Computer Science and Coding Course Key Facts

Location	Online (live, not pre-recorded)
Class size	Maximum 15 students
Ages	15-18
Fees	£595 (1 week) or £995 (2 weeks)
Dates	June - August (see our booking form for the latest availability)
Timings	Live tutorials take place from 1-3pm UK time
Outcome	Certificate of Achievement and personalised Letter of Recommendation

Computer Science and Coding Course Outline

Class	Class Content and Lesson Objectives	Independent Study
1	**Orientation:** ● Introductions & Icebreakers ● Sharing your personal journey ● Emphasising the importance and potential impact of studying the subject *Students will be able to:* ● Get to know each other and the tutor ● Feel inspired about studying the subject **Introduction to the course:** *Students will be able to:* ● Get to know the course logistics and expectations ● Set norms and values for the course ● Understand their overall task for the course ● Discuss what they would like to get out of their experience ● Discuss their prior knowledge of computer science & coding in small groups and present to the class.	Research a particular historically important moment for computing to share with the group next session.

	History of Computing *Students will be able to:* • Outline key developments in the history of computing • Examine the relationships between developments in the history of computing • Debate which of these developments are the most important to modern day computer science	
2	**Regular Expressions / Coding 101** *Students will be able to:* • Understand regular expressions in coding • Use regular expressions as a popular and powerful way of finding patterns in text, such as email addresses, or grammatical errors.	Students create their own cheat sheets
3	**Complexity Analysis** *Students will be able to:* • Understand how to compare the speeds of different algorithms • Learn pure mathematics and its implications for software development • Present a comparison comparing algorithm speeds • Explore the mathematics for software development	Research an algorithm used widely at the moment in software development
4	**Introduction to HTML** *Students will be able to:* • Outline the key features of HTML • Examine examples of HTML coding • Apply their knowledge of HTML in a coding task	Individually, use HTML to achieve a computing task (set by the tutor)
5	**Web Development** *Students will be able to:* • Discuss how the features of HTML and CSS make them suitable for website design • Examine examples of website coding • Apply their knowledge of HTML or CSS in a website design task • Explore the different components that enable computers to communicate over the internet • The different roles in software development related to the web	Individually, use either HTML or CSS to make a website
	END OF THE ONE WEEK COURSE	

6	**Introduction to Python** *Students will be able to:* • Outline the key features of Python • Examine examples of Python coding • Apply their knowledge of Python in a coding task	Individually, use Python to achieve a computing task (set by the tutor)
7	**Introduction to Javascript** *Students will be able to:* • Outline the key features of Javascript • Examine examples of Javascript coding • Apply their knowledge of Javascript in a coding task	Individually, use Javascript to achieve a computing task (set by the tutor)
8	**Making Games** *Students will be able to:* • Discuss how the features of Javascript and Python make them suitable for making games • Examine examples of game coding • Apply their knowledge of Javascript or Python in a game coding task	Individually, use either Python or Javascript to create a computer game
9	**Artificial Intelligence (AI)** *Students will be able to:* • Understand a variety of applications such as robotics, weather forecasting, chatbots, image recognition and more • Discuss the implications of AI on future technology • Explore the coding and technology fundamentals behind ChatGPT	Research an area of AI (set by the tutor)
10	**The Future of Computing** *Students will be able to:* • Suggest key developments in the future of computing • Examine examples of cutting-edge research in computing • Debate which developments will be most influential in the future of computing • Explore potential future careers that may emerge as a result of emerging technologies and AI. In small groups, read about a particular piece of cutting	In small groups, brainstorm possible developments in future computing and present this to the class Students can also take the OxBright career test which will provide them with potential future careers and

	edge research/design and then present this to the class After presentations, add to the timeline that was constructed earlier. Individually identify the development that they are most interested in/believe to be the most influential/important to how we will do computing in the future Form different groups depending on the development they think will be the most influential in future computing – teacher to intervene to ensure relatively even groups Groups brainstorm their perspective in the debate Debate takes place Reflections & Closing	subject specific resources to explore!

Next Steps

We'd love to welcome you to our Computer Science and Coding online course! In order to secure your place, the next step is to apply by clicking here.

If you have any questions, please don't hesitate to contact Stephanie on 0044 1865 522 166, or by email on hello@oxfordscholastica.com.