Options with mathematics

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 your other activities, 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.

As a mathematics graduate you acquire and develop a range of skills, both specific and general throughout your degree. Your highly developed numerical skills will allow you to be able to use numerical concepts and arguments throughout your work.

You will develop an analytical approach and be able to apply logical reasoning to problem solving. You will be highly adaptable, being able to address new problems in new contexts and transferring knowledge from one problem to another.

You also develop more general transferable skills including:

- time management;
- organising your work;
- meeting deadlines;
- working as part of a team.

Studying mathematics develops your communication skills, as you will give presentations to your fellow students and lecturers. As part of this you will explain your ideas and answer questions. Communicating results and outlining the main details of reports is likely to be a key feature of the degree course.

High-level IT skills will be developed through the use of computer applications which you will be able to apply in a range of contexts.

Job options

Bear in mind that it's not just your degree discipline that determines your options. Look at your degree... what next? for informed advice on career planning and graduate employment, or take a look at what jobs would suit me? a helpful starting point for self-analysis.

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

- Actuary, consultancy or Actuary, insurance company - evaluates outcomes of financial events by conducting careful studies of similar events in the past, thus assessing probabilities and risk.
- Statistician - collects, analyses, interprets and presents quantitative information in areas such as health, the environment, industry, government and education.
- Chartered accountant - provides services such as audit/assurance, accountancy, tax and other management services to a wide range of fee-paying clients, from the private individual to large, commercial and public sector organisations.
- Chartered certified accountant - works within private practice or the public sector providing accountancy services. Depending on the role and the employer they may work for one organisation or may be involved in assisting a whole range of clients and organisations.
- Chartered management accountant - provides the financial information necessary for the planning and control of organisations and commercial companies.
- Secondary school teacher - teaches maths to pupils aged 11-18. A Postgraduate Certificate in Education (PGCE), or Scottish Professional Graduate Diploma in Education (PGDE), is usually required.

Jobs where your degree would be useful

- Investment banker (corporate finance) - provides a range of financial services and advice to companies, institutions and governments seeking to manage corporate, strategic or financial opportunities.
- Market researcher (qualitative/quantitative) - plans and implements research projects, and analyses the results for use in business, health and social policy.
- Transportation planner - forecasts travel plans and develops strategies to manage demand. Considers ways to persuade people to change their behaviour in line with government policy and guidelines.
- Loss adjuster, chartered - impartial claims specialist responsible for investigating claims on behalf of insurance companies. The role involves examining the causes of loss or damage. Writing reports and making recommendations on payment are key areas of the job.
- Meteorologist - uses specialist computer programs and mathematical models designed to make both short and long-term predictions of weather and climate.
- Quantity surveyor - manages all costs relating to building projects, from the initial calculations to the final figures.

Other options

Other areas of interest may include those related to the financial sector, such as the role of pensions adviser or financial adviser. It is worth exploring the range of careers offered in finance-related industries such as insurance and accountancy for the full range of options. Numerical skills are required to a high level, by most, if not all organisations in some capacity. Therefore the range of employers requiring mathematics graduates is likely to be varied and extensive.

Although some of the jobs listed here might not be first jobs for many graduates, they are among the many realistic possibilities with your degree, provided you can demonstrate you have the attributes employers are looking for. It's also worth noting that many graduate vacancies don't specify particular degree disciplines, so don't restrict your thinking to the jobs listed here.

Explore types of jobs to find out more about the above options and related jobs.

Career areas

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 your degree...what next?

In 2007, six months after graduation, just over 60% of those graduating with a matematics degree entered full or part-time work. Of these, almost 40% entered the business and financial professional and associate professional sector. Other destinations include the education sector and clerical and secretarial occupations, with just under a tenth of mathematics

graduates entering each. 8% became commercial, industrial and public sector managers and almost 5% entered information technology professions.

This shows that whilst a fairly high proportion went into the business-related sector, there were representations, albeit sometimes quite small, across all the categories of types of work. This shows the diverse nature of the employers who are interested in those with numerical skills and demonstrates how versatile and marketable such a degree can be.

Where are the jobs?

It is fair to say that all commercial enterprises and publicly accountable bodies need individuals with numerical skills to ensure the finances are kept in order and the organisation runs smoothly. Therefore, employers of mathematics graduates include representatives from all areas of the public and private sector. The long list includes accountancy firms, NHS trusts, the retail sector, IT companies, advertising and marketing companies, engineering firms, the civil service and public bodies.

See the following sectors for more information:

- Accountancy and business services - firms providing advice and accounting services to clients in the public and private sector;
- Financial services - composed of retail banks, commercial banks, private banking and building societies;
- Transport and logistics - concerned with the movement of passengers and goods by road, rail, sea or air.

Career management is an ongoing process; one that you'll no doubt develop throughout your working life. Explore job sectors for further information on all the above employment areas.

Further study

Some graduates are interested in continuing to study at postgraduate level and this can be for a number of reasons. Some may wish to specialise in a particular area of mathematics, possibly as they would like to pursue an academic career. There are those who have perhaps completed a fairly general degree in mathematics and now would like to study a subject area such as operational research or perhaps combine their background in mathematics with an IT or business focus. In order to teach in the state sector, a Postgraduate Certificate in Education (PGCE) or a Scottish Professional Graduate Diploma (PGDE) is essential.

In 2007, six months after graduation, almost a quarter of mathematics graduates were in full-time study, with a further 14.5% combining work and further study.

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 thinking about postgrad study. Find courses and research to identify your options; you can also apply for courses online.

Look at funding my further study for more details relating to finance and the application process.

What next?

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. For something different, check out self-employment and flexible working or explore working and studying abroad.

This should have started you thinking about your future. Whether you are in the early stages of career planning, or you have definite ideas about what you want to do, you will find further information to help you in the following sections:

- Analyse your skills, interests and motivations to find out what jobs would suit me?
- Explore types of jobs to find out about entry requirements, salaries and working conditions.
- Explore job sectors for hints on breaking into various industries.
- Find graduate employers and see what they have to offer.
- Look at the advice on applications, CVs and interviews.
- Get work experience through vacation work or a work placement.
- Find courses and research and investigate postgraduate study opportunities.
- If you have already graduated, get online interactive advice.
- Visit your university careers service for a wealth of advice and resources to help with your career planning.

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The work of writers and editors is gratefully acknowledged.