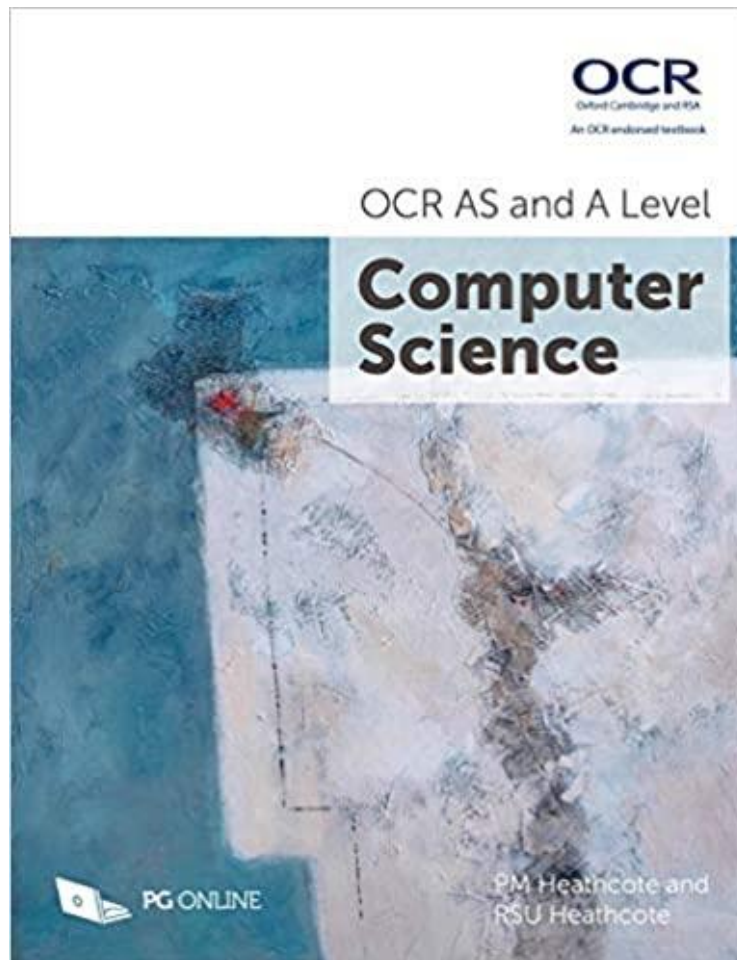


OCR A level Computer Science

READING LIST



AS and A Level OCR Computer Science H446 H046 A-Level Course

Authors: PM Heathcote and RSU Heathcote

Publisher: PG Online

ISBN- 9781910523056

Price: £25 @ amazon.com

We recommend that you purchase this textbook, prior to starting the course in September. The book covers all the content you will be assessed on, practice exam questions and project guidance.

Tasks for the summer to prepare for September:

There are 3 parts to this course, part 1 – computer Systems, part 2 – Algorithms and programming, and the programming project.

Task 1 – Computer Systems

This unit follows on from OCR GCSE paper 1 – Computer systems, which will assess your knowledge on the following topics, The characteristics of contemporary processors, input, output and storage devices, Software and software development, Exchanging data, Data types, data structures and algorithms and Legal, moral, cultural and ethical issues. To fully prepare yourself for this unit I want you research and find out about the following topic areas.

- The differences between and uses of CISC and RISC processors
- Interrupts, the role of interrupts and Interrupt Service Routines (ISR), role within the Fetch-Decode-Execute Cycle.
- Scheduling: round robin, first come first served, multi-level feedback queues, shortest job first and shortest remaining time.
- Relational database, flat file, primary key, foreign key, secondary key, entity relationship modelling, normalisation and indexing.

Write your findings in a word document, the document should be no longer than one side of A4 and be in your own words.

Once complete email

screed@birchwoodhigh.org.uk

Task 2 - Algorithms

This unit follows on from the OCR GCSE paper 2 – algorithms and programming, which will assess your knowledge on the following topics, Elements of computational thinking, Problem solving and programming, Algorithms to solve problems and standard algorithms.

You would've studied some of the algorithms at GCSE level, bubble, merge and insertion sorts, along with binary and linear searches.

At A level we look at these algorithms again along with some others (listed below).

- quick sort
- Dijkstra's shortest path algorithm
- A* algorithm

Research and find out about the algorithms listed above, put your findings in a word document.

Once complete, please email it to Mr Creed screed@birchwoodhigh.org.uk

Task 3 – OOP

At GCSE level you would've written code procedurally. At A level you will be required to build on these methods and begin exploring object orientated methods. To understand the concept of OOP please go to the following website.

<https://realpython.com/python3-object-oriented-programming/>

Read the information and complete the tutorial.

Once complete, please email it to Mr Creed screed@birchwoodhigh.org.uk