

5 WORK SKILLS COMPUTER SCIENCE WILL GIVE YOU



PROBLEM SOLVING



In school: Computers need specific and detailed instructions to follow to successfully complete a task. That's essentially what a computer program is. You'll learn how to write programs, taking those instructions and putting them into a language a computer can understand. Not everything will work...

MATHEMATICAL SKILLS



In school: Mathematical principles are essential to computer programming. You'll practice binary and hexadecimal conversions and calculations to simulate how a computer processes instructions. Computer science also requires practical skills including evaluating Boolean algebra, drawing logic...

DATA ANALYSIS



In school: We create a vast amount of digital data. Capturing and storing this data is an essential part of computer science. You'll explore the abstract concepts of attributes, records and files, as well as learn about specific data types and structures, which are used to represent information, and how to apply...

CREATIVITY



In school: Creativity and problem solving go hand in hand. Sometimes you'll need to think creatively when you're writing a computer program because it may not be obvious how to solve a particular problem. You might also have creative ideas for the development of an app or computer game.



LOGICAL THINKING



In school: Computers rely on logic to run and you need to learn how to think 'algorithmically'. You have to make sure your programs are logically sequenced when you write them and know how to avoid common errors through data validation and verification techniques. You'll also learn to...



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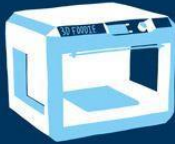
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WHERE CAN



COMPUTER SCIENCE



TAKE YOU?



ACCOUNTANCY

Over **840,000** people work in the UK accountancy industry. There are over 164,000 accountancy students in the UK and Ireland, with **numbers growing**.

Career paths: Chartered accountant, financial controller, forensic accountant



BANKING & FINANCE

Technology is becoming increasingly important across this industry – but **62% of employers say the digital skills gap is widening**, more than any other industry.

Career paths: Asset manager, market data analyst, technology analyst



CONSULTANCY

In the future, consultants with skills and knowledge in IT and technology, data analysis, digital marketing and cyber security **will be in demand**.

Career paths: Business analyst, management consultant, tech consultant



ENGINEERING

The proportion of young engineers has dropped over the last decade. This means there will be **high demand for younger workers** in the years to come!

Career paths: Automation engineer, cloud engineer, software engineer



ENTREPRENEURSHIP

Globally, **entrepreneurs aged under 36 make more money on average** than any other age group. Over 25% of UK students run their own business or plan to set one up.

Career paths: Business owner, freelancer, social entrepreneur



IT & THE INTERNET

People with qualifications in Information Technology have **one of the highest rates of employment in the UK**.

Career paths: Cyber security analyst, games developer, technical solutions

EMPLOYER:

INVESTMENT 20/20
See your future in finance
Part of The Investment Association

Investment20/20 are looking for tech savvy applicants. With computer science you can become an integral part of a successful business in Investment Management.

EMPLOYER:



The problem solving and core skills you learn in Maths can be applied to develop our engineering or digital technology to make driving smarter, safer and cleaner. On our apprenticeships you'll learn how to use these skills as an engineer or Digital Technology professional.



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Data sources: https://www.engineeringuk.com/media/1356/enguk_report_2017_synopsis.pdf; <https://www.hesa.ac.uk/news/11-01-2018/66247-higher-education-student-statistics/subjects> (Fig. 13); *No of workers: <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/datasets/employmentbyindustryyp13> (May 2018), No of new rail jobs: <https://successatschool.org/educadata/947/careers-in-rail> (YRP); *No of workers: <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/datasets/employmentbyindustryyp13> - May 2018, No of businesses: <https://www.statistics.gov.uk/3797/construction-industry-in-the-uk>; *New jobs: <http://ec.europa.eu/social/BSBServlet?docId=4407&lang=en> (UK 2011 roadmap references here); No of workers: <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/>; <https://www.ednenergy.com/sites/default/files/jobs-of-the-future.pdf> (p.4)

Careers in Computer Science

If you see yourself designing and creating software systems, then computer science might be the right course of study for you. If you are thinking of becoming a manager or administrator to a technical enterprise, a degree in computer science or information and computer sciences could provide you with the background needed to achieve your goals. If you are thinking about becoming a researcher in a technical field, information and computer sciences could provide you with the skills and knowledge necessary to succeed.

Computer science is a dynamic and rapidly growing area that has become an integral part of the world that we live in today. Having a degree in this field will provide you with a deep understanding of theories and emerging technologies. This knowledge and experience will allow you to develop cutting-edge solutions that address today's challenges. When applied in an interdisciplinary fashion, students can also draw on their other areas of interest such as biology, business, cyber security, economics, engineering, information assurance, languages and linguistics, mathematics, physics, public policy, etc., to address a wider range of complex issues.

Jobs directly related to Computer Science include:

- Application analyst
- Cyber security analyst
- Data analyst
- Forensic computer analyst
- Game designer
- Games developer
- Information systems manager
- IT consultant
- Software engineer
- Systems analyst
- Web designer
- Web developer

Jobs where Computer Science would be really useful include:

- IT sales professional
- IT trainer
- Nanotechnologist
- Network engineer
- Supply chain manager
- Telecommunications researcher

Typical employers

Common employers are IT consultancies and IT service providers. However, as most businesses rely on computers to function effectively, there are also opportunities within the IT departments of major organisations in sectors such as:

- aerospace and defence
- agricultural
- financial services

- healthcare
- manufacturing
- public and third sectors
- retail

You can also find opportunities with a range of small to medium-sized enterprises (SMEs).

Another option is to set up your own business, providing IT services such as web design and consultancy.

Skills for your CV

Computing degrees combine theoretical study and practical projects, teaching you subject-specific skills including:

- programming languages
- hardware architecture and construction
- network design and engineering
- software engineering
- multimedia design
- software tools and packages.

You'll learn how to specify, design and construct computer-based systems, evaluate and recognise potential risks and design creative solutions.

More generic skills include:

- teamwork and leadership
- communication
- problem-solving
- negotiation
- time management and organisation
- report writing
- commercial awareness.

Studying Computer Science at university – topics you may cover:

- foundations of computer science
- Java and object-oriented programming
- operating systems
- digital electronics
- graphics
- systems – including computer design, computer networking
- programming – including compiler construction, advanced algorithms
- applications and professionalism – including artificial intelligence, graphics, security