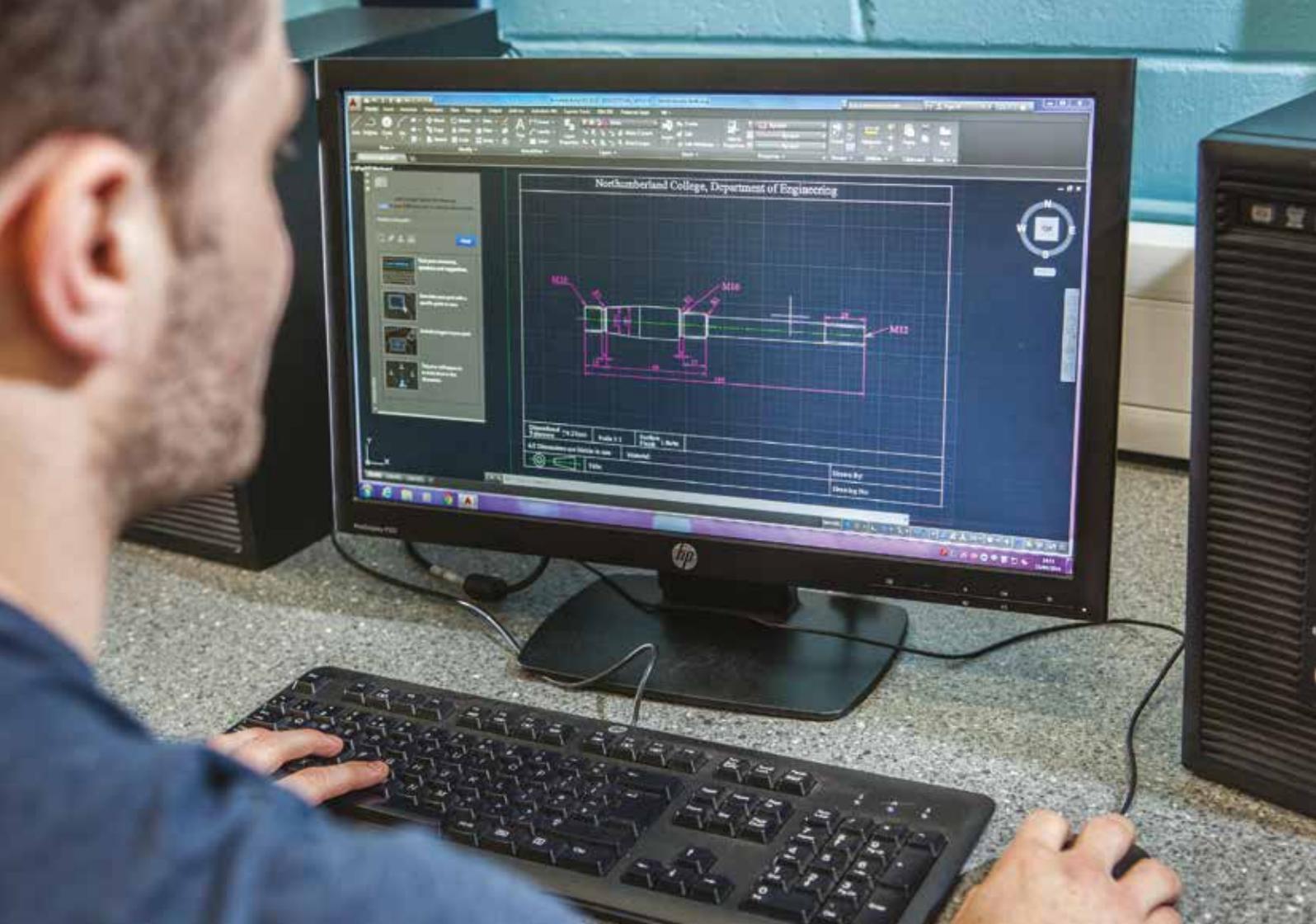




Northumberland Career College **Engineering**

www.northumberland.ac.uk/careercollege





Northumberland College, Department of Engineering



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Welcome to Northumberland Career College

A fantastic new opportunity for 14-19 year olds to study Engineering

Career Colleges are a new concept in education with employers taking a leading role in designing and shaping the curriculum.

Thanks to Government changes you now have the right to choose an alternative option to school at age 14 (Year 10) and Northumberland Career College could be the right choice for you.

Career College is designed by employers, for employment

At a Career College, hands-on practical training is combined with academic teaching.

You will have access to industry-led education and training, with a clear line of sight to work. We are working in partnership with local companies to ensure training meets their needs and students gain valuable experience with employers in their chosen industry.

You will learn through practical experiences, projects set by employers and quality work experience

opportunities as well as developing enterprise and communication skills, to prepare you for work and life.

The carefully designed programmes incorporate core GCSEs in English, maths and science and students will experience and learn state-of-the-art digital technologies.

Career College gives highly practical vocational and technical education designed to equip young people with the skills and hands-on experience to take the next step to a successful career.

The Career College will offer:

- Exciting, innovative and active learning, relating directly to real work
- High quality teaching from qualified staff in core academic areas
- Prestigious coaching and industry expertise within each vocational specialism
- Industry-standard facilities and resources to aid your learning



- Personalised learning to suit your individual skills and interests
- Excellent links with local employers to benefit from talks, visits, work experience and employer-led projects
- A clear line of sight to the world of work and your future career
- Help to develop essential employability skills
- High quality careers education and advice
- The expectation that on completion of your course, you will progress into either level 3 full time course or an Apprenticeship
- Opportunities to meet and connect with other young people studying at Career Colleges around the country
- Expert support, advice and mentoring to expand your horizons and encourage aspiration
- A selection process which ensures all students have enthusiasm and aptitude for this programme

What do you need to do to be a part of this new opportunity?

- Have a passion for Engineering
- Enjoy solving scientific and practical problems
- Attend and complete a selection process and an interview

What is included in your Career College Experience?

- Access to employer-led projects and work experience
- Explore the use of the latest digital IT, Computer Aided Design (CAD) software, CAM and CNC technology used in the workplace
- Access to mechanical and electrical workshops equipped with latest engineering technology
- Transport assistance to college
- Study five days a week in a maximum group size of 15
- GCSE English, maths, science plus digital technologies, business and enterprise



NEW £2.5MILLION STEM CENTRE

OPENING 2017

Train in our brand-new state-of-the-art STEM Centre which will boast the latest in engineering equipment to train future engineers in areas including Hydraulics, Pneumatics, programmable logic controllers (PLC) and Robotics.



Brand-new STEM Centre opening 2017



Working with employers

“Northumberland Career College’s mission is to give young people the skills and route maps into fulfilling careers...

... which is vital for the future of the North East and the wider UK economy. Its emphasis on providing students with opportunities to gain work experience is crucial to make them ‘work ready’ and helps solve that ‘catch 22’ situation where young people cannot get a job until they get experience but they cannot get experience until they get a job.”

John Welsh
Plant Assets Manager, Banks Mining



BERNICA



ThermoFisher
SCIENTIFIC

BANKS Mining
development with care

Engineering

The Engineering and Manufacturing sector in the North East is facing a skills shortage over the next five years and it is estimated that up to 8,500 people will retire from the sector but that 23,500 jobs in Engineering and Manufacturing alone will be created over this period.

Increased production at manufacturing companies, as well as their associated supply chains, will all need skilled workers across a diverse range of roles and Northumberland Career College will therefore provide a unique vocational training solution to bridge the skills gap as well as contributing towards the growing success of organisations in the region.

Northumberland College's new Advanced Manufacturing and Engineering facilities have been developed to respond to the needs of the industry. Our brand-new STEM Centre opening 2017 will have the latest equipment to train future engineers.

As a result students will benefit from:

- A range of career opportunities within the wider Engineering and Advanced Manufacturing industry
- A curriculum designed and developed with direct input and guidance from employers
- Hands-on experience in the delivery of significant work-related projects
- Increased learning and job outcome potential resulting from the direct links with higher education and industry
- Support to achieve progression to employment, apprenticeships or higher education
- New industrial careers and the increased opportunities which are expected to materialise within the region
- An extensive understanding of careers and progression opportunities within the industry.

Progression opportunities

Post 16 level 3 progression options

Upon completion of year 11, you will have the opportunity to join one of the following college full-time courses or apprenticeship study:

- Level 3 Extended Certificate in Engineering
- Level 3 Diploma in Renewable Energy
- Level 3 Advanced Apprenticeship in Engineering (for those learners who secure an apprenticeship with an employer)

Higher Education level 4/5 progression options

Upon completion of your level 3 full-time course or apprenticeship, you will have the opportunity to join one of the following college part-time courses or apprenticeship study:

- Level 4 Higher Apprenticeship in Engineering
- Level 4/5 HNC in Advanced Manufacturing Technology
- Level 4/5 HNC Electrical/ Electronic Engineering

Higher Education Level 6 progression options

Upon completion of your level 4/5 qualification, you can progress to study level 6 at university:

- Hons Degree in Engineering

The UK's Engineering sector employs 5.5 million people across a variety of roles.

Source: www.ctp.org.uk

10 Reasons to Love Engineering

1 Be creative

Engineering is a great outlet for the imagination - the perfect field for independent thinkers.

2 Work with great people

Engineering takes teamwork, and you'll work with all kinds of people inside and outside the field. Whether they're designers or architects, doctors or entrepreneurs, you'll be surrounded by smart, inspiring people.

3 Solve problems, design things that matter

Come up with solutions no one else has thought of. Make your mark on the world.

4 Never be bored

Creative problem solving will take you into uncharted territory, and the ideas of your colleagues will expose you to different ways of thinking. Be prepared to be fascinated and to have your talents stretched in ways you never expected.

5 Earn a big salary

Engineers not only earn lots of respect, but they're highly paid. Even the starting salary for an entry-level job is impressive!

6 Enjoy job flexibility

An engineering degree offers you lots of freedom in finding your dream job. It can be a launching pad for jobs in business, design, medicine, law, and government. To employers or graduate schools, an engineering degree reflects a well-educated individual who has been taught ways of analyzing and solving problems that can lead to success in all kinds of fields.

7 Travel

Field work is a big part of engineering. You may end up designing a skyscraper in London or developing safe drinking-water systems in Asia. Or you may stay closer to home, working with a nearby high-tech company or a hospital.

8 Make a difference

Everywhere you look you'll see examples of engineering having a positive effect on everyday life. Cars are safer, sound systems deliver better acoustics, medical tests are more accurate, and computers and cell phones are a lot more fun! You'll be giving back to your community.

9 Change the world

Imagine what life would be like without pollution controls to preserve the environment, lifesaving medical equipment, or low-cost building materials for fighting global poverty. All this takes engineering. In very real and concrete ways, engineers save lives, prevent disease, reduce poverty, and protect our planet.

10 Love your work, live your life!

Engineering is an exciting profession with with so many different routes to take. Engineers are always in demand so you can enjoy your work and career but still have time to do all the other things in life you love.



Who is the qualification for?

This qualification is designed to give students the opportunity to gain a broad understanding and knowledge of the engineering sector and, when taken as part of a balanced curriculum, provides a clear progression route to level 3 academic or vocational qualifications or an apprenticeship for those who want to take study of this subject further.

What will I study?

Year 10 and 11

- In year 10 you will complete the **BTEC First Award in Engineering Level 1**
- In year 11 you will complete the **BTEC First Award in Engineering Level 2**
- Core GCSE subjects in Maths, English and Science and training in the latest Digital Technologies
- Business enterprise skills
- Rights and responsibilities
- Enrichment

This qualification consists of two mandatory units and a choice of optional specialist units that provide underpinning knowledge and skills that are valued in the engineering sector. One of the mandatory units focuses on essential knowledge, and the other focuses on applying essential vocational skills.

Mandatory units

The Engineered World – In this unit students will investigate the processes used to manufacture modern products within different engineering sectors. Students will also study some of the new developments in materials and engineering technology.

Investigating an Engineering Product – In this unit students will investigate a manufactured product to learn what considerations a designer would keep in mind when writing a technical specification. Students will also investigate the materials and commercial production processes used to manufacture the product.

Optional units

A choice of optional units allows students to explore the engineering sector more broadly:

- Health and Safety in Engineering
- Engineering Maintenance
- Engineering Materials
- Computer-aided Engineering
- Machining Techniques
- Electronic Circuit Design and Construction

What skills will I develop?

The subject-specific knowledge and skills developed in studying this qualification will aid progression to further study of engineering at Level 3 and give some initial preparation for entering the workplace.

This qualification also provides further opportunity to enhance and reinforce transferable skills in English (through extended writing) and mathematics, together with elements of GCSE Physics in relevant, work-related contexts. Communication skills are developed through presentations and in discussions where students have the opportunity to express their opinions.

What will I gain from this qualification?

The engineering sector offers huge potential for students interested in the subject. The UK is currently regarded as a world leader in sectors including renewable energy, space, low carbon, aerospace, creative industries, utilities, automotive and bioscience.

Engineers are fundamentally problem solvers. Their work influences our daily lives from making a telephone call, riding a mountain bike, flying in a plane, walking across a bridge and even wearing perfume or aftershave. They solve scientific and practical problems which affect all aspects of our lives underpinning economic activity and quality of life.

The Level 1/Level 2 First Award in Engineering provides an overview of the engineering sector. This will particularly appeal to those students who want an introduction to all aspects of this subject alongside a broad selection of other subjects.

It provides underpinning knowledge, understanding and practical skills that reflect some of the future needs of employers and higher and further education professionals. It presents knowledge, skills and understanding in a meaningful work-related context allowing students to understand theory and application and giving them the skills they need for the workplace.



Career Opportunities

Electrical Engineer

(Starting salary £20,000-£25,000 dependant on experience)

As an electrical engineer, you could develop components for some of the most fun things in our lives (MP3 players, digital cameras, or roller coasters) as well as the most essential (medical tests or communications systems). This largest field of engineering encompasses the macro (huge power grids that light up cities, for example) as well as the micro (including a device smaller than a millimetre that tells a car's airbags when to inflate). As an electrical engineer, you might work on robotics, computer networks, wireless communications, or medical imaging—areas that are at the very forefront of technological innovation.

Environmental Engineering

(Starting salary £20,000-£28,000 dependant on experience)

Most of us care deeply about stopping pollution and protecting our natural resources. Imagine yourself having more than just a passion for saving our environment, but also possessing the actual know-how to do something about these alarming problems! As an environmental engineer, you'll make a real difference in the survival of our planet by finding ways of cleaning up our oceans, rivers, and drinking water, developing air pollution equipment, designing more effective recycling systems, or discovering safe ways to dispose of toxic waste.

Manufacturing engineer

(Salaries from £22,000-£28,000)

As a manufacturing engineer, you and your team will use technical expertise and skill to plan, design, set up, modify, optimize and then monitor the manufacturing process of such things as medicine, food, and oil. From raw materials to the finished product, manufacturing engineers work to improve the production process, using the most cost-effective methods while reducing the impact of production on the environment. Manufacturing engineers are designers, who combine their analytical and creative problem-solving skills to work across many industries.

Mechanical Engineer

(Starting salary £20,000-£28,000 dependant on experience)

As a mechanical engineer, you might develop a bike lock or an aircraft carrier, a child's toy or a hybrid car engine, a wheelchair or a sailboat—in other words, just about anything you can think of that involves a mechanical process, whether it's a cool, cutting-edge product or a life-saving medical device. Mechanical engineers are often referred to as the general practitioners of the engineering profession, since they work in nearly every area of technology, from aerospace and automotive to computers and biotechnology.



The average salary for an engineer in the UK is currently £45,367 and is £28,771 for a junior Engineer

Source: www.ctp.org.uk - The Engineer Salary Survey 2016



To find out more about Career College and to apply:

T. **01670 841200 / 841299**

E. **careercollege@northland.ac.uk**

W. **www.northumberland.ac.uk/careercollege**

Or come along to an open event
- see our website for details



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