




ROYAL SOCIETY  
OF CHEMISTRY



**A Future in Chemistry**  
Your options at

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**18+**



Confused by the  
range of chemistry  
qualifications on offer?

Not sure if you want  
to go to university or  
get on-the-job training?

**This booklet should help you make  
those all-important decisions.**



## Why study chemistry?

A chemistry qualification opens the door to a wide range of careers options, both in and out of the lab. There are endless interesting and rewarding science-based jobs available – these can be in research, outdoors or in other industries you might not have thought of.

Chemists also play a vital role in the development of everyday products that help to support and improve our quality of life, as well as future products that we have yet to see and experience.

However, lots of trained chemists also end up working outside the traditional chemistry careers because the skills they develop from gaining a chemistry qualification can be used in many areas.

### Reasons to study chemistry further:

- It helps you to be analytical and logical – these skills are useful for many careers, not just in science.
- You can apply it to lots of different subjects, so gives you a great foundation.
- It is a core subject that enables you to cross over to the other core sciences or venture into biochemistry, geochemistry, chemical engineering and physical chemistry.
- It is an impressive degree to get.
- It can lead to many careers.
- **You just love chemistry!**

## Chemistry qualifications

Before you decide to study any subject, you should find out what the course will involve by reading course information, contacting admissions tutors or speaking to someone already doing a similar course. You can then make an informed decision about whether that course is right for you. Even courses with the same or similar titles can vary a lot between different institutes, so make sure you find out about each individual course.



**“I spent time researching artificial photosynthesis, developing a material that will capture as much of the energy in sunlight as possible.”**

**Sujata Kundu**  
PhD Student



## Chemistry at university BSc or MChem/MSci?

Most universities now offer both BSc (Bachelor of Science) and MChem/MSci (Master of Chemistry/Science) degree programmes. MChem and MSci degrees have exactly the same status as each other; these courses simply have different names at different universities.

The first two years of an MChem/MSci course are usually identical to those of the BSc course at the same institution and students then take different routes in year 3 or 4. In general, the additional year in an MChem/MSci course contains a greater quantity, and more advanced material, than in a BSc course. The entry requirements for the MChem/MSci courses are generally a little higher than those for the corresponding BSc courses.



**“My role involves getting great coverage of a story, and creating an angle or idea that turns out to be really popular with the media. It is very satisfying when an event you have organised is successful, with all participants thoroughly enjoying it.”**

**Sallie Robins**  
Freelance Science Publicist

## Your other study options are:

- **single or combined honours**  
Single honours chemistry degrees teach you only chemistry, but most universities offer the opportunity to study other subjects as optional modules. Combined/joint honours degrees teach chemistry alongside another subject, but these can vary in the amount of chemistry taught, so check course details carefully.
- **chemistry with a year abroad**  
There are degrees that involve a year studying at a university abroad. This is usually year three of your degree and you will follow the host university course and sit their examinations.
- **chemistry with a year in industry**  
This can give you a valuable insight and experience into chemistry as a career and can lead to a job offer on finishing your degree. Again this is usually carried out in your third year.

## BSc degrees:

- usually involve studying for three years (four in Scotland);
- provide excellent training in the chemical sciences and can open doors to a huge range of careers;
- you can opt for a course that involves a year in industry or abroad.

## MChem/MSci degrees:

- usually involve studying for four years (five in Scotland);
- provide a more in-depth study of chemistry than BSc degrees and usually involve a significant research project;
- offer more opportunities to develop skills such as presentation skills, problem solving and communication skills;
- may involve a year in industry or abroad;
- provide a good basis for a PhD or a career in chemical science research.

## Still not sure?

If you're unsure which to choose, don't worry as most universities allow transfers between BSc and MChem/MSci courses, usually up to the end of your second year. However, if your predicted grades satisfy the higher requirement, you would be well advised to enrol on the MChem/MSci course – it is easier to move down to the BSc than to move up to the MChem/MSci.

To find out more visit our website  
[www.rsc.org/careers/future](http://www.rsc.org/careers/future)

## Accredited degree programmes

The RSC accredits degrees that satisfy the academic requirements for Chartered Chemist (CChem) and Chartered Scientist (CSci) status in the UK and internationally. It is important to choose an accredited degree as this will help you in the future with career development.

To find out more visit  
[www.rsc.li/accreditation](http://www.rsc.li/accreditation)

## Related subjects

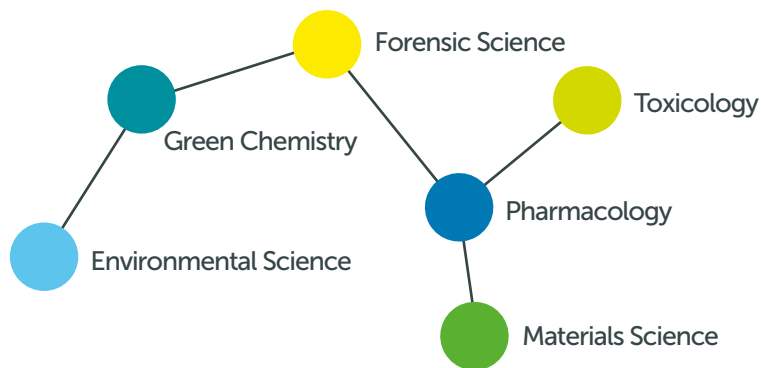
### What alternative degrees involving chemistry are available?

Chemical science courses, which include a significant amount of chemistry, are biochemistry, chemical engineering and pharmaceutical science. These require good knowledge and understanding of the chemical principles that underpin them.

Some courses allow you to specialise in a particular field of chemistry, for example medicinal chemistry, analytical chemistry and nanotechnology. If you're considering this you need to be certain that you are interested in the area you choose – you may be narrowing the options of what you can do after university. Research into the subject is vital, especially if you haven't studied it at school or college.

You may want to choose a more general chemistry degree that allows you to specialise in the final years of the course, when you will have a better understanding of what is involved and which aspects you most enjoy.

### Other subjects which are likened to chemistry or have high levels of chemistry content which you might want to explore include:





## Part-time & Distance Learning Courses

A wide range of personal circumstances and preferences means that not everyone can study full-time. Luckily, there are a variety of part-time and distance learning courses available providing a range of training opportunities.

## Routes into university

### What are the entry requirements?

These vary enormously between universities and some courses are more demanding than others. The UCAS website (<http://www.ucas.com/>) has a comprehensive database of courses available and their entry requirements. A different points system is operated in the Republic of Ireland and details are provided on the Central Applications Office website (<http://www.cao.ie/>).

### Do I need maths to study chemistry at university?

Maths is an extremely important part of nearly all chemistry degree courses. A-level (or equivalent) in maths is not always an entry requirement, you may also be required to do a course in maths once you reach university, and most universities will provide additional maths support during your degree.



### What if I don't have the necessary qualifications?

Some universities offer a foundation year (access course) as part of their chemistry course. These are designed for students who have shown the ability, but do not have the necessary grades or subjects for direct entry onto a BSc/MChem/MSci course. They cover a range of topics, including laboratory work, a project, mathematics and elements of other science subjects. After completing the foundation year you should be eligible to progress onto the university's BSc/MChem/MSci course.

For more information on different routes into university, talk to university admissions tutors or visit the Access to HE website

[www.accesstohe.ac.uk](http://www.accesstohe.ac.uk)



## Alternative routes to university

A three or four year degree course is not the only route into a career with chemistry. Why not consider some of the vocational routes and alternative courses available?

### What vocational training routes are there?

Foundation degrees are employment-based qualifications, providing professional development in different areas. They take two years to complete full-time and some can be studied part-time. You can also study for a foundation degree as part of a Higher Apprenticeship.

Higher National Certificates (HNCs) and Higher National Diplomas (HNDs) are vocational, work-related qualifications designed with industry to ensure you gain the skills and knowledge employers want.

For information on HNCs, HNDs and foundation degrees, visit the UCAS website.

[www.ucas.com](http://www.ucas.com)



## Apprenticeships

An earn-while-you-learn route which can lead to degree level study. Apprenticeships include work-based training and typically involve completing at least one nationally recognised qualification. As an apprentice you will gain valuable professional experience in your chosen industry which can lead to professional registration (i.e. Registered Science Technician or Registered Scientist status).

### There are different levels of apprenticeship:

Advanced Level Apprenticeships (QCF level 3) which you can take after GCSEs or equivalent. These are called Apprenticeships in Wales and Modern Apprenticeships in Scotland (SCQF level 6).

Higher Apprenticeships (England and Wales) are for those with a level 3 qualification (e.g. Advanced Apprenticeship, A-levels, NVQ Level 3, BTEC diploma) and can lead to an HNC, HND or Degree. Companies such as Unilever, GlaxoSmithKline, and Takeda, all offer Higher Apprenticeships.

For more information please visit

[www.rsc.org/careers/future/earn-while-you-learn](http://www.rsc.org/careers/future/earn-while-you-learn)

## Going to university

Choosing a course is only part of the challenge; the university also has to be right for you. There are plenty of online resources for researching universities but you should visit, go to open days, see the facilities and discuss the course and town/city life in more detail.

### There is not one university that suits everyone. Some things you should consider when choosing a university are:

- Courses available and entry requirements
- Location
- Campus or city university
- Accommodation options and costs
- Number of students at the university and on the course

For question ideas visit our website:

[www.rsc.org/careers/future](http://www.rsc.org/careers/future)

International students can also study in the UK and there is information available for students wanting to study chemistry on our website. Although it may be more difficult to visit for an open day, there is still a lot of useful material online that can help you make the right choice. It is also possible for you to attend educational institutions in other countries. This can be a rewarding experience, but is not recommended without thorough research.



## Finances and your future

The costs will vary and depend on where you live and study. For more information on tuition fees, accommodation costs and students finance visit our website [www.rsc.org/careers/future](http://www.rsc.org/careers/future).

## Working

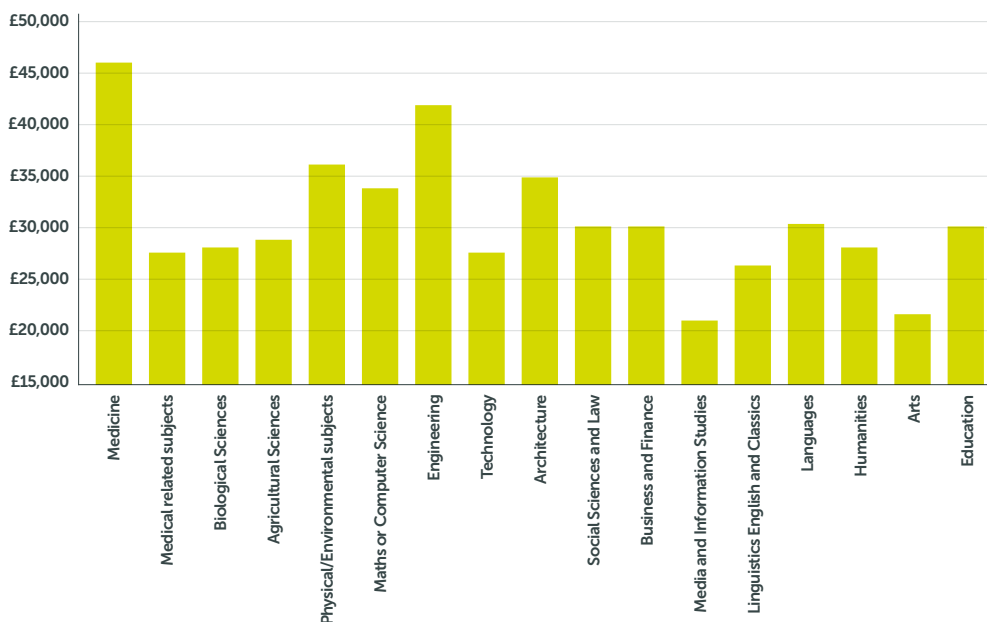
There is nothing to stop you having a paid job while you study at university (unless studying at Oxford or Cambridge). The NUS says that 'the majority of students work part-time during term time', but make sure it doesn't affect your studies. Most universities recommend no more than 15 hours paid work a week.

## Salary

Independent research shows that chemistry graduates have a high employment rate, and on average can earn up to £15,000 more than some other graduates<sup>1</sup>.

If you want to find out more about salaries in a particular career area, current job advertisements are a good source of information. Newspapers, career websites and magazines focusing on topics relevant to your area of interest are good places to start. Remember that salaries depend on a large number of factors, including: qualifications required; geographical location; experience and age of applicant; and size and type of the organisation.

## Average gross annual wage by undergraduate degree subject



# ChemNet

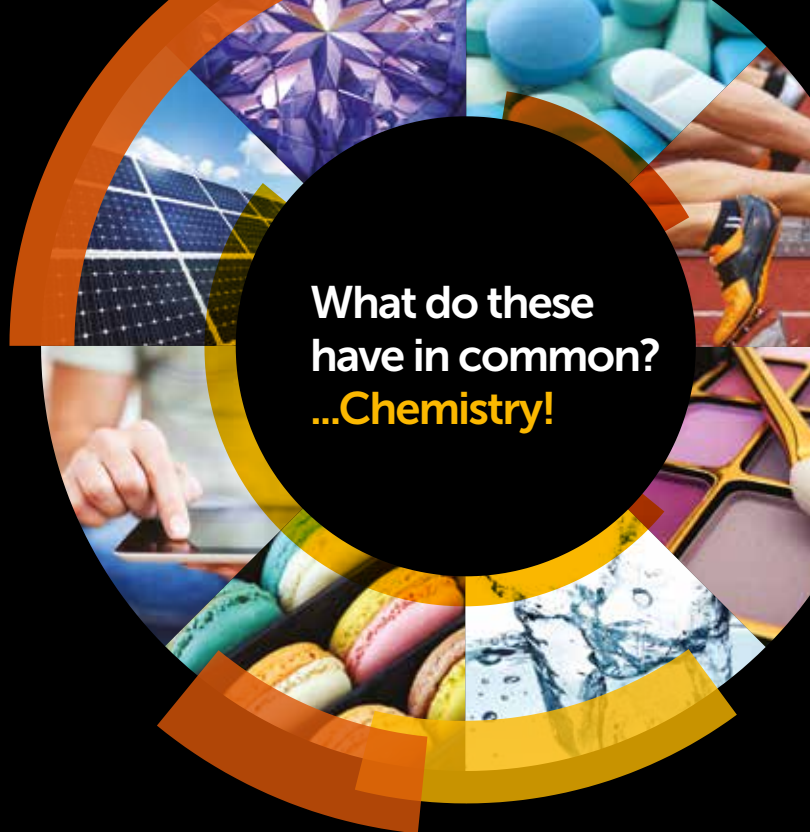
Our network for 14-18 year old chemistry students

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- Get expert study help from Dr ChemNet.
- Read The Mole magazine for the latest chemistry news and features.
- Explore course options and careers in chemical science.
- Attend unique events, careers talks and industry visits.

[rsc.li/chemnet](http://rsc.li/chemnet)



What do these  
have in common?  
...Chemistry!

## A Future in Chemistry

Discover your future in chemistry with our careers website

Learn more about your career and study options in chemistry.

Decide between university and vocational routes.

Inspire your career path by picking the right course and exploring real-life job profiles.

[rsc.li/future-in-chemistry](http://rsc.li/future-in-chemistry)





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