

# COMPUTER SCIENCE

OCR

## A LEVEL

|                                      |                                                                       |
|--------------------------------------|-----------------------------------------------------------------------|
| Entry Requirements                   | GCSE Maths 5 and English Language 4 or Computing / Computer Science 4 |
| Head of Department or Course Contact | Mrs S Wilcox<br>Mr D Morgan                                           |
| Contact E-Mail Address               | swilcox@stedmunds.org<br>dmorgan@stedmunds.org                        |

### **Brief introduction to subject:**

Advances in computing are transforming the way we work and this course allows a flexible, accessible and rigorous qualification to be delivered. This exciting new specification brings the study of Computer Science up to date for the 21st century. It has the backing of a range of industries, higher education and the National Computing Centre.

### **Progression to Career/ University Courses:**

The specification has been developed for students who wish to progress to higher education or to the world of work, where understanding of how Computer Science is employed and the implications of its use will be a valuable asset.

### **Key Points:**

The key points of this specification are that:

- It allows great opportunities for practical work
- Practical work can be carried out using a wide range of software and hardware.
- It allows for greater flexibility in modes of delivery
- Students can be truly engaged in their studies by becoming active investigators rather than passive learners
- There are greater opportunities for effective personalised learning, target setting and for differentiated outcomes
- It builds on, rather than replicates, students' computer science knowledge

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### Paper 1

#### What is assessed

This paper tests a student's ability to program, as well as their theoretical knowledge of Computer Science from subject content 1-4 above and the skills required from:

- Fundamentals of programming
- Fundamentals of data structures
- Fundamentals of algorithms
- Theory of computation

#### Assessed

- On-screen exam: 2 hours 30 minutes
- 40% of A-level

#### Questions

Students answer a series of short questions and write/adapt/extend programs in an Electronic Answer Document provided by the examination board. Preliminary Material, a Skeleton Program and, where appropriate, test data, for use in the exam will be provided

### Paper 2

#### What is assessed:

This paper tests a student's ability to answer questions from:

- Fundamentals of data representation
- Fundamentals of computer systems
- Fundamentals of computer organisation and architecture
- Consequences of uses of computing
- Fundamentals of communication and networking
- Fundamentals of databases
- Big Data
- Fundamentals of functional programming

#### Assessed

- Written exam: 2 hours 30 minutes
- 40% of A-level

#### Questions

Compulsory short-answer and extended-answer questions

### Paper 3

#### What is assessed:

The non-exam assessment assesses student's ability to use the knowledge and skills gained through the course to solve or investigate a practical problem. Students will be expected to follow a systematic approach to problem solving.

#### Assessed

- 75 marks
- 20% of A-level