



A STEM-SPECIALIST SIXTH FORM WITH A STRONG ACADEMIC AND TECHNICAL FOCUS

YEAR 12 ENTRY

A FOCUSED APPROACH TO EDUCATION



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Founding members
of UTC South Durham



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YEAR 12 ENTRY

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“The students we meet from the UTC not only have an excellent technical background but are also very employable. Throughout their time at the college they spend a lot of time engaging with the business community and are therefore confident and comfortable in a corporate environment which makes them stand out against their peers.”

Nina, Communications Manager at Hitachi

Founding members
of UTC South Durham



HITACHI
Inspire the Next



WELCOME TO UTC SOUTH DURHAM

A very warm welcome to University Technical College South Durham, a state-funded, purpose-built Sixth Form and school for 13-19 year olds. We opened in September 2016 and our first Ofsted inspection was in January 2019, where we achieved ‘Good’ judgments across all categories, including our Post-16 provision. A ‘Good’ judgment is rare for new educational establishments, and shows the strength of the core education that underpins the UTC.

We specialise in STEM subjects (science, technology, engineering and maths), with a focus on engineering and advanced manufacturing. We exist to help our students prepare for the world of work, providing them with an excellent academic and technical education alongside developing their professional skills.

Our 2019 results were fantastic, with 100% pass rate at A-level and 72% Distinction* grade in Tech Level Engineering. Our Tech Levels at Distinction places us in the top of the North East’s Post-16 providers.

Our commitment to supporting our students’ professional development means that they are highly successful in securing jobs, apprenticeships, and places for further study. Our destinations are impressive; in 2019:

- Everyone who wanted to went on to university and all of them to study STEM degrees
- Over half secured apprenticeships (higher, advanced or degree) – eight times the national average!
- Nobody was classed as NEET (not in education, employment or training)

In Sixth Form, students study one of two pathways: a two year Level 3 route of three or four A-levels and equivalent qualifications, or a one or two year Level 2 pre-apprenticeship route of practical engineering skills. We meet with all applicants individually before enrolment to design a programme which meets their needs and career aspirations.

As laid out in the Student Leaver Profile (see page 2-3), there are three clear strands to our student experience:

- STEM focused academic qualifications
- Specialist technical skills and knowledge
- Professional learning and experience: all students undertake a comprehensive programme of visits and placements in companies, including two weeks work experience, in addition to industry-led projects in the UTC and other career-focused enrichment

This approach to education is proving successful, with employers and parents stating that UTC students have strong workplace skills and a confidence that sets them up for future careers. Employers describe students as ‘confident’, ‘capable’ and ‘very employable’. In the feedback to Ofsted inspectors, 94% of parents said they would recommend the UTC to other parents, 98% said that their child is happy, and 100% said that their child is well looked after at the UTC.

We would be delighted to welcome you to UTC. Please visit us to meet our students and staff, and to see our impressive facilities for yourself.

Tom Dower, Principal

The Student Leaver Profile is what we aspire to for all of our students. It was created by our wider community of staff, students, parents, business and community partners. Each student will have the opportunity to develop their academic and technical knowledge and understanding, professional career experiences and core skills. At UTC, students' personal, professional and technical development is just as important as the grades they achieve.



CORE SKILLS

COMMUNICATE

- To communicate professionally and appropriately.
- To present ideas clearly to varied audiences and for varied purposes, checking that meaning is understood.
- To listen to others carefully and actively and respond to them in a professional and supportive manner.

ORGANISE

- To be punctual, fully equipped and ready to learn and contribute.
- To set and prioritise personal, educational and professional learning goals and plan how to achieve them.
- To actively take responsibility for our own learning; use initiative; ask questions; seek help when needed.

PERSEVERE

- To be willing to move outside of comfort zone in order to develop and deepen learning.
- To always apply full effort and drive towards success, even if not always successful first time.
- To approach situations creatively, take pride in our work and produce it to a high standard.

REFLECT

- To welcome feedback and apply it positively to improve our work and ourselves.
- To critique my own and others' work constructively and with compassion against objectives and take time to redraft and improve it (where appropriate).
- To learn from feedback and critique and use this to inform future goal setting and improve self-perception.

COLLABORATE

- To help others to achieve by encouraging them and supporting them academically, emotionally and professionally.
- To adapt to different ways of working, to work hard and strive to achieve team goals.
- To share responsibility and contribute fairly to goal setting, planning and tasks.

RESPECT

- To take care of resources, materials and environment and use them safely and responsibly.
- To act with integrity at all times and be mindful of how actions can affect others.
- To be compliant with the rules and routines of the college, community and workplace.

WHY CHOOSE SIXTH FORM AT UTC?

Sixth Form at UTC South Durham provides students with unique opportunities to develop their professional skills alongside gaining academic and technical qualifications.

Sixth Form students are treated like young professionals and benefit from:

- Small class sizes, ensuring that students are able to access 1:1 support as and when required
- The opportunity to focus on STEM and technical subjects, including engineering Tech Levels
- The chance to develop professional skills, including those detailed in the Student Leaver Profile (page 2-3), and work with local employers through industry projects and work experience placements
- Bespoke 1:1 careers advice
- Unique extracurricular opportunities, such as The Lord Baker Award for Technical Education
- Sixth Form only areas, including the common room and balcony study space
- Free, on-site gym access
- A 16-19 Sixth Form bursary (available to students whose household income is below a certain threshold)



GET READY
FOR THE WORLD
OF WORK

CAREERS AND DESTINATIONS

UTC South Durham provides a planned careers programme which is delivered across all year groups and is embedded into curriculum learning. The impartial careers advice we offer is tailored to meet the needs of each individual student.

We offer students a wide variety of opportunities that help them to develop their career aspirations, including:

- Industry projects and work experience placements
- Visits to and from industry and business partners
- Careers fairs, classes and workshops
- Higher Education open days
- UCAS and apprenticeship fairs
- Mock interviews
- Access to 1-2-1 careers information, advice and guidance
- National Citizenship Service

“It has been a great pleasure in getting involved with the UTC over the last year. As an engineering business we are aware of the urgent need to get as many people engaged with engineering as early as possible in their education, and the UTC obviously plays a major part of that. We have been involved in a number of initiatives, from career events, mock interviews, developing digital skills, industry projects to site visits. We have always been extremely impressed by the enthusiasm and capability of the students. We hope that we continue to strengthen our relationship over the future years and really support the UTC and their students into a career in engineering.”

Costain Group



INDUSTRY PROJECTS AND WORK EXPERIENCE PLACEMENTS

Over 150 businesses and organisations are keen to support our students because they know we are developing their future employees. Our students experience a broad selection of industrial sectors and companies from small, local enterprises to multinational corporations. These experiences will support students in making career decisions which are right for them.

Students in Year 12 take part in a 12 week industry project of their choosing. Working in small teams, students must develop their project with the support of mentors from industry. They are then invited to present their solutions back to industry partners. Previous projects include: designing a train compartment with Hitachi, considering the wellbeing of highway workers with the North Yorkshire, North East (Highways) Community, and developing a rowing boat with a world ocean rower.

“UTC students have come up with innovative solutions for real life situations during their industry projects. We look forward to working further with the UTC and their students.”

North Yorkshire, North East (Highways)
Community working with Highways England



ENGINEERING

We specialise in engineering and advanced manufacturing, and we offer three Level 3 courses for post-16 students: BTEC Engineering, Tech Levels in Electrical and Electronic Engineering, and Mechanical Engineering and Design.

Each course will lead to a distinct engineering pathway in the future. Students learn skills, including:

- Health and safety
- Interpreting engineering information
- Practical engineering operations

The courses are delivered through practical application, enabling students to build up their skills to using industry standard machinery. Business-led design and make projects cement those skills and ensure that students grow in confidence.

89%

of Tech Level students achieved a distinction or distinction* in engineering (based on 2019 post-16 leavers)

ELECTRICAL AND ELECTRONIC ENGINEERING

Electrical and Electronic Engineering is a multidisciplinary subject that includes mathematics for engineering, electronics, and systems and control engineering. As technology develops and moves on, the varied and ever changing fields of engineering multiply and adapt. Electrical and electronics are technical systems and have become more complex over time. The skills gained on this course are applied in industrial settings such as car manufacture where skilled personnel and robots work on a production line to engineer components together.

Topics covered include:

- Electrical operations, automation control and robotics
- The use of maths as an aid to model and solve problems across a range of practical engineering contexts
- The relevance and role that manufacturing processes and systems have in the production of multiple components
- How to use Computer Aided Design (CAD) for circuit design and simulation
- How to manufacture and construct electronic circuits safely, and find faults in electrical and electronic equipment

This Cambridge Tech Level course is worth the equivalent of two A-levels and can be studied alongside another A-level or Level 3 course.

Entry requirements: minimum of grade 6 in GCSE Maths and grade 6 in GCSE English Language

MECHANICAL ENGINEERING AND DESIGN

Mechanical Engineering is an engineering discipline that combines engineering physics and mathematics principles with materials science to design, analyse, manufacture, and maintain mechanical systems. In addition to these core principles, mechanical engineers use tools such as computer-aided design (CAD), computer-aided manufacturing (CAM), and product lifecycle management to design and analyse manufacturing plants, industrial equipment and machinery, heating and cooling systems, transport systems, aircraft, and weapons.

Topics covered include:

- The scientific and mathematical principles used by engineers to identify the most suitable materials in a given engineering context
- Mechanical engineering systems and components, and their applications to the design of engineering products and systems for consumers and industry
- How to manage an industrially sourced design project
- The use of 3D parametric modelling software in the design process
- The systematic approaches to design such as design for manufacture (DFM) and design for assembly (DFA)

This Cambridge Tech Level course is worth the equivalent of two A-levels and can be studied alongside another A-level or Level 3 course.

Entry requirements: minimum of grade 6 in GCSE Maths and grade 6 in GCSE English Language

£45,760
is the average salary of
engineering professionals

ENGINEERING BTEC

Engineering BTEC provides a broad basis of study for the engineering sector, and is suitable for students applying for apprenticeships or, when combined with A-level courses such as maths and physics.

Topics covered include:

- Mechanical engineering systems and components
- The process of engineering design
- The relevance and role that manufacturing processes and systems have in the production of multiple components

This BTEC Level 3 National Extended Certificate course is worth the equivalent of one A-level and can be studied alongside two other A-level or Level 3 courses.

Entry requirements: minimum of grade 4 in GCSE Maths and grade 4 in GCSE in English Language



SCIENCE

At UTC South Durham, we offer A-levels in Biology, Chemistry and Physics, and a Level 3 BTEC qualification in Applied Science. Our state of the art equipment allows students to conduct industry standard practical work to support theoretical content. We are also able to utilise the facilities and expertise of our business partners and university links.

BIOLOGY

A-level Biology is a strong pathway to university and apprenticeships, as this course equips students with valuable transferable skills.

Through practical projects and experiments, students develop excellent analytical and communication, team building, and leadership skills.

Topics covered include:

- Biological molecules (proteins, lipids, carbohydrates)
- Cells (Eukaryotic and prokaryotic cell structure)
- Exchange (diffusion, osmosis, active transport)
- Genetics (meiosis, mitosis, DNA structure, protein synthesis, adaptations, evolution)

Entry requirements: minimum of grade 6 in GCSE Maths and grade 6 in GCSE Biology/ Combined Science

CHEMISTRY

Studying A-level Chemistry at UTC South Durham gives students not only the in-depth knowledge they need to continue in further study, but develops vital practical and problem solving skills which will be essential in whatever career path students choose to take.

The subject content is made relevant to real world experiences through experiments, and trips to our industry partners.

Topics covered include:

- Physical chemistry (atomic structure, bonding, kinetics, equilibrium, energetics, thermodynamics, acids and bases)
- Inorganic chemistry (trends in the periodic table, transition metal chemistry, reactions of ions in aqueous solution and properties of period 3 elements)
- Organic chemistry (alkanes, haloalkanes, alkenes and alcohols)
- Analytical techniques (optical isomerism and reactions for a range of organic substances, nuclear magnetic resonance (NMR) and chromatography)

Entry requirements: minimum of grade 6 in GCSE Maths and grade 6 in GCSE Chemistry/ Combined Science

PHYSICS

A-level Physics is a highly valued qualification, particularly for students who are looking for a career in engineering or plan to study maths or a science at degree level.

Students will already be familiar with many of the topics covered at A-level, including forces, waves, radioactivity, electricity and magnetism. Throughout the A-level course, students look at these areas in greater detail and find out how they are interconnected. Students also learn how to apply maths to real-world problems and explore new areas such as particle physics, astrophysics, and medical physics.

Perhaps more importantly, students develop skills that can be transferred to just about any other area of work, from setting up a business to saving the planet. While studying A-level Physics students will develop practical skills, including: making observations, collecting data, analysing experimental results and formulating conclusions.

Entry requirements: minimum of grade 6 in GCSE Maths and grade 6 in GCSE Physics/ Combined Science

**100% A-LEVEL
PASS RATE,
BASED ON 2019
LEAVERS**

APPLIED SCIENCE

The Extended Certificate in Applied Science gives a broad overview of all three science subjects. Practical scientists are responsible for developments in industries which provide both services and products, such as pharmaceuticals, automotive, construction, food production, radiology and countless others.

Content includes:

- Key concepts in science and how they are applied
- Applied experimental techniques to gain knowledge and understanding through practical work
- Science in the modern world to develop analytical, evaluative and critical thinking skills
- The human body to develop knowledge and understanding of human anatomy and physiology
- Investigating science to enable learners to use their knowledge and skills in carrying out a scientific investigation

This BTEC qualification is equivalent to one A-level.

Entry requirements: minimum of grade 4 in GCSE Maths and grade 4 in GCSE English Language, grade 4/5 in Triple Award/Combined Science GCSE or a Level 2 Merit in BTEC First Applied Science

“The Applied Science lessons are of a high quality, and the small class sizes mean there is always good teacher support. The real stand out point in this course has been the three teachers – they’re all amazing and care very much for the success of every student in their class.”

Ryan, Year 12 student

MATHS

Mathematics aims to improve confidence and skills in problem solving, logical and analytical thinking, and calculation. At UTC, the relevance of maths is brought to life through projects, visits to and from employers, and work experience placements in business and industry. It is advised that any student studying engineering, science, or computer science continues with maths at A-level or Level 3.

A-LEVEL MATHS

A-level Mathematics extends the skills covered at GCSE, particularly those in algebra and trigonometry. This course focuses on pure mathematics, with some applications of mechanics and statistics.

Entry requirements: minimum of grade 7 in GCSE Maths

FURTHER MATHS

Further Maths takes a much deeper look at some of the areas covered in A-level Maths, as well as exploring other areas of mathematics such as graph theory, complex numbers and matrices.

Students can opt to study A-level Further Mathematics alongside their A-level Maths course.

Entry requirements: minimum of grade 7 in GCSE Maths

CORE MATHS

Core Maths focuses on the application of maths, including in personal finance, and the estimation and analysis of data.

Core Maths is a Level 3 course (the equivalent of an AS qualification) for those students who are interested in developing their mathematical skills beyond GCSE.

Entry requirements: minimum of grade 4 in GCSE Maths



TECHNOLOGY

COMPUTER SCIENCE

Computer Science at UTC South Durham focuses on preparing our students for the modern digital world and workplace.

A-level Computer Science is about understanding the fundamental mathematical and scientific building blocks of computers, including: programming, algorithms, data representation, computer hardware, and cyber security. Students also learn programming languages, including Python.

Content includes:

- Computer systems, organisation and architecture
- Theory of computation
- Communication and networking
- Databases and big data
- Algorithms and programming

Entry requirements: minimum of grade 6 in GCSE Maths, grade 6 in ICT or computing, and grade 4 in GCSE English Language

£46,280

is the average salary for
Computer Science/IT
professionals

IT

Developing information and communication technology skills is increasingly important in our connected world. The course aims to give students the opportunity to develop their knowledge and skills in IT systems, systems management and social media in business.

Course content includes:

- Information technology systems
- Creating systems to manage information
- Managing and processing data to support business
- Using social media in business
- Data modelling
- Website development
- Systems analysis

This Pearson BTEC Level 3 National Extended Certificate in Information Technology is equivalent to one A-level, and can be studied alongside two other A-level or Level 3 courses.

Entry requirements: minimum of grade 4/5 in GCSE Maths and grade 4/5 in GCSE English Language

DESIGN AND TECHNOLOGY

Every product made by humans has been designed and manufactured. Product designers have a responsibility to design useful products which work effectively, and are efficient and environmentally friendly. Throughout A-level Design and Technology students are able to:

- Engage in both practical and theoretical study to develop design and practical skills
- Develop their understanding of technical design and make principles
- Focus on graphics or 3D design
- Create practical project work
- Build a coursework portfolio

Entry requirements: minimum of grade 4 in GCSE Maths and grade 4 in GCSE English Language



SOCIAL SCIENCES AND HUMANITIES



GEOGRAPHY

Geography A-level is perfect for students who are fascinated by the world in which we live. Students gain a deeper understanding of contemporary issues facing global citizens of the 21st century. Students follow the A-level from AQA which is split into physical geography, human geography, and a geographical investigation. For the geographical investigation, students will undertake a minimum of four days of fieldwork and complete an independent fieldwork investigation on a topic of their choice related to the topics students study throughout the course.

Alongside gaining a deeper understanding of contemporary geographical issues students are taught a range of transferable skills such as communication, fieldwork skills and qualitative and quantitative analysis.

Entry requirements: minimum of grade 6 in GCSE Geography, grade 4 in GCSE English Language, and grade 4 in GCSE Maths



ENGLISH LANGUAGE

A-level English Language is very different to GCSE. Students study a range of texts exploring both written and spoken language to find out how language works through the scientific study of English. Students look into how:

- English language contributes to individual and societal identity
- Language as a continually evolving and changing entity
- Language acquisition
- Researching and analysing language in action

Furthermore, students use their knowledge and understanding to produce some original writing of their own.

Entry requirements: minimum of grade 7 in GCSE English Language and grade 6 in GCSE English Literature



BUSINESS

Business BTEC at UTC South Durham focuses on preparing students for the modern business world. The course is made relevant through case studies and projects, in addition to visits to and from employers and work experience. During this course, students will learn to understand and apply the fundamental principles of business studies including:

- How businesses are structured and how finances work
- The wide range of functions and careers in business
- How to develop a marketing campaign
- Personal finance
- How to promote customer service

This BTEC Level 3 Extended Certificate in Business course is worth the equivalent of one A-level and can be studied alongside two other A-level or Level 3 courses.

Entry requirements: minimum of grade 5/6 in GCSE English Language and grade 4/5 in GCSE Maths



SPORTS

Sports Tech Level is delivered in a way that makes it relevant to real world experiences. Students develop and learn new practical skills, including leadership, teamwork, and organisation. After completing this qualification, students will be able to start working in the sports and fitness sector or progress further onto university.

Topics covered include:

- Body systems and the effects of physical activity
- Sports coaching and activity leadership
- Sport organisation and development
- Nutrition and diet for sports and exercise
- Physical activity for specific groups
- Organisation of a sports event

This Cambridge Tech Level course is worth the equivalent of one A-level and can be studied alongside other A-level or Level 3 courses.

Entry requirements: minimum of a grade 4 in GCSE Maths and grade 4 in GCSE English Language

ENGINEERING TECHNICIAN PROGRAMME

UTC South Durham offers a pre-apprenticeship pathway in the form of the Level 2 Engineering Technician Standard. This National Vocational Qualifications (NVQ) course is delivered in collaboration with Hydrum Engineering. The course can be taken over one or two years, depending upon the student's GCSE results and previous experience of engineering. The course helps students to develop specific skills, knowledge and behaviours which are found in a range of engineering disciplines.

The course enables students to:

- Learn practical skills and gain a relevant industry standard qualification
- Access workplace experience with companies in the form of site visits
- Experience development sessions and careers advice as part of our wider Sixth Form offer
- Re-sit English and/or Maths GCSEs (where needed) taught by specialist GCSE teachers

“Hydrum know the Engineering Technician Programme is industry standard, giving UTC learners an advantage in industry. Hydrum delivers it to our apprentices in-company, and are proud to support the UTC with their delivery in college.”

Neil, Training Manager



IN 2019, OVER HALF
OF UTC'S POST-16
LEAVERS SECURED
APPRENTICESHIPS
(HIGHER OR ADVANCED)
- EIGHT TIMES THE
NATIONAL AVERAGE!

The Engineering Technician programme prepares students for an engineering apprenticeship or to follow on to relevant Level 3 courses in engineering. The programme is full time and students work through units to meet the Level 2 Engineering Technician Standard, a widely recognised apprenticeship standard in the engineering and manufacturing sectors.

Timetabled lessons are taught by specialist staff, all with teaching and industry experience in their relevant field of expertise. Additional self-directed study will be spent writing up the practical activities being worked on, or sitting additional GCSE Maths and English lessons (if required).

Students work on a number of units, including:

- Safe working practices
- Communicating technical information
- Conducting business improvement activities
- Producing components using bench fitting techniques
- Preparing and using lathes, CNC machines, manual TIG or MIG welding equipment
- Producing sheet metal components and assemblies (<3mm)
- Producing engineering drawings
- Computer aided drawing (CAD)
- Principles of CNC machining/fabrication

Entry requirements: minimum of a grade 3 in Maths and grade 3 in English Language GCSE



HOW TO APPLY

Admissions for Year 12 are direct to us. Applications for the following academic year open on 1 September.

You can apply online at utcsouthdurham.org. You will need to create an account on our online system, and verify your email address before completing the application.

After our deadlines of 1 December and 1 March, you will receive an offer in principle and an invitation to a 1:1 meeting with one of our Senior Leadership Team. In this meeting, we will answer any questions you may have and understand your career aspirations so that we can design the right programme for you.

Please read our admissions policy before submitting an application. The policy can be found at utcsouthdurham.org



TRAVELLING TO UTC

Students travel from across County Durham, North Yorkshire, Tees Valley and Tyne and Wear.

Our aim is to make travel as easy as it can be in order to make the UTC accessible for students. Students use a combination of public transport such as Northern Rail, Arriva, Scarlet, Stagecoach, Dales and District, dedicated UTC minibuses and external coach hire organised by the UTC. We have discounted deals with public transport companies for student cards and offer support for those that meet household income criteria.

Please contact us directly and refer to our website for further details or please call on 01325 430 250 for more information.



We hold a number of open events throughout the year, please visit [UTCSOUTHDURHAM.ORG](https://utcsouthdurham.org) for more information

