Sizewell C POWER UP

Why study? Computer Science

How studying GCSE Computer Science could lead to a job at Sizewell C

What does Computer Science have to do with the nuclear industry?

Like any modern-day business, nuclear power stations rely heavily on IT, especially new nuclear builds, such as Hinkley Point C and Sizewell C. Computers and their software are indispensable for handling all the data related to the reactor's design and operation, and they're vital for ensuring communication and smooth working between design, construction and operational teams.

Careers at Sizewell C

A computer science GCSE can help lay the foundations for support roles related to the computer systems and software used in nuclear power. For example, it might help you become an IT solutions technician[1], in which you could develop and support the hardware or software on which Sizewell C is run. It could be a step towards becoming a web developer, or even a career in cyber security, where you would help protect a vitally important part of the UK's infrastructure.

A GCSE in computer science could also be a route into operational and project management positions that require a high degree of computer and software literacy. You might be interested in a project controls manager[2] role, in which you'll learn how to use software tools to monitor and analyse progress on large construction projects like Sizewell C. Alternatively you might like the sound of being a document technician[3]. In this role, you're responsible for storing, cataloguing and sharing digital documents or other information. Having a computer science GCSE will help give you the background knowledge and skills you'll need, and it may count towards the entry requirements for many apprenticeships or entry-level roles.

YOUNG SZC

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Career pathways using Computer Science

- Apprenticeships are a great route into roles like being an IT solutions technician or a project controls manager. Find out more on the government's **Apprenticeships website** or have a look for **Sizewell C apprenticeships**.
- You may need a degree to qualify for other roles, such as a web designer, DevOps software engineer or cyber security specialist. In other cases, having a degree may improve your employment prospects.
- An internship or industrial placement can help you experience a role or industry, helping you learn more and open up further opportunities. Your college or university should be able to help you find suitable placements.
- EDF is working with local schools and colleges, such as **East Coast College (Lowestoft)**, **Suffolk New College** and **West Suffolk College**, so have a look at their websites for pathway courses too.

Computer Science skills

As a computer scientist, your logical, methodical approach is likely to make you adept at **problem solving**. In a large project like Sizewell C, you'll also need to be someone who's **aiming high**, looking to deliver excellence in major IT and software systems. As you progress, you might get to express your **leadership** and **teamwork** qualities, taking charge of project or support teams and getting them to work at their best.

Did you know?

The computer systems in a nuclear power station are so important that they're heavily protected. At Sizewell C and its sister site Hinkley Point C, the server rooms will be contained in a building designed to 'Safety Class 1': the world's most resilient building standard![4].

1. https://www.instituteforapprenticeships.org/apprenticeship-standards/it-solutions-technician-v1-0
2. https://www.instituteforapprenticeships.org/apprenticeship-standards/project-controls-technician-v1-0
3. https://www.zippia.com/document-technician-jobs/
4. See 'HPC PCSR3 – Sub-chapter 12.5 – Other Civil Works' report pages 20 (Layout) and 14 (Safety Classification of Structure), and https://www-pub.iaea.org/MTCD/Publications/PDF/Pub1639_web.pdf page 16 for definition of 'Safety Class 1'

All information correct at the time of going to print in December 2023.
Some of the images come from our sister project, Hinkley Point C, in Somerset.

Computer Science in action

Hardware, software or unaware? Take our computer science quiz!

1. Bugs in computer code can create errors, or even cause the software to crash. Select all the reasons why that might be problematic in a big project like Sizewell C:
a) Poorly written code could result in systems not working properly
b) It takes time and resources to track down and fix bugs
c) Design, manufacturing or operational errors caused by software bugs could cause delays or raise costs

2. An algorithm consists of steps that are carried out one after the other. Which of these algorithms describes a simplified version of how nuclear power is generated?
a) Surround reactor with coiled wire, connect wire to electricity grid, put nuclear fuel in reactor
b) Put nuclear fuel in reactor, use heat to make steam, use steam to drive turbines, use turbines to generate electricity
c) Burn nuclear fuel, use heat to make steam, use steam to drive turbines, use turbines to generate electricity

3. When we connect computers together, we can exchange data. Connecting to the internet lets us do things like send friends a message. Select all the reasons why an internet connection can also be a risk:
a) It might provide a way for a hacker to access your device
b) It can provide a way for viruses to spread
c) It could wear out your phone or computer more quickly

4. Select the reasons why it's important for major infrastructure like a power station to be secured against cyber threats:
a) To protect information about its design, operation and staff
b) To limit the number of people working remotely
c) To prevent sabotage that stops the power station from operating safely

Useful links

icanbea... Career ideas and opportunities in Norfolk and Suffolk

Young SZC: Connecting young people to careers and apprenticeships in the region

BBC Bitesize: What GCSEs should I take?

BBC: Jobs that use computing and ICT

Answers:
Q1. a), b) & c) Q.2 b) Q3. a) & b) Q4. a) & c)

Sizewell C

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