Craig Ormerod Associates Ltd.

Subject Overview: Computer Science (KS4)

YEAR 10

All Year 10 pupils will study the Level 2 Certificate in Digital Applications (CiDA), a GCSE equivalent qualification that focuses on practical and creative IT skills. The course is composed of two discreet units of work:

Unit 1: Web Authoring *(2.5 hour on-screen examination; 25% of total mark)*

- This unit helps pupils to develop the skills needed to design and create a website following a specific brief.
- Pupils learn how to use Serif Webplus as well as various image editing and manipulation techniques.
- Assessment is via an on-screen examination that pupils will sit in January and June of Year 11.

Unit 2: Artwork and Imaging *(Coursework-based; 75% of total mark)*

- This unit aims to provide pupils with the knowledge and expertise necessary to design and create effective graphic products for a specific audience and purpose.
- Pupils will experiment with a range of graphic products to find out how images are used to convey a particular message.
- Pupils will also learn how to produce images that communicate their intended message effectively on-screen and in print, as well as how to combine them with other components to create other graphic products.
- Pupils will consider the medium, purpose and audience of their work, as well as file format and size.
- Pupils will demonstrate their ability to create stylish and effective graphic products as part of a major project set by the OCR examination board, which will include an e-portfolio of exhibited work and supporting evidence.
- Assessment is internally conducted, with external moderation.

ICT pupils are continuously assessed during lessons. The digital nature of on-screen work means that tutors are easily able to see what pupils are doing and to provide ongoing feedback as they progress through each unit of work. Pupils are also assessed on the work produced at the end of each sub-unit; the feedback they receive will guide them on how best to build on their progress.

YEAR 11

GCSE Computer Science gives pupils the opportunity to investigate how computers function and why they are so critical to applied processes such as digital programming and problem-solving. Pupils will also conduct their own independent research and practical work.

This course will:

- Provide pupils with a real, in-depth understanding of how computer technology works
- Prepare pupils for higher-level study and subsequent employment in Computer Science
- Help pupils develop independent critical thinking and problem-solving skills

Pupils will be able to:

- Develop their understanding of current and emerging technologies and apply this knowledge in a range of contexts
- Acquire and apply a thorough knowledge of how algorithms are used within computer programs to assist in programming and problem-solving
- Use their knowledge and understanding of computer technology to become independent and discerning users of IT
- Be able to make informed decisions about the uses and implications of different technologies
- Acquire and apply a diverse range of creative and technical IT-related skills
- Write their own original problem-solving computer programs
- Develop the skills needed to work collaboratively as well as independently
- Evaluate the relative effectiveness of a range of digital solutions and their wider impact on society

GCSE Computer Science is organised into three discreet units of work, which are assessed via two written examinations and one coursework-based assessment:

Component 1: Computer Systems *(Written examination; 40% of total mark)*

- Systems architecture
- Memory
- Storage
- Wired and wireless networks
- Network topologies, protocols and layers
- System security
- System software
- Ethical, legal, cultural and environmental concerns

Component 2: Computational Thinking, Algorithms and Programming *(Written examination; 40% of total mark)*

- Algorithms
- Programming techniques
- Producing robust programs
- Computational logic
- Translators and facilities of languages
- Data representation

Component 3: Programming Project *(Coursework-based assessment; 20% of total mark)*

- This project requires pupils to design, code and test a solution to three tasks using appropriately selected programming language

Year 11 pupils will also study for the ***European Computer Driving License (ECDL)***, an internationally recognised qualification offered by the British Computing Society. This course is assessed in the following areas of IT proficiency:

- **Word Processing** *(MS Word)* - 45 minutes - Online test - Pass mark: 75%

- **Presentation** *(MS PowerPoint)* - 45 minutes - Online test - Pass mark: 75%

- **Spreadsheets** *(MS Excel)* - 45 minutes - Online test - Pass mark: 75%

- **Improving Productivity** - 1 hour - Online test - Pass mark: 55%