

A Student's Guide to the AS and Advanced GCE in

Information and Communication Technology

What do I need to know or be able to do before taking this course?

To study Information and Communication Technology (ICT) at AS or Advanced GCE you need have no formal qualification in the subject, but if you do have a GCSE in ICT you will find that this course will build on the knowledge and skills you have already developed. The most important factor is that you have an interest in, and are enthusiastic about, ICT.

What will I learn on this Advanced GCE course?

- ◆ The study of ICT at this level will enable you to learn about the administration and management of ICT systems.
- ◆ You will also learn a good deal of technical background knowledge to support your study of the running of ICT systems.
- ◆ The course is designed to encourage you to develop your problem-solving skills and examine your solutions not only from an academic, but also from an ethical and social point of view.
- ◆ You will need to put the theory of managing ICT systems into practice to produce projects for your coursework units, which are worth 40% of the available marks for the course.

What examinations will I have to take to get my qualification?

You may decide to study for an **Advanced Subsidiary in Information and Communication Technology**. This is the first half of the Advanced GCE course. It is a stepping stone to the full Advanced GCE qualification. You can take the AS on its own, if you and your teacher decide that is best for you. You will need to take the three **AS units** for this qualification. However, if you change your mind you can still decide to continue and take the full Advanced GCE. The first two AS units are examined by written papers and the third unit is coursework.



The full **Advanced GCE in Information and Communication Technology** is made up of the AS units plus three more units, called **A2 units**. You can decide whether to do the full Advanced GCE at the end of your AS course. Alternatively, if you decide to start the full Advanced GCE course and change your mind, you could stop after you have covered the AS units and get an AS qualification. The first two A2 units are examined by written papers and the third unit is coursework.

What is covered in each unit?

AS Units

Unit 1 Systems Administration

The main aim of this unit is to develop the knowledge, skills and understanding required to administer computer-based ICT systems. You will have to demonstrate knowledge of how large commercial and industrial ICT-based systems are administered but you will only be assessed within a context that is meaningful to you.

Unit 2 The Generation of Applications

The main aim of this unit is to develop the knowledge, skills and understanding that are required to use computer-based ICT systems effectively in problem-solving situations. You will be encouraged to consider support requirements for a range of existing applications.

Unit 3 Case Study and Problem Solution

This unit consists of **two** coursework tasks worth 40% of AS assessment.

a) Task 1

You will be asked to produce a detailed written report of the ICT administration processes undertaken by a major existing application within one of the following areas:

- ◆ industry
- ◆ commerce
- ◆ government
- ◆ society
- ◆ academia.

b) Task 2

You will be asked to produce and document an ICT solution to a significant problem that focuses on **one** area of application. This might include:

- ◆ modelling
- ◆ communications
- ◆ modern user interface
- ◆ data logging involving significant file processing
- ◆ database manipulation
- ◆ multimedia.

A2 Units

Unit 4 Systems Management

This unit considers, in some depth, the knowledge, skills and processes involved in being responsible for an ICT-based system. It also considers the complexity of systems in large companies and in small sole-trader businesses.

Unit 5 The Implementation of Event Driven Applications

The main aim of this unit is to develop the knowledge, skills and understanding that is required to use computer-based ICT systems effectively in problem-solving situations. This unit builds on the knowledge, skills and understanding in Unit 2 to extend your experience of using at least one event-driven programming language that can communicate with the generic application generator.

The development of programming skills is demonstrated via an event-driven object-based programming system because system managers are increasingly concerned with customers who communicate with ICT systems through event driven interfaces.

Synoptic assessment appears in Units 4 and 5 and considers all aspects of the AS/A2 course and will represent 20% of the Advanced GCE assessment

Unit 6 A2 Research and Applications Development Project

The unit consists of **two** coursework tasks worth 40% of A2 assessment

a) Task 3

You will be asked to produce a detailed written report to include the social, ethical, and technical issues surrounding a major systems application from one of the following areas :

- ◆ industry
- ◆ commerce
- ◆ government
- ◆ society
- ◆ academia.

b) Task 4

For this task you have to produce and document an ICT solution to a significant problem that involves the specification, analysis, design, implementation, testing and evaluation of an application that requires event-driven object-based programming eg Visual Basic. In addition to the areas mentioned for Task 2, you could consider:

- ◆ robotics
- ◆ user interface for multi-user applications
- ◆ database design.

How can I develop my full range of Key Skills?

As well as covering Advanced GCE study of ICT this course will enable you to develop some Key Skills, which will be essential to you whatever you go on to do afterwards. Examples of the Key Skills you can develop during this course are:

Communication

- ◆ preparing written documents for your project work
- ◆ taking part in discussions about the issues surrounding ICT
- ◆ using reference materials from books, the Internet and other sources

Application of Number

- ◆ calculating cost implications of ICT systems
- ◆ designing database structures

Information Technology

- ◆ you will obviously have many opportunities to develop this Key Skill!

Working With Others

- ◆ co-operating with others in the preparation of your project work
- ◆ obtaining information from professionals for your projects

Improving Own Learning and Performance

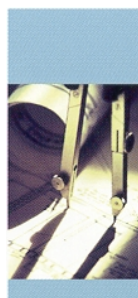
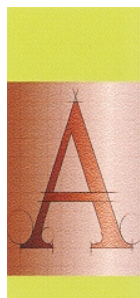
- ◆ the nature of the project work will involve continual review of your solutions

Problem Solving

- ◆ the whole nature of the specification takes a problem-solving approach to ICT
- ◆ your projects will provide evidence of your problem-solving skills

What could I go on to do at the end of my course?

After you have completed your AS or Advanced GCE course in ICT you may choose to seek employment in the ever-growing ICT-related industries, or continue your study full time at a higher education institution.



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