Considering university courses when choosing A Level options

What you decide to study post-16 can have a **major** impact on your Higher Education choices and career options.

The Russell Group of Universities has produced a helpful guide aimed at students considering A Level and equivalent options and the following extracts are taken from this document. It includes advice on the best subject combinations for a wide range of university courses as well as advice on the best choices if students to not know what they want to study after school and need to keep their options open. The guide should be used in conjunction with the more detailed information on entry requirements that is published by individual universities. The most recent version of the guide can be found in full at: http://www.russellgroup.ac.uk/for-students/school-and-college-in-the-uk/subject-choices-at-school-and-college/

What subjects can give me the most options?

Many courses at university level build on knowledge gained at school. Where this is the case, universities need to make sure that all the students they admit have prepared themselves in the best way to study their chosen course.

For this reason, some university courses may require you to have studied one or more specific subjects prior to entry, others may not. However, there are some subjects that are required more often than others. These are sometimes referred to as facilitating subjects: Maths and Further Maths, English Literature, Physics, Biology, Chemistry, Geography, History, Languages (Classical and Modern). Of course, by choosing facilitating subjects you are not restricted to applying for degree courses which require those subjects and some popular degrees will be open to you without any specific subject background.

There are also some advanced level subjects which provide suitable preparation for entry to university generally, but which are not included in the facilitating subjects because there are relatively few degree programmes where a qualification in these subjects is a requirement for entry e.g. Economics and Religious Studies.

Do I need to study three facilitating subjects at A level to go to a Russell Group university?

In most cases three facilitating subjects are not required – but many courses do require you to have studied one or more facilitating subjects.
If you are not certain what degree you want to do then facilitating subjects will keep your options open. Put simply, the more you do, the more courses will be available to you.

How do certain subject combinations relate to university courses?

In considering your A Level subject choices, it is a good idea to consider the broad ways in which certain subject combinations at advanced level tend to relate to broad groups of university degree courses.

The Scientist

A student who is good at science often chooses Chemistry, Biology, Mathematics and Physics. This will keep open all the science/mathematics options at university. For the sake of maintaining a wider outlook on life, however, many students in this category will replace one of the sciences with an arts/humanities subject or a social science (indeed, some universities encourage this).

Students who are very good at mathematics may well do Further Mathematics (some very competitive universities will require you to have studied both for entry to their maths courses if your school offers both). So, often the choice will look more like this: Chemistry, Mathematics, Physics with an arts/social science/humanity/creative subject as an AS. The person who made this choice, however, would have to look at the implications of not doing Biology AS. When considering such implications, it is worth noting that, in the science field at university, many degrees fall into one of two camps: Biological/Life Sciences and Physical Sciences.

Biological/Life Sciences are degrees based on Chemistry and Biology. As long as you choose these two subjects at advanced level, a huge range of degrees will be open to you. These include degrees leading to a definite career path (for example, Medicine, Dentistry, Veterinary Science, Pharmacy, Dietetics) and degrees based on research (for example, Biochemistry, Biomedical Materials Science, Pharmacology).

Physical Sciences involve the practical application of Mathematics and Physics. As long as you take these two subjects at advanced level a huge range of degrees will be open to you, such as Engineering (mechanical, electronic/electrical and civil), Physics and Materials Science.

If you are a very talented scientist/mathematician, it is important that out of the four available sciences – Biology, Chemistry, Maths (which includes both Mathematics and Further Mathematics) and Physics – you should choose three. If you know you are inclined towards the Life Sciences then you should choose both Chemistry and Biology. If you know you are on the Engineering side you should choose Maths (and possibly Further Maths) and Physics.

Essays, essays, essays

Many students fall into the 'essay' category, where all their subject choices will be in the arts/humanities and social sciences (with perhaps one creative/talent-based subject).

A wide range of university degrees in the arts/humanities, social sciences and business fields will be open to these students, but not normally degrees in the mathematics/sciences field. Let us imagine that you study History, English Literature, Politics and Sociology at advanced level. Your degree at university might well follow on from one of these subjects or you could study for a degree in another arts/humanities subject or another social science. Alternatively, you could do a degree in something more vocational (such as Law or Management Sciences). As you can see, you will have many options open to you.

The Linguist

There are many language degrees open to students who have studied one language at advanced level. Some universities offer courses where you can begin a language from scratch. Some students will emphasise their linguistic abilities by doing not one but two foreign languages. Students that study languages are highly sought after by universities for language degrees or courses with a language component.

The Artist

If you have talent in music you may well want to study it at university. If so, it is important that you take Music to advanced level (along with performance grades).

If you have a talent in art you may well be thinking about an art foundation course as a precursor to a degree programme and you will want to consider an advanced level qualification in either Art or Art and Design. Either of these will provide you with the basis for your portfolio, which you will need to gain entry to an art foundation course.

For Drama, many universities don't require you to have specific subjects at advanced level. However, some do have subject specific entry requirements so do check carefully. In addition, some universities may ask you to attend an audition/workshop/interview.

Other considerations

The jump up from GCSE to advanced level qualifications can be demanding, even in subjects that you have studied before. If you are starting a particular subject from scratch, you are taking a risk that you won't enjoy it or will find it particularly difficult. Taking more than one new subject multiplies the risk.

Many specialist courses at advanced level take the majority of their course content from facilitating subjects. If you choose to study this facilitating subject rather than the specialist subject you will gain greater flexibility in your university choices.

Subject Links to Degree Courses

Degree subject	A-levels	Comments
Accountancy	Maths required or preferred Economics useful	Relevant work experience useful
Actuarial	Maths at specified grade Further Maths and Economics useful	Relevant work experience useful
Aeronautical Engineering	Maths, Physics essential Further Maths and Design Technology useful	
Anthropology	Biology and Geography preferred for some biological anthropological courses	
Archaeology	History, Geography, English or Science may be preferred	Practical field experience useful
Architecture	Maths and/or Physics required or preferred for some courses. Art sometimes a requirement and many schools of architecture prefer it. Some courses like art/science mix Design Technology may be useful	Relevant work experience useful Portfolio usually required
Art and Design	Foundation course usually required Art or Design Technology may be required	Portfolio required
Astronomy and Astrophysics	Maths and Physics usually required	
Biochemistry	Chemistry and Biology usually preferred. Some courses will specify Chemistry plus one from Biology/Maths/Physics Doing Chemistry, Biology and Maths or Physics will keep all Biochemistry courses open to you Further Maths useful	
Biological Sciences	Chemistry required plus one or two other Maths/Science subjects Biology preferred	
Biology	Biology and Chemistry usually required Maths or Physics useful	

Biomedical Sciences	Normally two from Biology, Chemistry, Maths and Physics Chemistry essential for some courses	
Biotechnology	One, two or three subjects from Chemistry, Biology, Physics and Maths may be required	
Business Studies	Maths required for some courses Economics useful	Relevant work experience may be required
Chemistry	Chemistry required and often Maths with another science subject Maths, Further Maths, Physics and Biology useful	
Classical studies/ Classical Civilisation	Relevant subjects include Classical Civilisation, English Literature, Latin, Greek, History and Modern Foreign Language	
Classics	Check individual courses for Latin/Greek requirements	
Computer Courses	Maths, a Science subject or Computer science required for some courses Maths, Further Maths, Computing, Physics, Philosophy, ICT useful	Relevant work experience useful
Dentistry	Chemistry and Biology required for most courses Some require Maths and Physics as well Maths, Physics, Further Maths useful	Relevant work experience essential
Drama	English, Drama, Theatre studies, English Literature may be required	
Economics	Maths and Economics may be required	Relevant work experience useful
Engineering	Maths and Physics usually required Design Technology may be acceptable or in some cases required Further Maths useful	Relevant work experience useful
Chemical engineering	Chemistry and Maths required Physics, Biology and Further Maths useful	
Mechanical engineering	Maths and Physics required Design Technology and Further Maths useful	
English	English with specific grades usually required. History, Religious Studies and a foreign language useful	
Environmental science	One or two Science subjects from Biology, Chemistry, Physics and Geography Maths may be required	

Finance	Maths required or preferred	Relevant work experience useful
French	French at a specific grade and in some cases a second language may be stipulated English Literature, History and Politics may be useful	
Genetics	Chemistry and/or Biology are usually required or preferred	
Geography	Geography usually required Another Maths/Science subject needed for BSc courses	
Geology/Geological sciences	Usually two from Maths, Physics, Chemistry and Biology Geography useful	
German	German required usually at a specified grade Another modern foreign language English Literature, History considered useful	
Health Sciences	Maths, Chemistry or Biology may be required	Relevant work experience necessary
History	History usually required at a specified grade Economics, English Literature, Philosophy, Politics, Religious Studies and a modern or classical language useful	
Ancient History	History or Classical Civilisation may be preferred subjects	
History of Art	History preferred for some courses	
Human Sciences/ Human Biosciences	Chemistry/Biology usually required or preferred	
Law	No specific subjects required Check whether Art and Music are acceptable History and other facilitating subjects useful Maybe one choice should involve essay/report writing	
Materials Science/ Metallurgy	Normally two from Chemistry, Maths, Physics and Biology (also Design Technology for some universities) Further Maths useful	
Maths	Maths often with a specified grade required and sometimes Further Maths	

Medicine	Check individual course requirements Chemistry almost always required and often Biology	Relevant work experience essential
Microbiology	One or two Maths/Science subjects including Chemistry and/or Biology required or preferred	
Music	Music and an instrumental grade usually required Specific piano grade may be required Some universities have a preference for at least one essay based subject	
Natural Sciences	Science subjects required	
Pharmacology	Chemistry and/or Biology required for most courses	
Pharmacy/ Pharmaceutical Sciences	Chemistry and one or two other sciences required for most courses Doing Chemistry and Biology keeps most courses open Maths and Physics useful	Relevant work experience essential
Philosophy	Philosophy and Religious Studies/Theology, Maths, Classical Civilisation may be useful	
Physics	Physics and Maths required for most courses Further Maths would be helpful and Chemistry useful	
Psychology	A science subject is usually required	Work experience useful
Religious Studies	Religious studies may be required or preferred for some courses Philosophy, English Literature and History may be useful	
Sports Sciences	Science required PE required for some Sport Studies courses	
Statistics	Maths required	
Veterinary Science	Check individual courses You should do Chemistry and Biology and one from Maths/Physics to keep all options open AS maths may also be required	Wide variety of relevant work experience essential
Zoology	One or two sciences required	Relevant work experience useful