SUBJECT NAME **COMPUTING SCIENCE**

AWARD RECEIVED **NATIONAL 5 or NATIONAL 4**

Computing Science involves learning how to understanding technologies in the digital world. You will understand and apply computational processes and thinking through designing and implementing python programs and information systems.

Entry Level – What do I need to do it?

The N5 course is suitable for confident users of ICT who have been working at CfE Level 4 in the elective Business and Computing Technologies course, and have shown you can work independently through written instructions. The N4 course is suitable for those who have been working at CfE Level 3 in the elective. Students who have not followed the elective course should have good numeracy skills.

Course Content – What will I learn?

Software Design and Development

In this unit you will be using a programming language to design, create and test a variety of computer programs. You will also learn about how computers store information and how processors are designed.

Information System Design and Development

In this unit you will be designing and creating a variety of information systems including databases, networks and web sites and you will be studying the computer hardware and software which are needed to make them safe, secure and easy to use.

Computer Systems

Candidates develop an understanding of how data and instructions are stored in binary form and basic computer architecture. They gain an awareness of the environmental impact of the energy use of computing systems and security precautions that can be taken to protect computer systems.

Web Design and Development

Candidates develop knowledge, understanding and practical problem-solving skills in web design and development, through a range of practical and investigative tasks. This allows candidates to apply computational-thinking skills to analyse, design, implement, test and evaluate practical solutions to web-based problems, using a range of development tools such as HTML, CSS and Javascript. Tasks involve some complex features (in both familiar and new contexts), that require some interpretation by candidates.

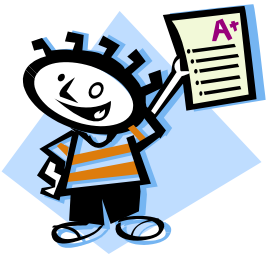
Teaching Methods – What will I do?

The course is both practical and theory based. You will have access to ICT software and hardware to support your learning. You will use paper, electronic and internet based course materials. You will be encouraged to self-evaluate and make personal action plans to take your learning forward.

Assessment

N4 students must pass all unit assessments in order to gain the full course award. N5 students will complete assessments at the end of each unit outcome in order to inform their next steps for learning. Units of study:

- Software Design and Development
- Computer Systems
- Database Design and Development
- Web Design and Development



You will sit regular closed book assessments – written and practical – to track your progress through the course. If you are sitting N5 the course will be assessed by a written theory paper (110 marks) and a practical Course Assignment (50 marks) – both of which are set externally by the SQA. If you are sitting N4 you will also have to complete an Added Value Assignment.

Homework

You will be expected to complete written homework assignments for each unit. These can be hand-written or prepared using ICT.

Progression in the Senior Phase

Success at N4 can allow progression to the N5 Computing Science course. Students may also consider courses in N4 Business, N5 Business Management and/or N4/5 Administration & IT.

Success in the National 5 Award will allow progression to Higher Grade course in Computer Science. Candidates who demonstrate strong literacy and ICT skills may be able to progress directly to courses in Higher Business Management and/or Higher Administration and IT course.