

Options with chemistry

Your skills

Over the course of your degree you develop a good mix of subject specific and technical skills as well as transferable core skills. Consider these alongside other achievements, such as paid work, volunteering, family responsibilities, sport, membership of societies, leadership roles, etc. Think about how these can be used as evidence of your skills and personal attributes. Then you can start to market and sell who you really are, identify what you may be lacking and consider how to improve your profile.

The work you do on your degree course develops your skills in problem-solving, time management, handling a mass of diverse data, and drawing conclusions. It also strengthens your skills in numeracy and information technology. Written and oral communication underpin your degree work and should make you an effective, articulate communicator. If you have a relevant work placement you will gain an appreciation of how businesses operate. You engage in the critical evaluation of outcomes of professional practice and develop your ability to reflect and review your own practice.

You also have knowledge, of course, of the essential facts and concepts relating to chemistry. You gain skill in the evaluation and interpretation of chemical information and develop your judgement and strategy planning. You practise the skill of information retrieval, particularly during projects, which also develops your planning and project management skills. You develop your practical skills and knowledge of working with relevant equipment through your experience of laboratory work, which requires attention to detail and an awareness of safety issues. You also acquire skills in using complex equipment. In many chemistry courses, students have to work together on a project and so demonstrate their ability to work in a team. Extracurricular activities can also give valuable opportunities to develop and demonstrate both teamwork and initiative.

Employment prospects

Every year, statistics are collected to show what HE students do immediately after graduation. These can be a useful guide but, in reality, with the data being collected within just six months of graduation, many graduates are travelling, waiting to start a course, paying off debts, getting work experience or still deciding what they want to do. For further information about some of the areas of employment commonly entered by graduates of any degree discipline, check out 'What Do Graduates Do?' and the AGCAS Special Interest booklet 'Your Degree... What Next?'

Many chemistry graduates are attracted to using their subject directly in professional-grade science-related positions in industry and the Health Service. Many also use their skills in unrelated fields such as business and finance. Just under 40% of chemistry graduates from 2005 ended up in an occupation related to their studies.

In 2006, six months after graduation, about 43% of new chemistry graduates had entered full-time employment and 5% part-time employment. 22% of those with jobs were working in scientific research, analysis and development. A further 18% entered other professional and technical occupations, such as laboratory technician. 11% found work in business and financial professions and IT professions, with a number working in business and finance roles.

Job options

Bear in mind that it's not just your degree discipline that determines your options. Get hold of the AGCAS Special Interest booklet 'Your Degree... What Next?' from your careers service. This looks more generally at the options for today's graduates and offers informed advice on career planning. Or try 'What jobs would suit me?', an online career planning tool, at www.prospects.ac.uk/links/ppanner.

You can choose between jobs that are degree-related or those that appeal because they use other interests or elements of your degree.

Jobs directly related to your degree

- [Analytical chemist](#) - performs structural, quantitative, product and formulation analyses using state-of-the-art techniques, often in support of other scientists.
- [Clinical biochemist](#) - analyses and interprets patients' blood and other samples to assist with the investigation, diagnosis and treatment of disease.
- [Forensic scientist](#) - analyses samples in relation to crime. Writes reports that are presented as evidence in court.
- [Research scientist \(physical sciences\)](#) - plans and conducts experimental research, evaluates ideas, uses and develops theoretical knowledge in either theoretical or applied areas.
- [Scientific journalist](#) - researches and writes scientific news and articles for the general public or for more specialist audiences.
- [Scientist, industrial research](#) - organises and carries out systematic investigations to develop new products or improve existing products to meet consumer demand for quality, safety and price.
- [Scientist, process development](#) - scales up processes developed in the laboratory so that they may be used in manufacturing large quantities. The aim is to produce products for the market in an efficient, economical and safe way.
- [Scientist, product development](#) - takes ideas or discoveries generated by research, then develops or formulates them to the point where new products can be manufactured. The work may be to develop new products or to improve the performance of existing ones.
- [Toxicologist](#) - carries out and interprets laboratory and field studies to identify toxins and their effect on living systems and the environment.

Jobs where your degree would be useful

- [Materials engineer](#) - conducts technical investigations related to the development and production of a wide range of materials, e.g. glass, metals, polymers and plastics.
- [Quality assurance manager](#) - develops and applies tests to ensure that raw materials, intermediates and finished products meet specified standards of composition, texture, taste, appearance and performance.
- [Sales executive](#) - negotiates sales and generates new business between producers and their clients; either business to general public or business to business.
- [Secondary school teacher](#), [Further education lecturer](#) or [Higher education lecturer](#) - teaches chemistry in schools or colleges of further education. Lecturers in higher education balance their teaching with research and the supervision of postgraduate researchers.

Although for many graduates the jobs listed here might not be their first, they are among the many realistic possibilities with

your degree, provided you can demonstrate you have the attributes employers are looking for. It's worth noting that many graduate vacancies don't specify particular degree disciplines.

To find out more about the above options and other jobs, see AGCAS Occupational Profiles and other sources of occupational information available in careers services. Occupational Profiles are also available on www.prospects.ac.uk/links/occupations.

Where are the jobs?

The chief employers of chemistry graduates are those in the chemical and allied industries, working with pharmaceuticals, agrochemicals, petrochemicals, toiletries, plastics and polymers. The UK chemical industry is the country's largest manufacturing sector.

Other significant employers include: the food and drink industry; the utilities and energy industries; health authorities; research associations, agencies and organisations; and education at all levels. Find more information in the following sectors:

- [Education](#) - which covers secondary, further & higher education;
- [Manufacturing](#) - with a number of relevant subsectors e.g., chemical, pharmaceutical, plastics & polymers, and textiles;
- [Science](#) - working largely in industry, the health service, government establishments, research and educational institutions.

Career management is an ongoing process, one that you'll no doubt develop all your working life. For further information on all the above employment areas, visit www.prospects.ac.uk/links/sectorbs or ask to see the AGCAS Sector Briefings at your careers service.

Further study

Many chemistry students who want to use their subject directly may have completed a four-year MChem degree.

In 2006, six months after graduation, about 32% of chemistry graduates went on to further study. Many employers who would seek to recruit chemistry graduates to use their subject directly place real value on postgraduate study. This is because they value the technical skills that are developed to a higher level, which are particularly useful in research, as well as other transferable skills e.g. analytical and report writing. There are many options for enhancing the technical knowledge already gained in your first degree. Many choose subjects directly related to their discipline, e.g. synthetic chemistry, organic chemistry or biological chemistry. Some choose subjects deriving from chemistry studies, e.g. cheminformatics, forensic investigation, drug chemistry, etc., and others go into areas that may have been only briefly covered in their first degree that they want to explore further, e.g. biology or physics-related subjects.

These trends show only what previous graduates in your subject did immediately upon graduating. Over the course of their career - the first few years in particular - many others will opt for some form of further study, either part-time or full-time. If further study interests you, start by taking a look at the AGCAS Special Interest booklet 'Postgraduate Study and Research' or the 'Further study' section of www.prospects.ac.uk. For a comprehensive list of courses, see 'Prospects Postgraduate Directory'.

Refer too to the 'Prospects Postgraduate Funding Guide', the AGCAS Special Interest booklet 'Postgraduate Study and Research' and AGCAS Vocational Course Surveys for further details relating to finance and the application process.

Other options

Don't forget there are alternatives to entering employment or postgraduate study, such as taking time out, volunteering or travelling. Longer term, you may want to consider starting your own business. Check out the AGCAS Special Interest booklets 'Beyond Nine to Five: Flexible Working', 'Self-employment' and 'Working Abroad', all available from your careers service.

Some chemistry graduates consider building up a specialist knowledge in a technical area and then moving into consultancy or freelance work.

What next?

This should have started you thinking about your future. Whatever stage you are at, your careers service will be able to help you. A huge number of resources, including most of those mentioned here, plus a wide range of other services, including individual careers guidance, employer presentations and workshops on topics such as successful applications and interview techniques, are likely to be on offer.

A full list of useful resources plus case studies of graduates in this subject can also be found on www.prospects.ac.uk/links/options.

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Written by Philip Harrison, University of Liverpool, September 2006.
Edited by Carol Bebawi, AGCAS, October 2006.

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