

applied science

BTEC National Extended Certificate and National Diploma

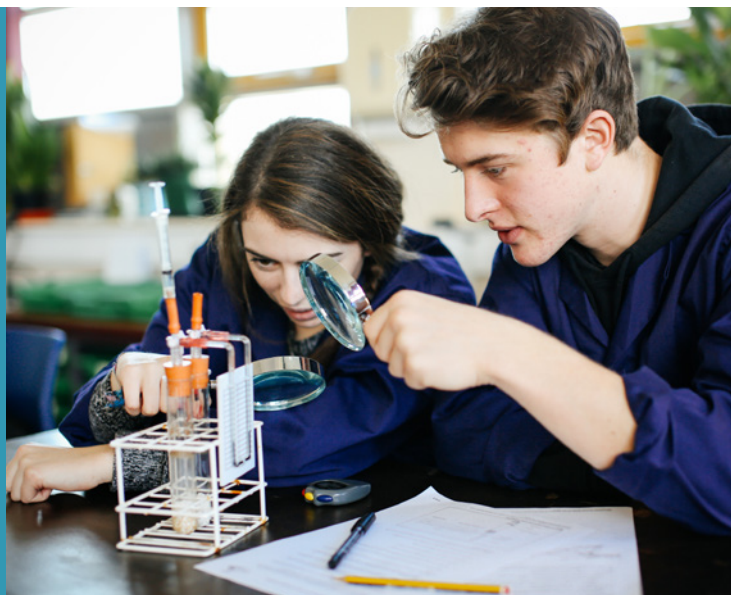
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What is this subject about?

BTEC Applied Science is a challenging and worthwhile qualification for students with an interest in science, particularly from a practical point of view. The course reflects the fact that it is Applied Science by focusing on practical scientific investigation and work-related assignments, rather than a broad range of scientific theory for its own sake.

It gives you the opportunity to study science beyond GCSE in a way that enables you to succeed and do well, even if you have found it tough going to achieve strong results in exam based courses at GCSE. This is because it is assessed through coursework assignments rather than entirely through exams. This means you can check your thinking and understanding with your teachers as you go along, rather than being faced with having to learn and memorise a large body of scientific theory and knowledge – and then have to apply it under exam conditions to solve problems you will not have seen before. The Extended Certificate qualification is equivalent to one A Level whilst the Diploma is equivalent to two A levels in terms of the number of lessons, the amount of work needed and the UCAS points value.

What will I study over the two years?

The course approaches a number of scientific ideas from across Biology, Chemistry and Physics in a practical and experimental way. The topic areas covered include different types of cells and tissues; atomic structure and bonding; chemical and physical properties of substances related to their uses and waves and their application in communications. These ideas underpin the science involved in a wide range of human activities. Learners will undertake a range of practical work relevant to the chemical and life science industries including an introduction to quantitative laboratory techniques, calibration, chromatography, calorimetry and laboratory safety as well as the stages involved in planning experiments and interpreting data to draw conclusions.

In addition, students on the Diploma course will study units covering the importance of health and safety in work place laboratories, how data is stored and communicated and how organic liquids and solids are made and tested industrially as well as studying further topics related to aspects of Biology, Chemistry and Physics in addition to more specialised units. Students will have the opportunity to plan and carry out an independent investigation and will be encouraged to undertake a science-related work experience placement.

How is this course assessed?

The Extended Certificate course consists of four units studied over two years. The course is assessed predominantly through coursework assignments, however two of these four units are assessed externally with 25% of the course being assessed via an external exam.

The Diploma course consists of 8 units of which 3 are externally assessed. As with the Extended Certificate, the course is predominantly assessed via coursework assignments with 25% being assessed via 2 external exams.

What skills will I need and develop in this course?

You need to have good communication and numeracy skills. In order to meet the deadlines for the assignments, you will need to have (or develop) strong organisation and time management.

The course develops a wide range of skills needed for life, in work and at university. This includes research, time management, self-organisation, giving presentations, and the ability to write well and precisely in good English. You will develop strong practical skills in scientific measurement, experiment and investigation. The methodical and careful approach needed in laboratory work is of wide benefit – not just in science.

What can the course lead to in terms of higher education and future careers?

Students studying BTEC Applied Science have used the science base to enable them to progress to a wide range of university courses including BSc courses in Sports Science, Sports Therapy, Teaching, Paramedics, Nursing, Radiography, and Equine Science, as well as broader based Foundation degrees in Biomedical Science and Animal Behaviour. In combination with one or more A Levels from Maths/Physics/Chemistry/Biology a wider range of more specialised science degrees are feasible including entry to some Engineering courses. As part of an appropriately chosen overall programme of study it is also suitable for progression on to higher education in fields not particularly related to science. The Extended Certificate can also be developed further after you leave Esher by taking more units to widen your expertise and achieve the more specialised Diploma or Extended Diploma qualifications. This is a natural way forward to qualifying and working specifically as a science technician.

What are the formal entry requirements for this course?

In addition to the College's standard entry requirements you will need to have achieved a minimum of:

- Grade 4's in GCSE Combined Science or in triple science (in GCSE Biology and in GCSE Chemistry and in GCSE Physics)
- Grade 4 in GCSE Maths

Our expectation for this course is also that you have achieved a minimum of a Grade 4 in GCSE English.

For some students there will need to be a discussion at enrolment about whether an A Level or a BTEC science programme is appropriate, and that decision will be taken on the basis of your GCSE results, both specifically in the related subjects as outlined above, but also more broadly.

Subject combination advice:

BTEC Science can be combined with a wide variety of other courses. It goes well with A Level courses where there is some science orientated thinking such as Psychology, Geography and PE. It fits well in a science programme containing A Levels in Biology and/or Chemistry. It is particularly helpful alongside BTEC Health and Social Care as a preparation for degrees in nursing and related fields, and similarly alongside BTEC Sport or A Level PE as a preparation for degrees in sport related fields. In finalising a programme of courses, consideration should be given to the extent to which courses support each other and to the overall quantity of coursework involved.

What extra support/enrichment activities are on offer?

In addition to giving you full support with your assignments we plan a range of visits and also input from speakers to give insight into how science is actually practised in the real world. For those studying the Diploma in Applied Science, we will support you in undertaking a Science related work experience placement.