

**YEAR 10
ENTRY**

**A SCHOOL
WITH A STRONG
TECHNICAL
AND ACADEMIC
FOCUS**

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YEAR 10 ENTRY

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Founding members
of UTC South Durham



WELCOME TO UTC SOUTH DURHAM

A very warm welcome to UTC South Durham, a state-funded, purpose built technical school and Sixth Form for 14-19 year olds.

We exist to help young people get ready for the world of work and find meaningful technical and academic careers. In our first year 100% of our Year 11 leavers had a positive destination in education, employment or training which is impressive.

For most students the UTC is a four year experience as they progress on to our Sixth Form. For our recent Year 13 leavers, everyone who wanted to has gone to university and all of them went to study STEM (science, technology, engineering and maths) degrees. Over half secured paid apprenticeships with local employers (higher or advanced), that is seven times the national average.

We opened in September 2016. At our first Ofsted inspection in January 2019 we achieved 'Good' judgments across all categories – we are delighted about this as it is rare for new schools and shows the strength of core education that underpins the UTC.

There are three clear strands to our student experience:

- **Academic qualifications** – students study a full set of GCSEs, including Maths, English and Science, with a focus on STEM subjects
- **Technical skills** – all students study engineering and develop a range of specialist skills
- **Workplace learning** – everyone undertakes a comprehensive programme of visits and placements in companies as well as industry-led projects in the UTC

This focused approach to education is new to the North East of England and employers and parents say that young people leave the UTC with strong workplace skills and a confidence that sets them up for future careers. In the feedback to Ofsted inspectors, 94% 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.

Please come and visit us to meet our students and staff and to see our impressive facilities for yourself.

Tom Dower, Principal



WHY CHOOSE THE UTC?

UTC South Durham is ideal for young people if they are:

- Excited by the high tech world of manufacturing, engineering and science
- Seeking substantial experience of real work to build their skills and work out what they want to do
- Wanting opportunities to develop practical learning linked to the working world and employment
- Wanting to work with students, teachers and professionals who share their enthusiasm.
- Wanting to take the first step into their future career
- Wanting to be treated as a young adult
- Would like to focus on technical subjects
- Wanting a great destination. Nobody who left the UTC last summer was classed as NEET (not in education, employment or training) across Year 13; unrivalled by other education providers
- Our students undertake the The Baker Award for Technical Education. Available only to UTCs, this is an acknowledgement of academic achievement and industrial experience at bronze and silver levels

“My son is making excellent academic progress but most of all is developing work place skills and his growth in confidence is remarkable.”

Parent, Year 10



TAKE THE FIRST STEP INTO YOUR FUTURE CAREER

PROJECTS AND PLACEMENTS

A wide range of businesses 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 up to multinational corporations. These experiences will support students in making career decisions which are right for them.

YEAR 10 CORE SUBJECTS

Students will study nine or ten GCSE subjects. All students will study core subjects of English, Maths, Science and Engineering with students then being able to select two options.

ENGLISH

English at the UTC aims to develop students' skills of retrieval, interpretation, analysis, evaluation, comparison, the crafting of their language and their technical accuracy – all made relevant and transferable to the world of work.

In English Language, students have the opportunity to recognise and empathise with the viewpoints and perspectives of others, as well as being challenged to think and work creatively.

In English Literature, they dip into politics and consider socialism versus capitalism through a variety of texts, poetry and debate the attributes of good and bad leadership whilst reading a variety of 19th and 20th century texts.

MATHS

Numeracy skills and mathematical methods are the bedrock of engineering and manufacturing.

Students must be fluent and confident in their maths skills as they progress through the UTC and into future courses or employment. The relevance of maths is brought to life through real engineering examples, projects and visits to employers.

We offer extra support for students who struggle with aspects of the maths curriculum.

MATHS BROUGHT TO LIFE THROUGH REAL ENGINEERING EXAMPLES

DOUBLE ENGINEERING

Our specialism of engineering and advanced manufacturing are reflected in the wide range of careers available across the region. All students study engineering through OCR Cambridge Nationals course.

Students will learn core skills covering health and safety, interpreting engineering information and practical engineering operations.

These courses have been chosen by our employer partners to reflect the needs of their future workforce. All students study Manufacturing and have a choice between Design Engineering and Systems and Control. The formal courses will be delivered through practical application, building students skills from using entry level equipment to industry standard machinery.



£49,920

Average salary for Electronics Engineers. Over the next five years there is 3.9% expected wage growth.



**GETTING READY
FOR THE WORLD
OF WORK**

YEAR 10 CORE SUBJECTS

PHYSICS

The principles of science, particularly physics, underpin engineering and advanced manufacturing.

Our students need to know how a robot works not just what robots can do and for that they'll need physics. Our links with businesses at the cutting edge of the application of sciences will show students why physics is so important.

CHEMISTRY

Many high tech companies use complex chemistry to manufacture innovative materials and products. Employers need highly skilled chemical and process engineers.

Manufacturing operations can be fine tuned and made more efficient and environmentally efficient products can be developed through a detailed understanding of chemistry.

BIOLOGY

Understanding the natural world is important for scientific and technical innovation.

We can learn a lot from how nature solves problems. The study of plant and animal biology leads directly to a wide range of careers in medicine, scientific research and there are several leading technical development and pharmaceutical companies in the region.

£43,680

Average salary for Biological Scientists and Biochemists. Over the next five years there is 3.9% expected wage growth.

YEAR 10 SUBJECT OPTIONS

Pick two option subjects

GEOGRAPHY

Employees of the future will need to have a strong understanding of populations and demographics, markets and regions, economic development and globalisation in order to help their businesses thrive. Geography is taught through theoretical sessions and woven into projects. Students also learn about energy resources, sustainability and climate change.

DESIGN AND TECHNOLOGY

Every product made by humans has been designed and manufactured. Product designers have a responsibility to design useful products which work well and are efficient and environmentally friendly. Understanding the design process and being able to communicate ideas are important skills for engineers and manufacturers and this course encourages students to be creative and innovative.

BUSINESS STUDIES

Business Studies is an exciting qualification where students study different themes and learn about the nature of the business world and entrepreneurship.

Students study the following topics:

- Enterprise and entrepreneurship
- Spotting a business opportunity
- Putting a business idea into practice
- Making the business effective
- Understanding external influences on business
- Setting up a business

COMPUTER SCIENCE

Computers dominate the world of work, as well as having significant influence over our home lives. Engineers and manufacturers use computers constantly for design and manufacture. Computer science is about understanding the fundamental mathematical and scientific building blocks of computers as well as the structural architecture. Students learn to programme in a number of languages.

“Students are now able to describe which direction they believe they want to go in terms of a potential future career.”

Laura, teacher

**YOUR EXPERIENCE
DESIGNED WITH
EMPLOYERS**



CAREERS AND DESTINATIONS

UTC South Durham provides a planned careers programme that is delivered across all year groups every academic year. This is differentiated to suit the needs of each individual student and embedded into curriculum learning. Students leave the UTC with the skills and knowledge required to support their entry to further education, training or employment.

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

- Offering access to impartial careers advice and guidance
- Giving access to business and industry partners
- Develop employability skills and confidence
- Raise student's career aspirations

For more information about our careers programme please visit utcsouthdurham.org.

**LET'S
FUTUREPROOF
YOUR CAREER**

100%
of Year 11 students went onto positive destinations (based on 2018 Year 11 leavers).

100%
of students who went to university took a science, technology, engineering or mathematics focused degree.

HOW TO APPLY

PARENT AND STUDENT EVENTS

We'll be holding a number of parent and student events where you can come and find out more about us.

At these events, our Principal, staff, founding members and employer partners will be available to answer any questions you may have.

Please visit our website to see information about our events.

utcsouthdurham.org
01325 430 250



UTC South Durham
Long Tens Way
Aycliffe Business Park
County Durham
DL5 6AP

YEAR 10 APPLICATIONS

Admissions for Year 10 are direct to us. Applications for the following academic year opens on 1 September. Please read our admissions policy before submitting an application. The admissions policy can be found by visiting utcsouthdurham.org.

The easiest and most efficient way to apply is online via utcsouthdurham.org or by filling out an application form. You can email or post your form to us. It is important that you understand what the UTC can offer before accepting a place with us.

We will meet you individually to answer any questions you may have and understand your career aspirations so that we can design the right programme for you.

YEAR 12 APPLICATIONS

For joining in Year 12, there are academic entry requirements for each course selected. Applications are made directly to the UTC and applications for the following academic year opens on 1 September.

The easiest and most efficient way to apply is online via utcsouthdurham.org or by filling out an application form. You can email or post your form to us. It is important that you understand what the UTC can offer before accepting a place with us.

We will meet you individually to answer any questions you may have and understand your career aspirations so that we can design the right programme for you.

HOW TO APPLY

TRAVELLING TO UTC

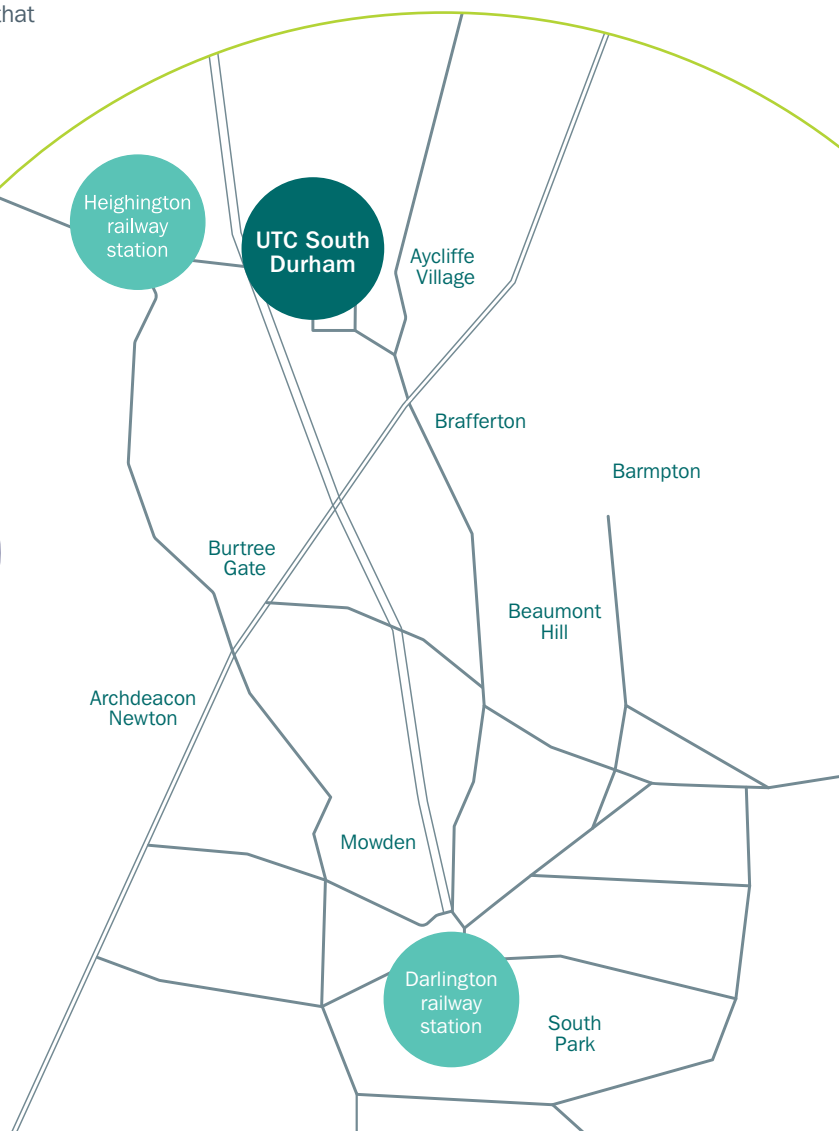
Our aim is to make travel as easy as it can be in order to make the UTC accessible for students.

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



INDUSTRY LINKS INTO THE REGION AND BEYOND



PERFORMING ENGINEERING OPERATIONS

Level 2 – 1 Year Course

Performing Engineering Operations (PEO) is proudly delivered in collaboration with Hydrum Engineering. PEO is a level 2 pathway that can be accessed by all students, including those who are re-sitting English and Maths. The qualification is a National Vocational Qualification (NVQ) that involves the skills and knowledge to work in an engineering environment. The NVQs are based on national occupational standards.

Both mandatory and additional units are assessed with a set criteria. There is a holistic approach to assessment which involves an electronic portfolio of evidence, witness testimonies and verbal questioning to assess knowledge and understanding of key principles.

“Hydrum know Performing Engineering Operations (PEO) is industry standard, giving UTC learners an advantage in industry. Hydrum deliver it to our apprentices in-company and are proud to support the UTC with their delivery in college.”

Neil, Training Manager



A LEVELS

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.

PRODUCT DESIGN

Every product made by humans has been designed and manufactured. Product designers have a responsibility to design useful products which work well and are efficient and environmentally friendly.

Understanding the design process and being able to communicate ideas are important skills for engineers and manufacturers. Students will develop the ability to draw on and apply a range of skills and knowledge from other subject areas to inform their decisions in design and the application or development of technology.

This course requires students to:

- Engage in practical and theoretical study to develop both design and technical skills
- Focus on graphics or 3D design
- Create practical project work
- To build a coursework portfolio

BTEC NATIONAL

IT

Developing information and communication technology skills is increasingly important in our connected world. This course is the level 3 Extended Certificate in ICT and includes the following elements: a common core of IT knowledge and study areas such as the relationship between hardware and software that form an IT system, managing and processing data to support business and using IT to communicate and share information, systems analysis, interface design, software development and problem management.

Content includes:

- Information technology systems
- Creating systems to manage information
- Using social media in business
- Data modelling
- Website development

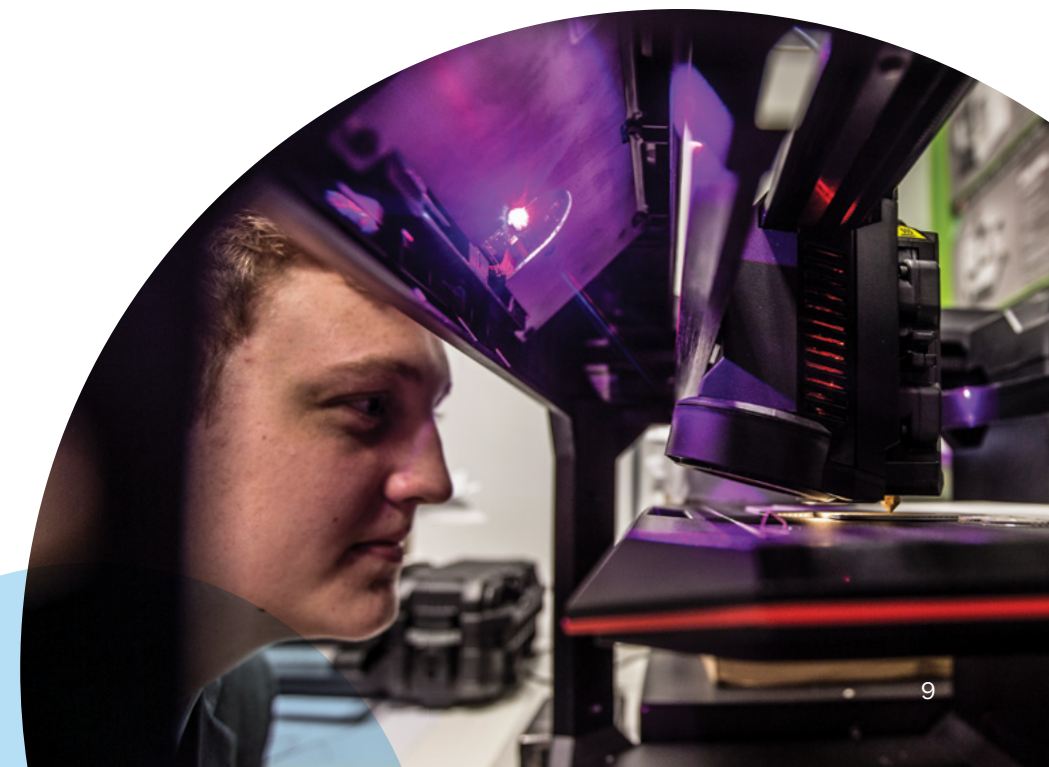
BUSINESS

Company leaders recognise that all their employees need to understand how the business works and the impact that their work has on efficiency and profitability. Students will learn about how businesses are structured, how the finances work and the wide range of functions and careers in companies. Case studies and projects will bring students' learning about business to life.

Content includes:

- Exploring business including the purposes of different businesses and their structure
- Developing a marketing campaign and understanding how a marketing campaign is created
- Personal and business finance
- Work Experience in business and reflecting on practical workplace skills

**GETTING READY
FOR THE WORLD
OF WORK**



A LEVELS

BIOLOGY

Biology is a key subject for lots of STEM (science, technology, engineering and maths) careers, tackling important 21st century challenges. Studying A level Biology will help students to develop skills in research, problem solving, organisation and analytical skills. Students can build up their knowledge and will then apply it to many real life situations.

Examples include:

- Developing and maintaining the equipment used for diagnosing illness and treating patients
- Stopping the spread of disease
- Assessing the true impacts of pollution
- Robotics engineering looking at biomechanics

MATHS

Maths forms the bedrock of all sectors of engineering and manufacturing. Students must be fluent and confident in their maths skills as they progress through the UTC and into future courses or employment. The relevance of maths is brought to life through projects, visits from employers to the UTC and placements in businesses.

Students can choose to study one of three levels:

- **A level Maths** – for those skilled mathematicians who wish to study the full academic qualification with a view to progressing to university
- **Core Maths** – level 3 course, for those interested in developing their mathematical skills beyond GCSE but not to the rigour of the full A level maths course. It is advised that any student studying engineering, science or computer science continue to study maths also at level 3
- **Further Maths** – Further Maths takes the ideas and concepts from A level Maths and extends them, delving into concepts such as complex numbers, matrices and graph theory which are highly relevant to the worlds of engineering and coding. The course is suitable for those who achieved a level 7 or above at GCSE maths and can be taken as an extra option on top of the normal timetable allocation

“In my Sixth Form, I’m developing the skills I need to change the world.”

Lee, Year 12 student

COMPUTER SCIENCE

Computers dominate the world of work, as well as having significant influence over our home lives. Engineers and manufacturers use computers constantly for design and manufacture. Computer Science is about understanding the fundamental mathematical and scientific building blocks of computers as well as the structural architecture. Students learn to programme in a number of languages.

Content includes:

- Computer systems
- Algorithms and programming
- A programming project

Careers within coding and the digital sector is one of the fastest growing sectors. Young engineers and manufacturers use computers for simulations and designs allowing skills to be continually developed.

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

£46,280

Average salary for Computer Science/IT professionals. Over the next five years there is 3.9% expected growth.



ENGINEERING TECH LEVELS

FOUNDATION ENGINEERING

Students can choose to study engineering through the single AQA Foundation Technical level. This is a focused qualification, recognised by industry. Students learn core skills covering:

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

Students will complete the following units:

- Materials technology and science
- Mechanical systems
- Engineering design
- Production and manufacturing

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

MECHATRONICS

Mechatronics is a multidisciplinary subject that includes:

- Mechanical engineering
- Electronics
- Computer engineering
- Telecommunications engineering
- Systems and control engineering

Initially, mechatronics included the combination of mechanics and electronics, as technical systems have become more complex the definition has broadened to include other technical areas too.

The course consists of eight units delivered and assessed over a two-year period with coursework and exam elements. We are currently one of a small number of educational settings in the North East that delivers this course.

This course needs to be taken with Foundation Tech level Engineering.

DESIGN

Content includes:

- The process of engineering design
- The scientific principles used by engineers to identify suitable materials
- The use of maths as an aid to model and solve problems across a range of practical engineering contexts
- Mechanical engineering systems and components, and their applications to the design of engineering products and systems
- The relevance and role that manufacturing processes and systems have in the production of multiple components
- How to manage an industrial sourced design project
- The use of 3D parametric modelling software in the design process
- The systematic approaches to engineering design

This course needs to be taken with Foundation Tech level Engineering.

£45,760

Average salary for engineering professionals. Over the next five years there is 3.9% expected wage growth.

A LEVELS

PHYSICS

The principles of science, particularly physics, underpin engineering and advanced manufacturing. Our students need to know how a robot works and for that they'll need physics. Our links with businesses at the cutting edge of the application of sciences will show students why physics is so important. A level physics gives students the opportunity to study a core of key concepts in greater detail.

While studying A level Physics students will develop practical skills that include:

- Making observations
- Collecting data
- Analysing experimental results and formulating conclusions

You will study:

- Mechanics and further mechanics
- Electricity and capacitors
- Materials, waves and simple harmonic motion
- Magnetic fields
- Particle physics
- Astrophysics chemistry

CHEMISTRY

Many high tech companies use complex chemistry to manufacture innovative materials and products. Employers need highly skilled chemical and process engineers and operatives. Manufacturing operations can be fine-tuned and made more efficient and environmentally efficient products can be developed through a detailed understanding of chemistry.

Practical projects and experiments will enhance the core curriculum.

Content includes:

- 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. As well as analytical techniques, optical isomerism and reactions for a range of organic substances, nuclear magnetic resonance (NMR) and chromatography)

£40,040

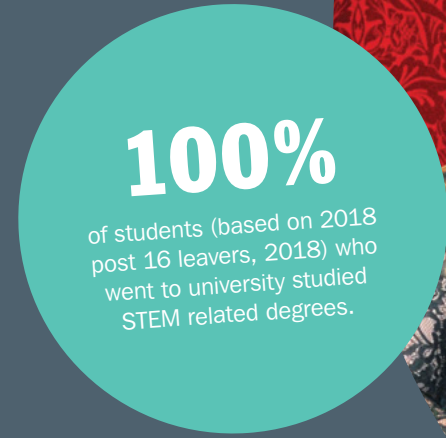
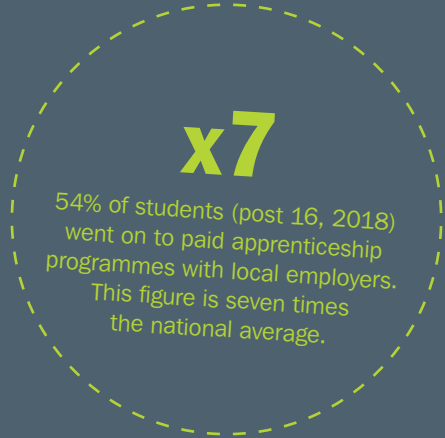
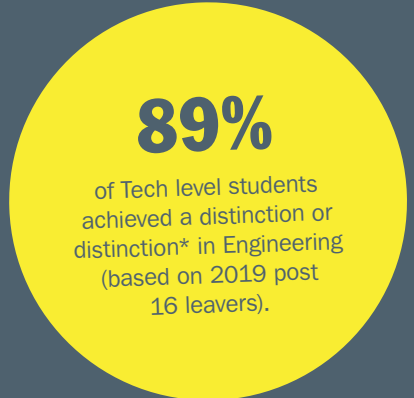
Average salary for Computer Chemical Scientists. Over the next five years there is 3.9% expected wage growth.

WHY CHOOSE THE UTC?

UTC South Durham works with a wide variety of industry and business partners to ensure that the student experience remains relevant to the world of work.

UTC South Durham is ideal for young people if they are:

- Excited by the high tech world of manufacturing, engineering and science
- Seeking substantial experience of real work to build their skills and work out what they want to do
- Wanting opportunities to develop practical learning linked to the working world and employment
- Wanting to work with students, teachers and professionals who share their enthusiasm
- Wanting to take the first step into their future career
- Wanting to be treated as a young adult
- Would like to focus on technical subjects
- Wanting a great destination. Nobody who left the UTC last summer was classed as NEET (not in education, employment or training) across Year 13; unrivalled by other education providers
- Our students undertake the The Baker Award for Technical Education. Available only to UTCs, this is an acknowledgement of academic achievement and industrial experience at silver and gold levels



CAREERS AND DESTINATIONS

UTC South Durham is committed to providing a planned careers programme that is delivered across all year groups every academic year.

This is differentiated to suit the needs of each individual student and embedded into curriculum learning.

For more information about our careers programme please visit utcsouthdurham.org.

Students leave the UTC with the skills and knowledge required to support their entry to further education, training or employment.

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**A FOCUSED
APPROACH TO
EDUCATION**

Founding members
of UTC South Durham



WELCOME TO UTC SOUTH DURHAM

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We exist to help young people get ready for the world of work and find meaningful technical and academic careers. Our student destinations are impressive:

- Everyone who wanted to has gone to university and all of them went to study STEM (science, technology, engineering and maths) degrees
- Over half secured paid apprenticeships with local employers (higher or advanced), that is seven times the national average
- Nobody was classed as NEET (not in education, employment or training)

We opened in September 2016. At our first Ofsted inspection in January 2019 we achieved 'Good' judgments across all categories, including our Post-16 provision – we are delighted about this as it is rare for new educational establishments and shows the strength of core education that underpins the UTC.

This years results have been fantastic, with a 100% pass rate at A level and 72% of students achieving a distinction* grade in Tech level Engineering. This means our average Tech levels at Distinction put us in the top of the Post-16 providers in the North East.

Students study one of two pathways; a two year level 3 route of A levels and equivalent qualifications or a one year pre-apprenticeship route of practical engineering skills. We meet with families individually before enrolment to discuss career aspirations and design a programme which meets each student's needs. There are three clear strands to our student experience:

- Academic and relevant qualifications – with a focus on STEM subjects
- Technical skills – to develop a range of specialist knowledge and skills
- Workplace learning – everyone undertakes a comprehensive programme of visits and placements in companies as well as industry-led projects in the UTC

This focused approach to education is new to the North East of England and employers and parents say that young people leave the UTC with strong workplace skills and a confidence that sets them up for future careers. In the feedback to Ofsted inspectors, 94% 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.

Please come and visit us to meet our students and staff and to see our impressive facilities for yourself.

Tom Dower, Principal

94%

of parents said they would recommend the UTC.



**YEAR 12
ENTRY**

**SIXTH FORM
WITH A STRONG
TECHNICAL
AND ACADEMIC
FOCUS**

