

Computer Science Yr12 & Yr13 Roadmap

Yr12 Subject Aim: The exam board and course we are following is "OCR Computer Science - H446 (from 2015)". You will follow the full A-Level (H446) from the moment you start at the WBS 6th form. The whole of the 2-year course has been separated into Year 1 and Year 2.

In Year 1 of the course you will study a mixture of theory and practical that cover the basic, less demanding, aspects of the course. You will develop in competence as a programmer in order to successfully undertake a Programming Project at the end of Year 1 and the start of Year 2.

| | Yr12 AUTUMN TERM TOPICS | ASSESSMENT IN Yr12 |
|-------------|---|--|
| AUTUMN TERM | <p>Students will work towards learning about Computer Systems by completing topics to understand how data is represented and stored. They will also cover topics to understand the characteristics of contemporary processors, input, output and storage devices.</p> <p>Students will learn how computers can be used to solve problems and programs can be written from them. They will utilise procedural and object orientated programming techniques to do this.</p> | <p>Throughout year 12 there are 3 cumulative key assessments which examine the work covered up to the time at which the key assessment takes place.</p> |
| | Yr12 SPRING TERM TOPICS | HOMEWORK IN Yr12 |
| SPRING TERM | <p>Students will work towards learning about Computer Systems by completing topics to understand the types of software and the different methodologies used to develop software and how data is exchanged between different systems.</p> <p>Students will continue to learn how computers can be used to solve problems and programs can be written from them. They will continue to utilise procedural and object orientated programming techniques to do this.</p> | <p>Students can expect to be given 3 different types of homework throughout the year:</p> <ol style="list-style-type: none"> 1). Quizzes that focus on reading & predicting algorithms. 2). Essays based on a wide range of material aimed at developing discussion and evaluative skills. 3). Topic Packs of past paper questions. |
| | Yr12 SUMMER TERM TOPICS | ENRICHMENT THEMES IN Yr12 |
| SUMMER TERM | <p>Students will undertake the Programming Project part of the course during the summer term. Students will analyse, design, develop, test and evaluate a solution written in a programming language of their choice</p> | <p>They are encouraged to participate and mentor younger students throughout KS3 & KS4.</p> <p>During the Programming project they are encouraged to find a client and work closely with their client to develop an appropriate solution.</p> |

Where Next?

In Year 2 you will develop your understanding of the material covered in Year 1 in addition to covering the more demanding aspects of the course. By the end of your 2nd year of study you will have covered all course material as part of the H446 Computer Science course provided by OCR. There are 2 written exams: H446-01 and H446-02. These are 2hr 30min written papers making up 40% (140 UMS marks) each. There is also a 3rd element (the Programming Project) worth 20%.

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Computer Science Yr12 & Yr13 Roadmap

Yr13 Subject Aim: In Year 2 you will develop your understanding of the material covered in Year 1 in addition to covering the more demanding aspects of the course. By the end of your 2nd year of study you will have covered all course material as part of the H446 Computer Science course provided by OCR. There are 2 written exams: H446-01 and H446-02. These are 2hr 30min written papers making up 40% (140 UMS marks) each. There is also a 3rd element (the Programming Project) worth 20%.

| | Yr13 AUTUMN TERM TOPICS | ASSESSMENT IN Yr13 |
|-------------|---|--|
| AUTUMN TERM | <p>Students will finish their Programming Project after undertaking the majority of the work within the summer term of their first year of this course.</p> <p>Students will expand on their learning about Computer Systems by completing additional topics to further their understanding on how data is represented and stored. Students will also expand on their understanding of how data is exchanged between different systems by studying databases and web technologies.</p> <p>Students will continue to learn how computers can be used to solve problems and programs can be written from them. They will focus on learning advanced programming techniques such as recursion.</p> | <p>Throughout year 12 there are 2 cumulative key assessments which examine the work covered up to the time at which the key assessment takes place.</p> <p>There is also a Mock exam that will replicate the length and level of difficulty of 1 of the final exams.</p> |
| SPRING TERM | <p>Students will expand their learning about Computer Systems by completing additional topics to understand the characteristics of contemporary processors, input, output and storage devices. Students will also expand their understanding of the types of software and the different methodologies used to develop software and how data is exchanged between different systems.</p> <p>Students will learn about the use of algorithms to describe problems and standard algorithms. This will include material to help understand the efficiency of algorithms, the different algorithms used for main data structures and standard algorithms for sorting & searching.</p> | <p>Students can expect to be given 3 different types of homework throughout the year:</p> <ol style="list-style-type: none"> 1). Quizzes that focus on reading & predicting algorithms. 2). Essays based on a wide range of material aimed at developing discussion and evaluative skills. 3). Topic Packs of past paper questions. |
| SUMMER TERM | <p>Students will participate in revision lessons to prepare for their final examinations in the subject.</p> | <p>They are encouraged to participate and mentor younger students throughout KS3 & KS4.</p> <p>During the Programming project they are encouraged to find a client and work closely with their client to develop an appropriate solution.</p> |
| | Yr13 SPRING TERM TOPICS | HOMEWORK IN Yr13 |
| | Yr13 SUMMER TERM TOPICS | ENRICHMENT THEMES IN Yr13 |

Where Next?

Upon the completion of the A Level Computer Science course, students are well suited towards undertaking a computer science/Information technology related degree, apprenticeship or work related role.

Contacts

Enterprise Department: Mr Brown. Based in the Enterprise Office (the portacabin in the quad next to the main hall, up the ramp, room 27). Student issues - please do not hesitate to ask for help (Computing Teacher or at the Enterprise Office). We also run "drop-in" sessions (open to students for any help / questions etc.) in CR3 on Monday, Tuesday and Wednesday after school