

# Sixth Form Options

## **Making your choices**

When it comes to choosing your options, many people will tell you to choose the subjects you enjoy and that interest you – which is good advice. But, it is also important to think further ahead and to consider what you might like to do in the future.

It is scary to realise that the choices you make now will influence the choices you are able to make at the end of your A Levels and in turn, which degree courses, jobs and apprenticeships are open to you at the end of your time with us.

Having the right information to hand now will give you more options when the time comes. For some degrees/ jobs, you will need to have studied a particular subject or range of subjects beforehand.

It is our job here at the Liverpool Life Sciences UTC to help you make decisions that won't make things harder for you in the long term. We need to be sure that the subjects you take equip you for your chosen university course, apprenticeship or employment desire, or of course show off your skills in a particular subject area. And most importantly, if you haven't yet decided what you would like to do in the longer term, we can advise you on the subjects that help keep your options open until you do.

We have put together a grid below that will help you to tackle your A Level Options. You can look at it in a number of different ways:

- 1. If you know what direction you want to take when you are older, use the Possible Careers row and work from bottom to top to select the pathway and course options you need to take now.**
- 2. If you know what subjects you want to study, work from top to bottom to see the different apprenticeship, university and career options they open up for you within each pathway.**

We have suggested possible university courses, apprenticeships and careers. These lists are not exhaustive and we can help you look at the wider range of choices that you might wish to consider.

## **When making your choices, think about:**


1. Reflecting your strengths and interests
2. Keeping your options open with a range of subjects
3. Thinking about balance in your combination
4. Making sure you know why you are making this choice

## **The Liverpool Life Sciences UTC Options Process**

1. Read the information enclosed in this pack
2. Discuss possible choices with your parents and subject teachers – both at your current school and at the UTC
3. Think about what subjects you will enjoy and perform well in
4. Think about your preferred careers paths whilst thinking about your subjects
5. If you have questions, talk to the UTC team. Any prospective student can make a careers interview appointment with Head of Sixth Form, Dr Moore.
6. Fill out and return the Curriculum Choices Form and bring with you to your enrolment session

## The Life Sciences UTC Pathways

Students at the Life Sciences UTC are not limiting their options by choosing a specialist pathway. Students will **complete traditional A Level and BTEC qualifications. We simply add more, more and more** – masterclasses, leadership skills, laboratory skills, work placements, industry mentors, and project work.

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|--|--|--|---|---|--|--|--|
| <b>Possible Post-16 Options</b>  | A Level Chemistry<br>A Level Biology<br>A Level Physics<br>A Level Maths<br>A Level Psychology<br>A Level English<br>A Level Literature<br>A Level History | A Level Biology<br>A Level Chemistry<br>A Level Physics<br>A Level Maths<br>A Level Further Maths<br>A Level Psychology<br>A Level Geography<br>BTEC Applied Science | A Level Chemistry<br>A Level Physics<br>A Level Biology<br>A Level Maths<br>A Level Further Maths<br>A Level Computing<br>A Level Geography<br>BTEC Applied Science | A Level Biology<br>A Level Chemistry<br>A Level Physics<br>A Level Maths<br>A Level Psychology<br>A Level Geography<br>BTEC Applied Science   | BTEC in Forensic Science<br>A Level Psychology<br>Diploma in Criminology<br>A Level Sociology<br>A Level Biology | A Level Biology<br>A Level Chemistry<br>A Level Physics<br>A Level Maths<br>A Level Psychology<br>A Level Sociology<br>BTEC Health & Social Care | BTEC Health & Social Care<br>Sociology   |
| <b>Entry Requirements</b>  | At least 5 grade 8s at GCSE including 8s in Science (Separate or Double Award) and Maths. You will need at least a 6 in GCSE English                       | For A Level routes, at least 5 Bs at GCSE including Science. For BTEC routes, at least 3 Cs at GCSE including Science.   | For A Level routes, at least 5 grade 6s at GCSE including Science and Maths. For BTEC routes, at least 3 grade 4s at GCSE including Science.                        | For A Level routes, at least 5 grade 6s at GCSE including Science. For BTEC routes, at least 3 grade 4s at GCSE including Science. To do Veterinary at University, you will need 8 grade 8s at GCSE | For BTEC routes, at least 3 grade 4s at GCSE including Science.  | At least a B in GCSE Science, plus 4 other GCSEs at C including English and Maths.   | If you do not already have English and Maths at GCSE you will need to successfully repeat this in Year 12.     |
| <b>Possible UTC Post-16 Pathway</b>  | <b>Exploring Medicine/Dentistry</b>  | <b>Exploring Life Sciences</b>   | <b>Exploring Physical Sciences</b>  | <b>Exploring Animal Science</b>   | <b>Exploring Forensic Science</b>  | <b>Exploring Health Sciences</b>   | <b>Exploring Care</b>  |
| <b>Possible University Courses</b>   | Medicine<br>Dentistry<br>Biomedical Sciences   | Life Sciences<br>Biochemistry<br>Biotechnology<br>Microbiology<br>Biomedical Sciences<br>Pharmacology<br>Zoology   | Chemistry<br>Physics<br>Engineering<br>Earth and Marine Sciences<br>Astronomy<br>Maths<br>Metallurgy  | Veterinary Sciences<br>Bio veterinary Sciences<br>Zoology<br>Marine Biology   | Criminology<br>Psychology<br>Forensic Science<br>Biology   | Radiography<br>Midwifery<br>Nursing<br>Occupational Therapy<br>Ophthalmology<br>Physiotherapy<br>Psychology                                      | Health & Social Care<br>Social Work<br>Early Years   |
| <b>Possible Apprenticeships</b>  | Laboratory Assistant<br>Operating Health<br>Professional Haematology Technician<br>Dental Nurse  | Laboratory Technician<br>Sterile Services Technician<br>NHS Pharmacy Health Informatics  | Chemistry Technician<br>Engineering Process<br>Manufacturing  | Animal Nursing  | Criminal Investigation<br>Forensic Science<br>Microbiology   | Radiotherapy Assistants<br>Dietetic Assistants<br>Physiotherapy Assistants<br>Clinical Support Workers<br>Dental Nursing                         | Healthcare Assistant<br>Early Years Assistant<br>Residential Care Assistant<br>Play Work Coordinator           |
| <b>Possible Careers (a few to start you off)</b><br> | Doctor<br>Dentist<br>Pharmacology  | Biotechnologist<br>Geneticist<br>Microbiologist<br>Pharmacologist  | Analytical Chemist<br>Formulations Chemist<br>Engineer  | Vet<br>Marine Biologist   | Police Officer<br>Probation Officer<br>Social Worker<br>Community development<br>Forensic Scientist              | Nurse<br>Midwife<br>Physiotherapist<br>Radiographer  | Emergency Care Assistant<br>Nursery Nurse<br>Care Assistant – Elderly/ Disabled<br>Health Promotion Specialist |

## Additional Subject Information

### Biology

Exam Board: AQA AS and A2

In Year 1, students cover biological molecules, cells, and how organisms exchange substances with their environment, genetic information, variation and relationships between organisms.

In Year 2, students cover energy transfers in and between organisms, organisms respond to changes in their internal and external environments, genetics, populations, evolution and ecosystems, the control of gene expression.

Learning is assessed by completion of two written examinations based on year 1 content for a qualification in AS Biology or completion of three written examinations based on all year 1 and year 2 content for a qualification in A-Level Biology.

### Chemistry

Exam Board/ Syllabus: AQA AS or A2

Subject Name: Chemistry

Exam Board/ Syllabus: **AQA** AS and A2

In Year 1 students cover Atomic Structure, Amounts of Substance, Bonding, Energetics, Equilibrium, Periodicity, Organic Synthesis and Analysis and Redox Chemistry. The topics are delivered through carefully selected practical activities which constitute the context for exam questions. More contemporary analytical techniques dominate the organic section of work.

In Year 2 students cover Thermodynamics, advanced Kinetics, Electrochemistry, Colour Chemistry, Advanced Periodicity, Advanced Organic Synthesis, Protein and DNA Chemistry, Drug Action and advanced Spectroscopic Analysis techniques.

Learning is assessed by two written exams for AS Chemistry and through three exams for A2 Chemistry. These examinations are held at the end of each course.

### Physics

Exam Board/ Syllabus: AQA AS or A2

In year 1, students cover measurements and their errors, mechanics and materials, waves, and exciting new topics: particles and radiation, quantum phenomena and electricity.

In year 2, students cover fields and further mechanics and thermal physics, fields and their consequences, nuclear physics and choose from options including astrophysics, medical physics, applied physics and turning points in physics.

Learning is assessed by four written exams and two investigative practical skills assignments.

## **Applied Science**

Exam Board/ Syllabus: BTEC Level 3 Diploma / Extended Diploma

In Year 1 students cover compulsory modules including fundamental Biology/Chemistry/Physics, mathematics, and socio-political aspects of Science.

In addition students have the opportunity to design, plan and carry out their own practical investigations which develop investigative skills and practical techniques, enhanced by Project Based Learning in our Innovation Labs.

In Year 2, students cover a range of optional units including microbiology, biochemistry, genetics, diseases and infections. Much of this is lab based and set in vocational contexts with our industry partners.

Learning is assessed by continuous assessment of portfolio work and observation of laboratory skills. Students must submit all portfolio work to deadlines and are awarded unit grades at Pass, Merit or Distinction level.

## **Forensic Science**

Exam Board/ Syllabus: BTEC Level 3 Diploma / Extended Diploma

In Year 1 students cover compulsory modules including fundamental Biology/Chemistry/Physics, mathematics, and socio-political aspects of Science.

In addition students have the opportunity to design, plan and carry out their own practical investigations which develop investigative skills and practical techniques, enhanced by Project Based Learning in our Innovation Labs.

In Year 2, students cover a range of specialist units including microbiology, forensic evidence collection and analysis and criminology.

Learning is assessed by continuous assessment of portfolio work and observation of laboratory skills. Students must submit all portfolio work to deadlines and are awarded unit grades at Pass, Merit or Distinction level.

## **Maths**

Exam Board/ Syllabus: Edexcel

In Year 1, students build understanding of key topics including, calculus, coordinate geometry, sequences and series, trigonometry functions and identities, exponential functions and logarithms, binomial expansion.

In Year 2, students study algebraic fractions, functions, numerical methods, trigonometry, further trig identities, differentiation, partial fractions, more coordinate geometry, vectors and further integration.

Learning is assessed by written exam.

## **Further Maths**

Exam Board/ Syllabus: Edexcel

Students study complex numbers, numerical solutions of equations, inequalities, second order differentiation, further matrix algebra, hyperbolic functions.

Learning is assessed by written exam.

## **Computing**

Exam Board/ Syllabus: OCR

This course will focus heavily on developing learners' problem solving abilities and promote 'Computational Thinking'. The course is split into three component, with two of those being exam based and aims to cover all areas of the technical functioning of computers. Learners will progress their understanding of computational processes and logic to uncover the methods used in developing robust hardware and software for a rapidly changing environment. This course will challenge learners to develop their understanding in the areas of functional computer systems, Algorithms and problem solving, and also give each student an opportunity to identify a real-life problem and engineer their own software based solution to combat the issue.

Learning is assessed by written exam and a controlled assessment unit.

## **Health and Social Care**

Exam Board/ Syllabus: BTEC Level 3 Diploma / Extended Diploma

In Year 1, students cover topics including health, safety and security, sociological aspects of health, Equality, diversity and rights, plus a continued professional development (CPD) unit. There is a particular focus on effective communication skills.

Students are expected to undertake 100 hours of work experience in three different places. The placements will provide perfect opportunities to put into practice some of the practical skills taught in the health suite.

In Year 2, students continue with units of work on Infection Control, Elderly Care, and Physiology of two diseases or disorders of your choice to examine and research.

Learning is assessed by completing a series of units of work as coursework, in line with Edexcel guidelines for submission and final deadlines. Students must submit all portfolio work to deadlines and are awarded unit grades at Pass, Merit or Distinction level.

## **Psychology**

Exam Board/ Syllabus: AQA AS and A Level (New Specification)

In year 1 students cover social influence, memory, attachment, approaches, psychopathology, and research methods.

In year 2, students cover social influence, memory, attachment, approaches, psychopathology, research methods, biopsychology, issues and debates in psychology, relationships, eating behaviour and aggression.

Learning is assessed by completion of two written exams based on year 1 content or 3 written exams, based on all year 1 and 2 content for a full A Level qualification.

## **Sociology**

Exam Board/ Syllabus: AQA AS and A Level

In year 1 students cover education, methods in context and research methods, families and households.

In year 2, students cover education, methods in context and theory and methods, families and households and beliefs in society, crime and deviance and theory and methods

Learning is assessed by completion of two written exams based on year 1 content or three written exams, based on all year 1 and 2 content for a full A Level qualification.

## **Criminology**

Exam Board/ Syllabus: Level 3 Applied Diploma

In year 1, you will understand how crime reporting affects the perception of criminality and look at how campaigns are used to elicit change. You will also start to understand criminological theories, causes of criminality and policy change.

In year 2, you will gain an understanding of the process of criminal investigations and the different processes of the criminal justice system and the role of punishment.

Learning is assessed through assignments, essays, reports, assessed practical work and two external exams.

## **English Literature**

Exam Board/ Syllabus: AQA (Specification B) AS and A2

In year 1, students cover aspects of Drama (Shakespeare), prose and poetry.

In year 2, students cover aspects of Literary Criticism, Shakespeare, Pre 1900 texts.

Learning is assessed by four written examinations and two written essays.

## **Geography**

Exam Board/ Syllabus: AQA AS and A2

In year 1, students cover rivers, floods and management, hot desert environments, population change, geography of health, geographical skills and fieldwork (including a Rivers Investigation).

In year 2, students cover plate tectonics and associated hazards, ecosystems, development and globalisation, fieldwork (including psammosere succession).

Learning is assessed by a Physical and Human Geography exam worth 70% of AS or 35% of A Level, a Geographical Skills exam worth 70% of AS or 15% of A Level, a Geographical Contemporary Issues exam worth 30% of A Level and a Geography Fieldwork Investigation exam worth 20% of A Level.

## **History**

Exam Board/ Syllabus: AQA AS and A2

In years 1 and 2, students cover Tudor England 1485-1603, The Birth of the USA 1760-1801 and 100 years of Anti-Semitism.

Learning is assessed by two written exams and a 3000 word essay worth 20% of the overall A Level.