Ormiston Victory Academy

OCR A Level Computer Science

Sixth Form Student Handbook

Introduction to Computer Science

Computer Science is a practical subject where students can apply the academic principles learned in the classroom to real-world systems. It's an intensely creative subject that combines invention and excitement, and can look at the natural world through a digital prism.

In order to be successful in these course students will need to be organised, motivated and interested in Computing. They will need to work independently outside of lessons in order to ensure coursework is completed to the highest standard. They will also need to be reflective and proactive, ensuring they self-assess understanding of theory topics and ask for support when required.

The IT Department will provide:

- ✓ Teachers with relevant and extensive subject knowledge.
- ✓ Course and assessment details.
- ✓ Extensive advice and support - including additional individual support when necessary.
- ✓ Relevant resources including theory PowerPoint's and examples.
- ✓ Past Papers and Mark Schemes - Saved on the Student Shared Area.

What to expect from the course:

The A Level Computer Science course will test your skills and knowledge of Computer Science. It will provide you with the opportunity to show your skill level and what you can do with Computer Science. It will also give you the opportunity to show your knowledge of the theory of Computing and how Computing helps in the real world.

Homework

Five hours of homework will be set each week. Homework will consist of practical tasks, research tasks, exam questions and completing coursework. If homework isn't completed, catch up sessions will be arranged in free periods or after school.

Reading List

Books:	
OCR AS and A Level Computer Science	https://www.amazon.co.uk/OCR-AS-Level-Computer-Science/dp/1910523054/ref=sr_1_3?keywords=ocr+computer+science&qid=1568277398&s=gateway&sr=8-3
OCR AS Computer Science (H046) - Revision Notes	https://www.amazon.co.uk/OCR-AS-Computer-Science-H046/dp/154870539X/ref=sr_1_16?keywords=ocr+a+level+computer+science&qid=1568277456&s=gateway&sr=8-16
Websites:	
http://www.learnitwithdavo.co.uk/	
https://craigndave.org/	
https://www.teach-ict.com/	
Wider Reading:	
Computer Magazine	

Technology sections of newspapers

Extra-Curricular Events/Requirements

The following clubs are offered to Year 7 and 8 students, supporting in any of these clubs would be beneficial to you:

- Coding club with Mr Smith, Monday Period 6
- Digital Leaders with Mr Rose and Mr Butcher, T

Being able to teach Computing skills to others is also very useful. Supporting with Computing skills in Year 7 and 8 Computing lessons would also be beneficial. Speak to Mr Smith if you are interested.

Student Expectations

Students are expected to:

- ✓ Have 100% attendance. Let your teacher know if you are not going to be in a lesson for any reason via e-mail.
- ✓ Arrive promptly to lessons.
- ✓ Show positive behaviour.
- ✓ Complete coursework tasks, ensuring they meet the deadlines.
- ✓ Complete homework tasks, ensuring they meet the deadlines - 5 hours of theory or practical work a week.
- ✓ Proof read their work to check spelling and grammar.
- ✓ Ensure the presentation of all their work is suitable.
- ✓ Carry out independent study, especially with the theory units.
- ✓ Participate in group work tasks.
- ✓ Show responsibility by seeking additional help and support when necessary.
- ✓ Ensure all the relevant equipment is brought to all lessons, including memory sticks.
- ✓ Enjoy the course!

Work and folders that need to be produced:

- ✓ Theory notes that they can revise form. You will be expected to make your own notes in theory lessons. You will be provided with PowerPoint notes, but it helps with revision if you have your own notes too.

Independent Study:

It is not possible to achieve the highest grades possible, unless you complete work outside of the timetabled lessons. You have five timetabled lessons a week and you also need to spend five hours outside lessons revising for external units or completing coursework for internal units.

In order to revise, you could make revision cards, rewrite notes from lessons or create mind maps. While doing this, you must ensure you identify the gaps in your knowledge. Once the gaps are identified, you need to address them. This could be using notes, revision guides or asking your teacher for support.

When completing the coursework aspect of the course, ensure you refer to the assessment criteria. Always complete all tasks to the best of your ability. Remember to stick to the deadlines, so you could fail the course.

Failure to meet the expectations may result in you being removed from the course.

Plagiarism Policy

Plagiarism, as defined in the 1995 Random House Compact Unabridged DITionary, is the "use or close imitation of the language and thoughts of another author and the representation of them as one's own original work." The use of referenced material is encouraged by the department to add weight of argument to a piece of work or particular point. Any quotations within a piece of work are expected to be noted. Additional care must be observed given that all Edexcel moderated work is electronically scanned.

Teachers will take every reasonable care to monitor work which is copied between students' assignments. Submitted work which is copied will be dealt with on a case by case basis. No work which is suspected will be submitted to Edexcel meaning that plagiarised submissions will not be counted towards a final grade. Student's overall grade will therefore suffer directly as a result of any plagiarism.

Appeals Procedure

The assessor will forward your case to the Lead Internal Verifier. Your case will be discussed and your work will be moderated and feedback is given to you. The case will also be discussed with the Head of Department but the decision of the appeals Panel is final. The Lead Internal Verifier will inform the candidate as soon as a decision has been made and this will take no longer than two weeks. The appeal is logged and kept in the programme file for the External Verifier and as evidence.

Coursework Hand-In

All coursework will be saved into your My Documents or uploaded to our Google Classroom. Students who have not submitted work by the given deadline could fail the course. The student will be expected to attend after school sessions to catch up on outstanding work, if time allows for this.

Causes for Concern

All causes for concern will be tracked by the department. This will provide evidence of interventions. Students will be classified a cause for concern under the following headings:

- Behaviour - A student's behaviour has meant they have impacted upon their or other students learning. Coursework/homework – a student has not submitted a piece of coursework.
- Attendance - A student's lack of attendance is having a direct effect upon their performance.
- Equipment - A student has attended class without their required notes, memory stick or other equipment.

Qualification

OCR A Level Computer Science (H446)

Specification

https://www.ocr.org.uk/Images/170844-specification-accredited-a-level-gce-computer-science-h446.pdf

Teachers Details

Miss M. Youngman m.youngman@ormistonvicoryacademy.co.uk
Mr M. Smith m.smith@ormistonvictoryacademy.co.uk

OCR A Level Computer Science

The OCR A Level Computer Science course is made up of two components – with units to study for each of those components. The majority of the content for this A Level will be covered in Year 12, with more advanced content added in Year 13 as we revisit the previous year's learning.

The units are:

- ✓ 1.1 The characteristics of contemporary processors, input, output and storage devices
- ✓ 1.2 Software and software development
- ✓ 1.3 Exchanging data
- ✓ 1.4 Data types, data structures and algorithms
- ✓ 1.5 Legal, moral, cultural and ethical issues

- ✓ 2.1 Elements of computational thinking
- ✓ 2.2 Problem solving and programming
- ✓ 2.3 Algorithms

A Level Assessment Information

The A Level in Computer Science is a linear qualification with 100% terminal external assessment.

This qualification consists of two examined components (01 and 02), externally assessed by OCR and one internally assessed and moderated non exam assessment component (03 or 04).

Both examinations are of 2 hours and 30 minutes duration, each with a 40% weighting. The non-exam assessment component weighted at 20%.

Course Structure

Computer systems (Component 01)

Learners answer all the questions. There will be a mix of questions including short answer, longer answer and some higher tariff questions that will test the quality of extended responses. Marks for these responses are integrated into the marking criteria.

The whole of the Computer systems content will be covered over the life of the specification.

Questions may contain, for example, following and correcting algorithms and programs, software development and legal and moral issues.

Algorithms and programming (Component 02)

Learners answer all the questions in Section A and all questions in Section B. There will be a mix of questions including short answer, longer answer and some higher tariff questions that will test the quality of written responses via a level of response mark scheme.

The whole of the Algorithms and programming content will be covered over the life of the specification.

Section A will contain questions which may cover writing algorithms and computational methods, programming and programming techniques and problem solving. These questions may contain some shorter answer questions.

Section B will have a scenario set at the start of the section; this will contain information that will be used for the questions that follow. The questions will be largely of a higher tariff with problem solving algorithms and programming again forming the basis.

Programming project (Component 03 or 04)

The programming project will be submitted in the form of a report that will contain the solution to a problem, selected by the learner or centre, written in a suitable programming language.