

Thinking about choosing to study Computing / IT at Advanced level?

or *Already studying it and wondering what your next step might be?*

This worksheet has been designed to help you consider how you can use what you learn from an Advanced level course in Computing / IT in your future career planning.

+ What to study it with?

When choosing to study A level courses full time it is usual to study four subjects at AS level in the first year then three at A2 level in the second year. It is also possible to study some subjects via the vocationally related route (Applied A level double awards and BTEC Diplomas). Computing would come under ICT on this route.

The other subjects you choose to combine with computing may have an influence upon what you can choose beyond Advanced level, so check out your choice. Although some Advanced level subjects require a good grade at GCSE as a foundation for study at the advanced level, others can be studied from scratch. It's a good idea to check this out before finalising your Advanced level course choices.

CAREER WARNING

* COMPUTING / IT

Studying any Advanced level course will give you two main things, knowledge about the content of the subject (hardware, software, system analysis and design, etc.) and skills in how to deal with that content. Although you may not need to remember the content for very much longer than your course, the skills you develop can be built on and used throughout the rest of your life.

MIX & MATCH +

Computing / IT AS/A2 courses can be studied alongside more traditional arts and humanities subjects such as English, History and Geography. Combining Computing / IT with Mathematics opens doors to a wider range of related careers. Adding Physics provides a foundation for entry into careers in information technology and engineering. If Business Studies, Economics or Accounting are taken a range of career possibilities in business and finance can be followed possibly using IT to provide business solutions. Students taking ICT via the vocationally related route will often focus on this area in greater depth and choose only one other subject at AS/A2 level to study alongside it.

The higher education and employment scenes are continually changing due to social, economic and political pressures. This worksheet, therefore, is not a definitive guide to your future career but is more of a prompt to get you thinking about making connections between your choice of Advanced level courses and higher education and career opportunities.

| <i>Computing / IT Skills</i> | | ⊗Ways in which you might learn these in the subject: |
|---|---|---|
| <i>Research skills:</i> | <input type="checkbox"/> researching a topic by finding and choosing the most appropriate sources to use <input type="checkbox"/> analysing written and coded information and drawing out from it the key pieces of information needed <input type="checkbox"/> summarising that information either in writing or in programming code | <input type="checkbox"/> learning about the social, economic, legal and other consequences of current trends in computing and IT <input type="checkbox"/> becoming a competent user of a range of computer equipment and software applications |
| <i>Communication skills - written and visual:</i> | <input type="checkbox"/> putting across clear and relevant information when writing about a subject <input type="checkbox"/> presenting observations and conclusions in reports and computer programmes <input type="checkbox"/> presenting text, graphics and numbers using templates, spreadsheets and databases | <input type="checkbox"/> writing essays, projects and assignments which include imported data from spreadsheets and databases <input type="checkbox"/> tailoring software packages to meet specific project briefs such as designing a database for a small business |
| <i>Communication skills - verbal:</i> | <input type="checkbox"/> taking part in discussions and making relevant contributions <input type="checkbox"/> listening and responding to others <input type="checkbox"/> giving presentations, using images where appropriate | <input type="checkbox"/> carrying out projects which involve speaking to others to determine the nature of the problem for which they require a computerised solution |
| <i>Numerical skills:</i> | <input type="checkbox"/> collecting and recording data <input type="checkbox"/> reading, understanding and interpreting data in a logical and systematic way <input type="checkbox"/> estimating, calculating and predicting sequences and outcomes using programming languages | <input type="checkbox"/> gathering and inputting data into spreadsheets and databases <input type="checkbox"/> writing simple computer programmes using computer code |
| <i>Problem solving:</i> | <input type="checkbox"/> analysing problems through discussion and investigation <input type="checkbox"/> identifying possible software solutions <input type="checkbox"/> selecting suitable hardware and software to develop programming solutions <input type="checkbox"/> testing software solutions systematically | <input type="checkbox"/> learning about computer hardware, software and systems and working out how they are best used to organise and process information <input type="checkbox"/> designing, producing and testing computer based systems |

⊗ Ways in which you might use these in a job:

- investigating data processing problems in businesses and other organisations
- designing a computer system using a specification produced by an analyst

- writing user instructions, technical manuals, software and hardware guides and instructions
- programming computers to process information and generate management information

- interviewing people as part of the process of systems analysis
- giving technical advice to users, either in person or by telephone

- testing and monitoring databases for accuracy and efficiency
- managing finances and working within budget limits

- thinking creatively and using your knowledge of information technology to advise a wide range of customers on the many different business problems which require an IT solution
- identifying faults and problems in computer systems and rectifying them

computing / IT

⊗ other skills

In addition to the specific skills you will develop whilst studying Computing / IT at Advanced level, you may also develop a number of other skills which will be extremely important, whether you go on to higher education or into employment.

>Improving own learning and performance:

- dealing with complex subjects
- checking understanding of work set and seeking clarification if unsure
- agreeing and setting targets and planning action
- following a plan to meet targets and making revisions to the plan as necessary
- checking progress with an appropriate person
- identifying any support needed and using it effectively

>Working with others:

- planning activities with others
- identifying and agreeing targets with others and checking understanding
- identifying and confirming responsibilities within the group
- agreeing working arrangements with those involved

>Working with Information Technology:

- deciding what, when and whether to use information technology
- selecting and using appropriate technological hardware and software to process data, prepare and present information
- identifying support needed and using it effectively

Computing

CAREER c-o-n-n-e-c-t-i-o-n-s

There are a number of careers where having an Advanced level qualification in Computing or IT, and all the skills that you develop through studying it, will be very useful. In fact, in the future nearly all occupations will involve using Information and Communications Technology in some way. There are, however, some jobs where the use of computers and/or software is the main aspect of the work. You can find out more about these careers by looking up information in your careers library under the Connexions Resources Classification Index (CRCI) codes listed here.

| CRCI code | Title |
|-----------|---|
| D | General information on careers related to Computing |
| D | Systems Programmer/Software Engineer |
| D | Systems Analyst |
| D | Computer Service Technician |
| D | Internet/Web Professional |
| D | Network Manager |
| F | Teacher |

As technology is moving at breakneck speed many of these occupations will be changing and evolving. As regards other occupations which involve some use of computers but which only require basic training or familiarisation, the list is endless and includes everything from Doctor to warehouse work.

Individuals with an interest and aptitude for IT working in non-IT jobs can sometimes find opportunities to work on IT solutions relevant to the particular industry. For example, within Insurance work, a member of staff with an expertise in IT may get involved in developing software to calculate premiums.

Although it is possible to enter some of these jobs after Advanced level studies, many of these areas recruit people with higher qualifications so you may need to seriously consider going on to higher education.

6 ways to check it out

Look at the 2 Skills pages.

- ① Put a cross against those skills you already have.
- ② Tick those skills you would like to gain or develop further.
- ③ Could you see yourself studying this subject at:

| | Yes | No |
|----------------|-----------------------|-----------------------|
| Advanced level | <input type="radio"/> | <input type="radio"/> |
| Degree level | <input type="radio"/> | <input type="radio"/> |
- ④ Look at the Career Connections section which lists careers related to Computing / IT. Do any of these appeal to you? Why?
- ⑤ Look at the 'Thinking of doing a degree' section which lists degree programmes that are popular with Computing / IT students. Tick those that appeal to you. Pick out your top 3 and explain why.
- ⑥ So what do you think?
Are you interested in studying Computing / IT further? Give 3 reasons for your answer:
 - 1
 - 2
 - 3

| | |
|--|--|
| <p>Remember: Advanced level course grades can be converted into UCAS points which count towards admission to university so it is important to choose subjects which reflect your interests and abilities.</p> | <p>A = 120 points B = 100 points C = 80 points D = 60 points E = 40 points</p> |
|--|--|

Thinking of * doing a degree?

Degree level programmes normally require a minimum of 2 A2 levels, or the equivalent, plus supporting GCSE passes. There are a wide variety of courses where Advanced level Computing / IT will be of direct relevance.

Degree programmes in Computing / IT

A wide range of single subject and combined courses exist, including both 3 year full-time courses and 4 year sandwich degrees. The latter usually provide students with work experience within the IT industry. Sandwich courses tend to be more vocational by giving students the opportunity to gain practical, hands on experience which can be useful when applying for jobs at the end of the degree. Many related degree and Higher National Diploma courses do not specify particular Advanced level requirements. However, the widest range of options is available to students who have also taken Mathematics alongside Computing. If Physics is also taken the full range of computer engineering programmes are available as well.

Computing related courses include:

- Computing Science
- Cognitive Modelling
- Theoretical Computer Science
- Computational Science
- Web design
- Computer Architecture
- Internet Computing
- Business Information Technology,
- E-Commerce
- Software Engineering
- Software Systems Analysis and Design
- Programming
- Multimedia Design
- Information Systems
- Applied Information Technology
- Information Engineering
- Artificial Intelligence
- Human Computer Interaction

There are many degrees where having an Advanced level qualification in Computing may not be of direct relevance but will be useful, however, so you need not be restricted by this list.

Note: A key question to ask about any course is how far does the content take into account current developments within computing, particularly through links with the IT industry?

Details of all the degrees available in these areas, and more, can be found on the University Central Admissions System website at www.ucas.com

Computing FACTFILE

Opportunities for Graduates

Recent statistics show the following trends for graduates from Computing / IT degrees:

- over 64% of graduates entered full-time jobs after completing the course
- few students (just over 10%) continued full-time study beyond degree level
- the majority of graduates going into employment enter related work in the IT industry
- I.T. graduates are also successful in gaining jobs in a wide range of professions including financial services, commerce, public sector and engineering
- there is a great variety of jobs and job titles in the IT industry and these are constantly changing in line with new developments
- some jobs with different titles may have similar tasks.

...jobs ✖

These are some of the jobs that Computing graduates have gone into in recent years ...

- Software Engineer
- Systems Analyst
- Computer Games Author
- IT Trainer
- Technical Support
- Business Analyst
- Public Sector Administration
- Trainee Chartered Accountant
- Retail Manager
- Clerical Assistant



need to find out more?

You might find these publications useful. Check to see if your Careers Library or local library have copies.

- > Careers and Jobs in IT
published by Kogan Page
- > Questions and Answers - Studying Computer Science
published by Trotman
- > GET: Science & IT 2007
published by Hobsons
- > Get Set for Computer Science
published by Edinburgh University Press
- > CRAC Degree course guide - Mathematics, Statistics & Computer Sciences
published by Trotman
- > Getting into IT and the Internet
published by Trotman
- > E-Commerce Uncovered
published by Trotman

Free information is available from the following organisations. If writing please send a stamped addressed envelope to cover postage:

- ▷ British Computer Society
1st Floor, Block D,
North Star House
North Star Avenue
Swindon SN2 1FA
01793 417424
www.bcs.org.uk
- ▷ Intellect - Trade Body for IT, Telecoms and Electronics Industry
Russell Square House
10 - 12 Russell Square
London WC1B 5EE
020 7331 2000
www.intellectuk.org
- ▷ E-skills Sector Skills Council for IT, Telecoms and Contact Centres
1 Castle Lane
London SW1E 6DR
020 7963 8920
Email: info@e-skills.com
www.e-skills.com