Year 12

Computer Science A Level

Cambridge Technical L3 IT

Subjects offered and prgrams of

study 2020-2021

Subject:
 A level Computer Science (OCR)
 4 hours per week

Exam Board: OCR

Syllabus No: H446

Web link:
http://www.ocr.org.uk/qualifications/as-a-levelgce-computer-science-h046-h446-from-2015/

Aims of the course

For students to develop:

- An understanding 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 to think creatively, innovatively, analytically, logically and critically.

- The capacity to see relationships between different aspects of computer science

- Mathematical skills.

Programme of study for 2020/21

Term			
Autumn Term 1a Autumn Term 1b Spring Term 2a Spring Term 2b	**01 Computing principles** This component will introduce learners to the internal workings of the Central Processing Unit (CPU), the exchange of data and will also look at software development, data types and legal and ethical issues. It is expected that learners will draw on this underpinning content when studying computational thinking, developing programming techniques and devising their own programming approach in the Programming project component (03 or 04). Learners will be expected to apply the criteria below in different contexts including current and future uses of the technologies.	**02 Algorithms and problem solving** This component will incorporate and build on the knowledge and understanding gained in the Computer systems component (01). In addition, learners should: •understand what is meant by computational thinking •understand the benefits of applying computational thinking to solving a wide variety of problems •understand the principles of solving problems by computational methods •be able to use algorithms to describe problems •be able to analyse a problem by identifying its component parts.	**03 Programming project** Learners will be expected to analyse, design, develop, test, evaluate and document a program written in a suitable programming language. The underlying approach to the project is to apply the principles of computational thinking to a practical coding problem. Learners are expected to apply appropriate principles from an agile development approach to the project development. While the project assessment criteria are organised into specific categories, it is anticipated the final report will document the agile development process and elements for each of the assessment categories will appear throughout the report.
Summer Term 3a	Revision for PPE exam	Revision for PPE exam	Revision for both component 01 and 02
Summer Term 3b	01 Computing principles PPE Exam	02 Algorithms and problem solving PPE Exam	

Homework that will be set (general)

Unit 1 and 2
Research / wider reading of topic areas
Examination questions

Unit 3

Preparation tasks for coursework projects

Coursework projects

Support available

Help from staff in non-contact time
Text books
OCR Website
Revision classes

Groupings or setting

Grouped according to options

What parents can do to help

Check coursework deadlines
Purchase recommended revision guides

Member of staff to contact if you have any queries:

Ms C Andrews (HoD and Teacher of Component 1)
candrews@westhatch.net

Mr Z Spence (Teacher of component 2 and 3)
zspence@westhatch.net

Subject:
Cambridge Technical Certificate in IT
5 hours per week

Exam Board: OCR

Syllabus No: 5839
Web link:
http://www.ocr.org.uk/qualifications/vocational-education-and-skills/cambridge-technicals-it-level-3-certificate-extended-certificate-introductory-diploma-foundation-diploma-diploma-05838-05842-2016-suite/

Aims of the course

These qualifications aim to develop students' knowledge, understanding and skills of the essentials of IT and Cyber Security. Students will gain an insight into the IT sector as they investigate the pace of technological change, IT infrastructure on a global scale, and the importance of legal and security considerations. Designed in collaboration with industry experts the qualifications focus on the requirements that today's employers demand. Students will practically apply their skills and knowledge in preparation for further study, apprenticeship or the workplace.

Students will also develop professional, personal and social skills through interaction with peers, stakeholders and clients, as well as theoretical knowledge and understanding to underpin these skills. These support the transferable skills required by employers such as communication, problem solving, time management, research and analytical skills.

Programme of study for 2020/21

Term		
Autumn Term 1a	**UNIT 1: Fundamentals of IT** Learning objectives: 1. Understand computer hardware 2. Understand computer software 3. Understand business IT systems 4. Understand employability and communication skills used in an IT environment 5. Understand ethical and operational issues and threats to computer systems	**UNIT 2: Global Information** Learning objectives: 1. Understand where information is held globally and how it is transmitted 2. Understand the styles, classification and the management of global information 3. Understand the use of global information and the benefits to individuals and organisations 4. Understand the legal and regulatory framework governing the storage and use of global information 5. Understand the process flow of information 6. Understand the principles of information security
Autumn Term 1b		
Spring Term 2a		
Spring Term 2b		
Summer Term 3a	Revision for exam	Revision for exam
Summer Term 3b	01 Fundamentals of IT Exam	02 Global Information Exam

Homework that will be set (general)

Unit 1 and 2
Research / wider reading of topic areas

Examination questions

Support available

Help from staff in non-contact time Online resources suggested by exam board OCR Website Revision classes

Groupings or setting

Grouped according to options

What parents can do to help

Check coursework deadlines Purchase recommended revision guides

Member of staff to contact if you have any queries:

Ms C Andrews (Teacher of Unit 2, 8 and 17) candrews@westhatch.net

Ms F Khanom (Teacher of unit 1, 3 and 17) Fkhanom@westhatch.net