The University Of Sheffield. /AMRC Training Centre

Advanced, Higher and Degree

Engineering and Manufacturing Apprenticeships

Prospectus **2021/2022**

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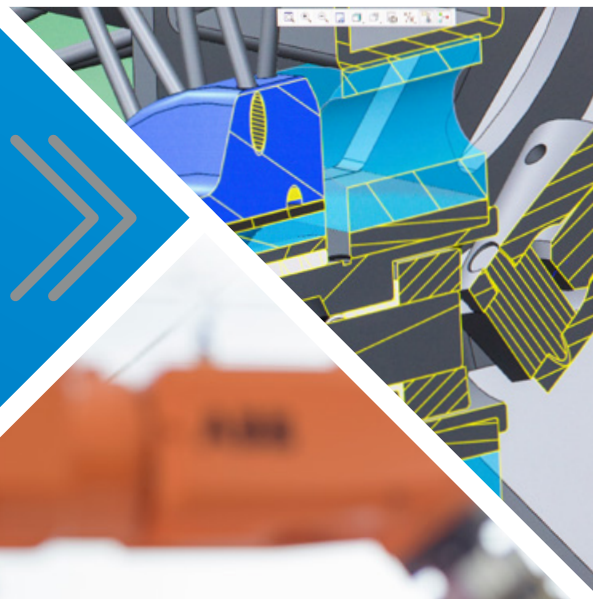

Ofsted Good Provider

The University Of Sheffield. /AMRC Training Centre

OPEN EVENTS

Come along and find out if an apprenticeship is right for you.

Our open events are a fantastic opportunity to talk to our industry-trained staff, meet current apprentices and tour our state-of-the-art facilities.

Find the latest dates and register online at **amrctraining.co.uk/whats-on**

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The University Of Sheffield. /AMRC Training Centre

Welcome to the AMRC Training Centre,

where ambition and aspiration is nurtured and developed to create the talented, advanced engineers of tomorrow.

Since opening our doors in 2014, more than 330 employers from across the Sheffield City Region and beyond have asked us to train more than 1,300 apprentices - equipping them with the skills needed to be part of a dynamic workforce that can help grow business.

We work hand-in-hand with industry to develop a curriculum that is challenging but rewarding and whether you're just starting out, upskilling or re-skilling, you will be supported all the way by a team of specialists with a wealth of industry experience.

We offer several routes into engineering apprenticeships with clear pathways for progression. You can start your journey with us as an advanced apprentice and work right through to degree and postgraduate level, earning as you learn and gaining real work experience but without the worry of tuition fees.

We work with fantastic employers, from small businesses to large international organisations who span a range of diverse sectors – from polymers and plastics to aerospace and automotive - allowing apprentices to make rapid progression within industry.

We are proud to be part of the University of Sheffield, an elite Russell Group university, and the Advanced Manufacturing Research Centre family, which has an international reputation as a world leader in advanced manufacturing, research and development.

With a relentless focus on quality education, our apprentices and their success are at the heart of everything we do.

Read on to hear about the experiences of those who have chosen the AMRC Training Centre as their pathway to a successful career in engineering and find out how we can help you become part of the next generation of talent critical to the future of manufacturing.

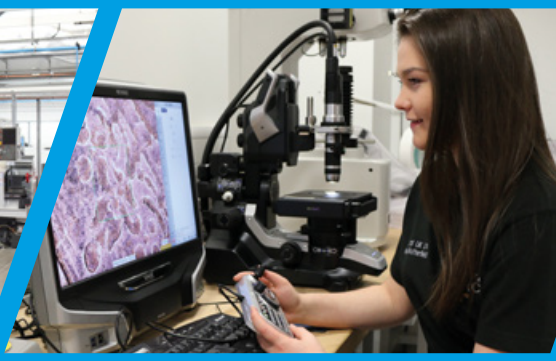
Nikki Jones,
Director, AMRC Training Centre.

About Us

As part of the University of Sheffield Advanced Manufacturing Research Centre, our apprentices are perfectly placed to draw on the experience of an elite Russell Group university and the resources of a world-leading research and innovation organisation, whose 120-plus partners include Siemens, Technicut, Boeing, Rolls-Royce, Toyota Motorsport GMBH, McLaren and Airbus.

In addition to our apprenticeship programmes, we also provide Continuous Professional Development (CPD) which is an essential requirement for any organisation. The ability for employers to upskill, reskill or multiskill employees is more important now than ever before.

Our industry-focused courses allow employers to respond to needs and changes, ensuring skills levels are maintained within workforces; and whether that is electrical and robotics, machining, or metals and materials - we've got it covered.



To ensure our apprentices gain the right experience and the right skills, our courses are shaped and designed by an Industrial Board drawn from some of the most progressive and ambitious companies in the Sheffield City Region and beyond.

With the support of industry, the University of Sheffield and the AMRC, we have developed a flexible portfolio of high-quality apprenticeships and degree apprenticeships that enable our students to earn as they learn, gaining nationally recognised qualifications to graduate level without the debt associated with conventional higher education.

This provides our apprentices with:

- **Secure employment – all our apprentices are in full-time employment**
- **A nationally recognised qualification, whilst earning a salary**
- **A powerful blend of technical knowledge combined with real-world industry experience.**

Our facilities

The AMRC Training Centre is a real-world manufacturing environment. Our apprentices gain hands-on experience of equipment that is used in industry every day, from advanced five-axis machine tools through to virtual reality welding machines and robotics.

Those who go on to degree level have access to the University of Sheffield's engineering facilities including the Diamond, a state-of-the-art facility with 19 specialist engineering laboratories that offer practical learning experiences for our students, and the Information Commons which is open 24 hours a day and combines library facilities with study spaces and IT resources.

Our team

What makes the AMRC Training Centre different is not just the facilities: it is the dedicated, dynamic team of trainers, industrialists, teachers and researchers who are committed to providing the best quality apprenticeships. The team has extensive experience of enabling apprentices to develop the specialist skills needed to respond to the requirements of companies in the advanced manufacturing sector.

In addition to our trainers, our learner support team is on hand to make the most of your time at the training centre. Our team will help you with just about anything, from learning support to issues of a personal nature. Our aim is to make sure that you can reach your full potential.

Engineering in the real world!

Engineering is everywhere and is behind everything, from the smartphone that you hold in your hand, to the structure of the shopping centre where you bought it. As an engineer you will use your skills to plan, design, set up, modify and optimise manufacturing processes. You'll help make things and make things better.

At the AMRC Training Centre, we work with a diverse group of manufacturing companies that operate in a range of different sectors including: aerospace, food and drink, infrastructure, medical, automotive and transport.

Name: Bethany Cousins

Company: University of Sheffield AMRC

Apprenticeship: Manufacturing Engineer

Level of course: Advanced Apprenticeship (Level 3), Foundation Degree (Level 5) and Degree Apprenticeship (Level 6)

Highlight of working in engineering: Using the skills I have learned throughout my apprenticeship, both the academic and practical aspects, to research and develop new methods of gear manufacture for the aerospace sector and, ultimately, help improve the industry.

Engineers working in aerospace are behind the design for the world's newest passenger planes right through to NASA rovers landing on other planets.

Name: Niall Brooks

Company: Dearneside Fabrications

Apprenticeship: Metal Fabricator

Level of course: Advanced Apprenticeship (Level 3)

Highlight of working in engineering: I have worked on welding the new banisters for the refurbishment of Meadowhall. Knowing that my work is appreciated by the millions of people that visit the shopping centre makes me feel proud of what I do.

Fabricators and welders shape the physical world around us from putting the finishing touches to the redesign of shopping centres to helping construct superstructures like oil rigs and bridges.

Name: Niall Dawson

Company: Pryor Marking Technology

Apprenticeship: Engineering Technician

Level of course: Advanced Apprenticeship (Level 3)

Highlight of working in engineering: I have worked on a project that has saved the company I work for £50,000 a year and 60 per cent reduction in build time. It feels good to know that I played a part in achieving this.

As manufacturing processes continue to become more advanced, skilled engineers are needed to keep production moving.

Name: Joshua McKennan

Company: Street Cranexpress

Apprenticeship: Engineering Manufacturing Technician

Level of course: Advanced Apprenticeship (Level 3) and Higher Apprenticeship (Level 4)

Highlight of working in engineering: Knowing that I am part of a company that maintain and install cranes across some of the UK's key industry sectors including power generation, water, nuclear, defence, waste, and manufacturing.

Who do we work with?

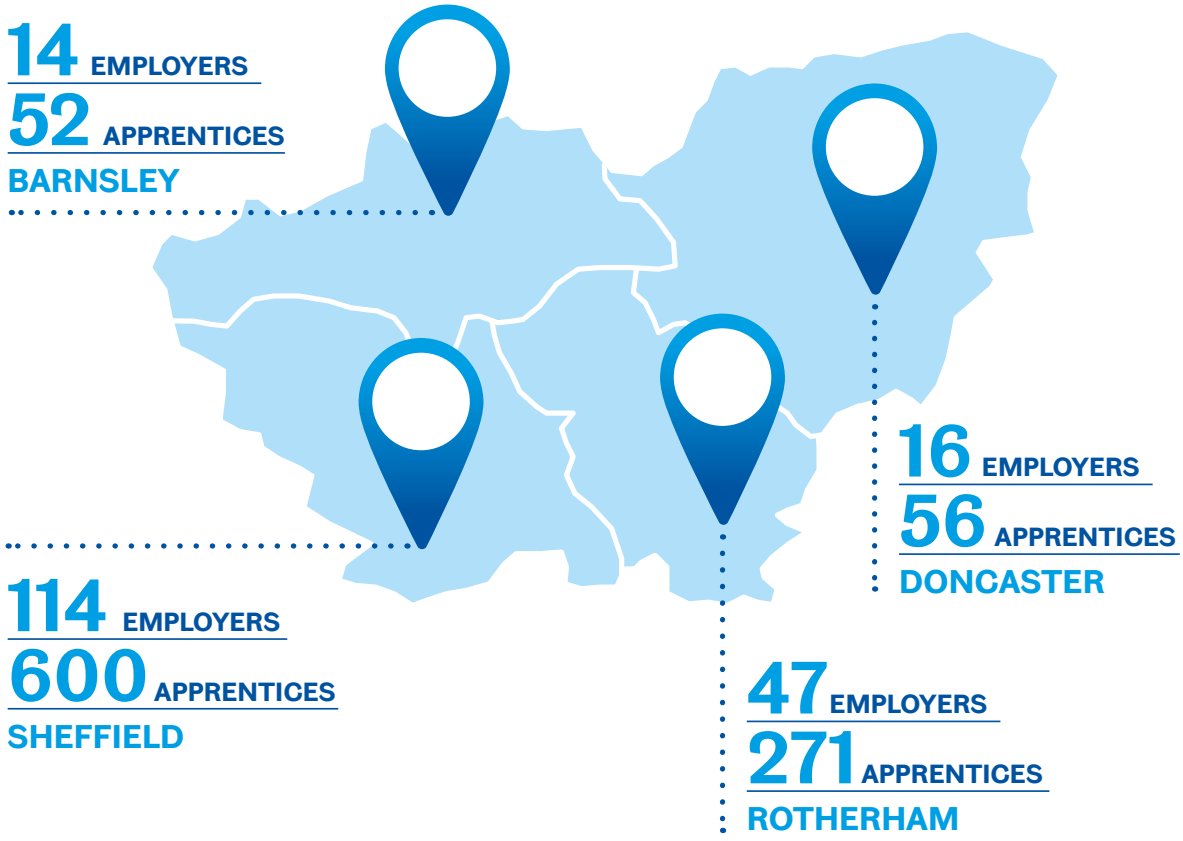
Since 2014 we have engaged with more than 330 employers within the Sheffield City Region, and a further 42 employers outside of the region to train an additional 132 apprentices, in areas such as Leeds, Chesterfield and Derby.

New for 2021

We have apprenticeship places available with Unilever in these locations:

- **Port Sunlight,** Wirral
- **Burton Upon Trent,** Staffordshire
- **Leeds,** West Yorkshire
- **Crumlin,** Newport, Wales
- **Gloucester,** South West England.

Our 2020 Sheffield City Region employers and apprentices...



Our employers say...

Tribosonics
Sheffield, South Yorkshire

Having had such success with our apprenticeship scheme through the AMRC Training Centre, we stopped running a separate graduate development programme. Apprentices are involved in all aspects of our business: designing, testing, prototyping, machining, electronic assembly, as well as project management, strategic and commercial functions. We work extremely hard to identify, recruit, mentor and train motivated and enthusiastic individuals, and they generate so much value in return.

Tom Chaldecott, Engineering Manager.

NE Components
Bradwell, Derbyshire

The AMRC Training Centre provides an excellent grounding for apprentices and prepares them to hit the ground running when they enter the workplace full time. When looking to recruit, there is always a good selection of high calibre candidates.

Phil Longden, Operations Director

Atlantic Pumps
Chesterfield, Derbyshire

Apprentices of this quality are vital to Atlantic Pumps. A great attitude to customer care along with great engineering skills is the core and foundation of our business and, sadly, there just aren't a lot of people looking for jobs who bring both of those attributes. With the AMRC Training Centre, we can recruit the right attitude and rely on the training centre teaching the skills to create a powerful mix and provide exactly what our customers need.

Andy Smith, Managing Director.

What is an apprenticeship?

An apprenticeship is the smart way to combine work and study by combining classroom learning with real-world experience – earning as you learn with a secure and stimulating job at the end of it and pathways to further develop skills and qualifications.

Our apprenticeships are a high-value, high-quality alternative to traditional academic study and are aimed at anyone looking to get started in engineering, those who want to change career or develop the one they already have.

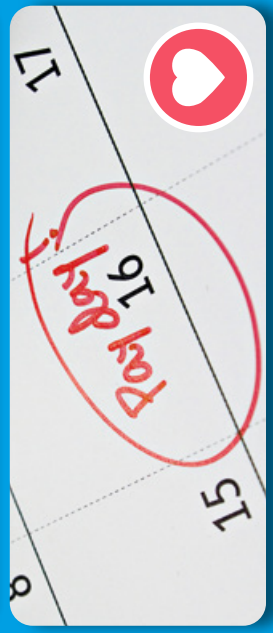
AMRC Training Centre apprentices are employed on a full-time basis, working at least 30 hours every week along with blocks of practical on-the-job training and academic study.

Our in-house recruitment team support you in finding an employer and will work with you to make sure you are matched with the right company to get your engineering career off to the very best start.





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Six good reasons for choosing an AMRC Training Centre apprenticeship

1 Earn while you learn

Apprentices earn approximately £200 a week, but many employers offer more than this.

2 Relevant real-world experience

Apprenticeships ensure that you get hands-on experience and help you to really hit the ground running with your career.

3 Gain nationally recognised qualifications

We only offer nationally recognised qualifications that are acknowledged and respected by employers across the world.

4 No debt from student loans

Your employer pays for you to gain your qualification so you won't be weighed down by student debt.

5 Qualifications for all levels

We offer a clear progression route, from an Advanced Apprenticeship (Level 3) through to Degree (Level 6). This means we can help you at all stages of your career, and whether you come to us from school or college, or are looking to take the next steps within your company, we have a course to suit your needs.

6 We support you throughout your apprenticeship

Our dedicated team will support you throughout your apprenticeship journey, from finding the right employer and job through to visiting you in company, all backed by the University of Sheffield and the AMRC.

Did you know...

We are an Ofsted 'Good' provider.

Ofsted Good Provider

97% of apprentices feel that they are achieving what they set out to do.

95% of apprentices would recommend the AMRC Training Centre to a friend.

95% of apprentices agree that they know how to get support.

93% of apprentices say that they are developing the skills they need to take their next step.

What our apprentices say...

Shivan Morkar: from new recruit to degree apprentice

Shivan Morkar's apprenticeship journey is a perfect example of how apprentices grow to reach their full potential at the AMRC Training Centre and how that is rewarded by employers.

Shivan, 22, came to us as a teenager to do an Advanced Apprenticeship but he will leave with a Manufacturing Engineer Degree Apprenticeship which includes a Bachelor's Degree in Engineering (BEng) from the University of Sheffield, a world top 100 Russell Group university.

"My life has changed massively, I've grown not only as an engineer but as a person as well and I'm so thankful for the opportunity given to me by the company and the AMRC Training Centre," said Shivan, who works for William Cook Rail in Leeds.

"At work I have been promoted from an Apprentice CNC Machinist into a staff role as a Manufacturing Engineer. It means I design fixtures and create numerical control (NC) programs for all the components that we machine in house."

His ambition and determination to succeed has not gone unnoticed. In 2019, Shivan was named the University of Sheffield AMRC Training Centre Apprentice of the Year.

The prize meant far more than having a new trophy for his mantelpiece at home in Bradford. It was confirmation of how much he had progressed as an engineer since arriving at the training centre as an eager new recruit.

After impressing the awards judges with his enthusiasm and passion for industry, coupled with the positive impact he's had on his employer, Shivan is now developing academically through his Degree Apprenticeship and is due to graduate in 2022.

The University Of Sheffield. /AMRC Training Centre

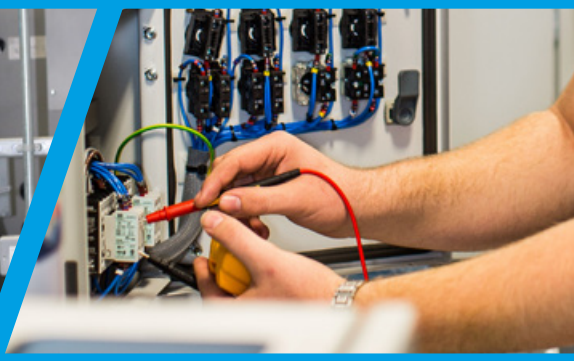
Apprenticeships we offer

Advanced Apprenticeship (Level 3) page 17

Higher Apprenticeship (Level 4) page 27

Degree Apprenticeship (Level 6) page 29






Advanced Apprenticeships

What is an Advanced Apprenticeship?

Advanced Apprenticeships are also called Level 3 apprenticeships and are the equivalent to studying for academic A-Levels. Some people who already have Level 3 qualifications, including A-Levels, choose the Advanced Apprenticeship route because it enables them to develop work-based skills and gain experience in a particular job and sector.

Who is an Advanced Apprenticeship aimed at?

Advanced Apprenticeships are aimed at anyone looking to get started in engineering and for those who might want to change career or develop the one they already have. To be offered an apprenticeship at the AMRC Training Centre you must have GCSE level qualifications or equivalent.

Do Advanced Apprentices get paid?

The current minimum wage rate for an apprentice is £4.15 per hour. This rate applies to apprentices under 19 and those aged 19 or over who are in their first year. Many of our employers offer more than this.

Apprentices that are looking to upskill and are already employed in industry would normally remain on their current salary when they start an apprenticeship. Apprentices receive impressive salary increases as they progress through their apprenticeship journey and become skilled. On average a graduate advanced apprentice can expect a 16 per cent boost to their earnings*.

How long does an Advanced Apprenticeship last?

The AMRC Training Centre's apprenticeships typically run for three years. You will spend a minimum of between 20 to 38 weeks at the start of your apprenticeship programme at the AMRC Training Centre; depending on the apprenticeship pathway you select and the skills your employer would like you to develop before you return to the company.

*Statistics taken from 'Key facts about apprenticeships' – Education & Skills Funding Agency.

Our **Advanced Apprenticeships**

We deliver three Advanced Apprenticeship standards at the training centre. Depending on the requirements of the company you will work for, we offer different courses to ensure that our apprentices receive the right skills for their role.

1 Engineering Technician Apprenticeship

Engineering technicians are predominantly involved in highly skilled, complex work and hold the responsibility for the quality and accuracy of the work they undertake within the limits of their personal authority.

Engineered and manufactured products and systems that Engineering Technicians work on could involve mechanical, electrical, electronic, electromechanical and fluid power components/systems.

We offer five specialisms:

- **Machinist – Advanced Manufacturing Engineer – page 20**
- **Technical Support Technician – page 21**
- **Mechatronics Maintenance Technician – page 22**
- **Product Design and Development Technician – page 23**
- **Toolmaker and Tool and Die Maintenance Technician – page 24**

2 Engineering Fitter Apprenticeship

Engineering fitters produce complex, high-value, low-volume components or assemblies using machines, equipment or systems. For example: turbines, cranes, gearboxes, production lines, rigs and platforms.

With specialism in:

- **Engineering Fitter – page 25**

3 Metal Fabricator Apprenticeship

Metal fabricators carry out their work using things such as rolled steel joists, columns, channels, steel plate and metal sheet. Work includes manufacturing bridges, oil rigs, ships, petro-chemical installations, cranes, platforms, aircraft, automotive and machinery parts, sheet metal enclosures, equipment supports, and anything that can be fabricated using metal. Fabricators can work alone or in teams, in factories or on operational sites.

Typically metal fabricators interact with planners, supervisors, inspectors, designers, welders, pipefitters, fitters, machinists, riggers, steel erectors, stores personnel, painters and many others involved in manufacturing, production, maintenance and repair.

With specialism in:

- **Metal Fabricator – page 26**

Advanced Apprenticeships **Entry Requirements:**

A minimum of five GCSEs at grade 5 to 9, including mathematics, English and a science, technology or engineering-related subject.

Applicants are also required to pass an assessment at the AMRC Training Centre before being offered a place on an apprenticeship.

Find out more on page 38.

Machinist – Advanced Manufacturing Engineer

A machinist apprenticeship is designed for those who are seeking a career as a machinist in the engineering or manufacturing sectors.

Skilled machinists create precision parts which are then used on a daily basis, across the world, in almost everything you see. As well as learning the fundamentals of engineering theory and manufacturing processes, you will gain experience in using the latest computer numerical control (CNC) machine tools to cut, drill and finish components.

What will you study on the course?

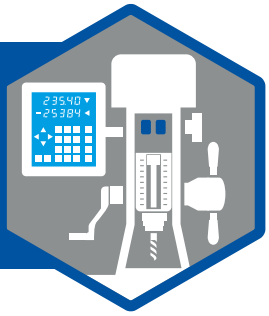
Units could include:

- Producing components using hand fitting techniques
- Manual techniques (turning and milling)
- Preparing and using lathes for turning operations
- Preparing and proving CNC machine tool programs
- Preparing and using CNC machines (turning and milling).

You and your employer will be given the opportunity to select additional units that will help you gain the skills to progress within your organisation.

What jobs will you be trained for once you have finished your apprenticeship?

This apprenticeship trains you for a variety of machining roles such as a Manufacturing Engineer, CNC Machinist, Manual Machinist and Toolmaker.



Technical Support Technician

Technical support technicians provide a service offering diagnostic advice and solutions to engineering and manufacturing difficulties.

Analytical assistance may range from simple installation designs or operation of a basic product, to more serious situations requiring staff to replicate the problem within their technical support facility before providing the client with a same-day solution.

What will you study on the course?

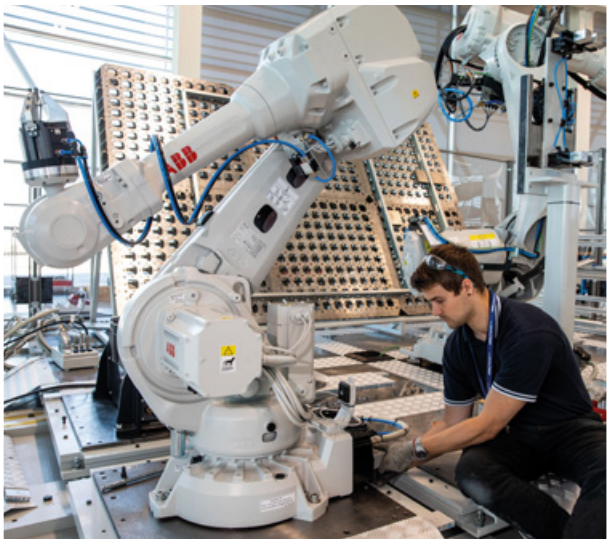
Units could include:

- Preparing and using industrial robots
- Producing components by rapid prototyping techniques
- Producing CAD models (drawings) using a CAD system
- Communications for engineering technicians
- Working efficiently and effectively in advanced manufacturing and engineering
- Preparing and proving CNC machine tool programs.

You and your employer will be given the opportunity to select additional units that will help you gain the skills to progress within your organisation.

What jobs will you be trained for once you have finished your apprenticeship?

This apprenticeship trains you for a variety of technical support roles such as a CAD Engineer, Design Engineer, Offline CNC Programmer, Quality Inspection Engineer and Technical Support Engineer.



Mechatronics Maintenance Technician

Mechatronics maintenance technicians service and install machinery and equipment within the manufacturing and production sectors. Without planned and scheduled maintenance, production would come to a grinding halt.

As an electrical engineer, you will work with high and low voltage equipment in areas such as power generation, transportation, manufacturing and construction. During the apprenticeship you will develop the essential skills to become a multi-skilled maintenance technician by studying the principles and processes of mechanical and electrical/electronic maintenance, dependent upon your job role.

What will you study on the course?

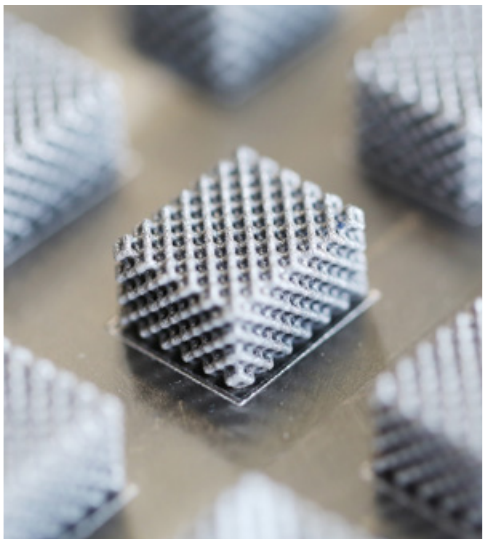
Units could include:

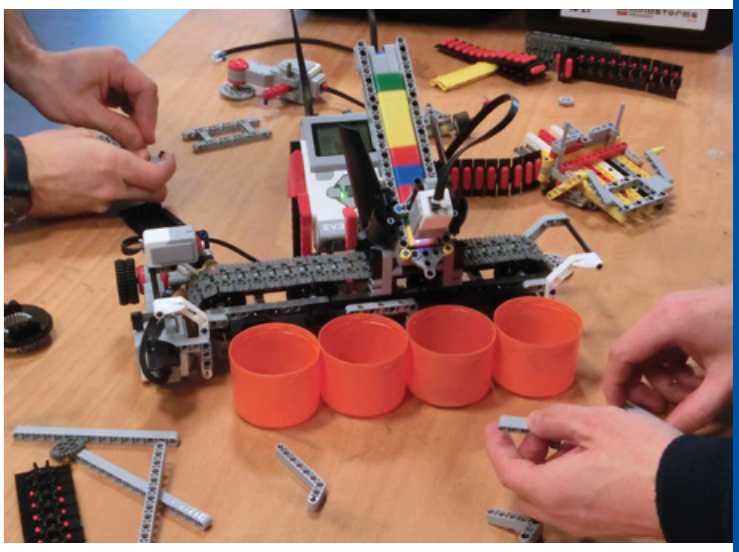
- Carrying out fault diagnosis on engineered systems
- Carrying out preventative planned maintenance on engineered systems
- Assembling and testing fluid power systems
- Maintaining mechanical devices and equipment
- Wiring and testing electrical equipment and circuits.

You and your employer will be given the opportunity to select additional units that will help you gain the skills to progress within your organisation.

What jobs will you be trained for once you have finished your apprenticeship?

This apprenticeship trains you for a variety of maintenance roles such as a Mechatronic Maintenance Technician, Maintenance Engineer, Mechanical Fitter and Electrical Engineer.





Product Design and Development Technician

Product design and development technicians primarily work on all stages of product creation and modification.

They support activities ranging from early concept feasibility, design and development stages right through to final preparation for launch and customers. This includes working in concept studios, rapid prototyping, assembly, testing, validating and analysing performance. Typically they work closely with engineers on bringing new concepts to life or supporting redesigns of existing products.

What will you study on the course?

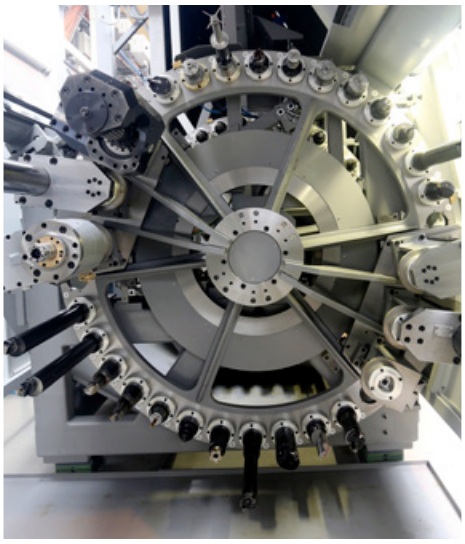
Units could include:

- Wiring and testing electrical equipment and circuits
- Using computer software packages to assist with engineering activities
- Producing engineering project plans
- Using and interpreting engineering data and documentation
- Communications for engineering technicians.

You and your employer will be given the opportunity to select additional units that will help you gain the skills to progress within your organisation.

What jobs will you be trained for once you have finished your apprenticeship?

This apprenticeship trains you for a variety of product and design and development roles such as a Product Design Technician or Design and CAD Technician.



Toolmaker and Tool and Die Maintenance Technician

As a toolmaker and tool and die maintenance technician you will work in the highly-skilled, complex and specialist detailed work of manufacturing and maintaining the engineering tooling used to produce components, products and assemblies.

These products, assemblies and systems affect all of our daily lives, whether it be for travel (such as cars, planes, boats and rail), energy, defence, food, clothing, packaging and health including medical equipment, devices and implants such as joint replacements.

What will you study on the course?

Units could include:

- Preparing and using lathes for turning operations
- Preparing and using milling machines
- Preparing and proving CNC machine tool programs
- Preparing and using CNC turning machines
- Using and Interpreting engineering data and documentation.

You and your employer will be given the opportunity to select additional units that will help you gain the skills to progress within your organisation.

What jobs will you be trained for once you have finished your apprenticeship?

This apprenticeship trains you for a variety of Toolmaker and Tool and Die Maintenance Technician roles such as a Toolmaker (Manufacture) and Toolmaker (Research and Development).

Engineering Fitter

As an engineering fitter you will produce complex high-value, low-volume components or assemblies in full or part, using machines, equipment or systems, to the required specification.

You will interpret drawings/specifications and plan work, ensuring you have the right tools, equipment and resources to complete the task. Fitters are required to check their work against quality standards and make adjustments as required based on their knowledge.

In your daily work, typically you will interact with line managers/supervisors; depending on the size of the employer and nature of the role, you may work as part of a team of fitters or independently.

What will you study on the course?

Units could include:

- Wiring and testing electrical equipment and circuits
- Maintaining mechanical devices and equipment
- Electro, pneumatic and hydraulic systems and devices
- Producing engineering project plans
- Using computer software packages to assist with engineering activities.

You and your employer will be given the opportunity to select additional units that will help you gain the skills to progress within your organisation.

What jobs will you be trained for once you have finished your apprenticeship?

This apprenticeship trains you for a variety of roles such as: Mechanical Fitter, Electrical Fitter, Electronic Fitter, Instrumentation Fitter, Pipe Fitter or Controls and Systems Fitter.

Metal Fabricator

The metal fabricator apprenticeship involves making products and components from raw or semi-finished materials by cutting, shaping and joining sections of metal together. You may also carry out repairs on manufacturing equipment and machinery in addition to welding.

The fabrication and welding industry is embedded in every aspect of our lives, from the cars we drive to the construction of the buildings we work in. Welding, sheet metal fabrication and engineering industries require well-trained people capable of operating a broad range of welding equipment in a variety of techniques.

Throughout this apprenticeship, you will benefit from a mix of classroom learning and practical work which will teach you how to fuse together different metals using appropriate welding techniques.

What will you study on the course?

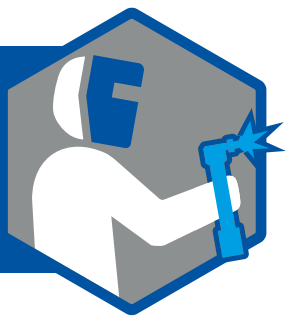
Units could include:

- Fabrication welding – manual and automatic
- Fabrication welding – manual plateworking
- Preparing and using semi-automatic MIG, MAG and flux cored arc welding equipment
- Producing sheet metal components and assemblies
- Preparing and using manual TIG or plasma-arc welding equipment
- Preparing and using metal arc welding equipment.

You and your employer will be given the opportunity to select additional units that will help you gain the skills to progress within your organisation.

What jobs will you be trained for once you have finished your apprenticeship?

This apprenticeship trains you for a variety of roles such as: Fabrication Welder, Sheet Metal Worker, Plater, MIG or TIG Welder and Pipe Welder.



Higher Apprenticeship Level 4

What is a Higher Apprenticeship?

Higher Apprenticeships at Level 4 are equivalent to studying a HNC, CertHE, Level 4 NVQ, BTEC or the first year of university, along with developing the knowledge, skills and behaviours required by the apprenticeship standard. Level 4 apprenticeships usually involve part-time study combined with off-the-job training and on-the-job development.

Higher Apprenticeships provide an opportunity to gain Level 4 qualifications or above, with most apprentices gaining an NVQ Level 4, HND, or foundation degree.

At Level 4, your job role will likely hold responsibilities such as managing projects, people or equipment. Many people choose this apprenticeship pathway as it offers the opportunity to develop the skills needed for career progression, particularly to senior technicians, production team leaders or further study.

Who are Higher Apprenticeships aimed at?

Higher Apprenticeships are aimed at individuals that have completed an Advanced Apprenticeship or equivalent qualifications.

They are ideal for employees that are ready to further their skills and knowledge to take the next steps in their career. Higher Level 4 Apprenticeships can provide a route to promotion or offer a stepping stone to a Degree Apprenticeship.

How much do Higher Apprentices get paid?

The minimum wage rate applies to apprentices under 19 years and those aged 19 or over who are in their first year. Many companies pay more than this, particularly for higher level apprenticeships.

How long does a Higher Apprenticeship last?

A Higher Level 4 Apprenticeship with us takes three years and follows a day-release format from your organisation where you will study one day a week with us in the centre, developing a portfolio of evidence to meet the knowledge, skills and behaviours required.

You will work towards meeting all of the duties required in the standard, completing your apprenticeship after an End Point Assessment.

Higher Apprenticeship Level 4
Engineering Manufacturing Technician

The engineering manufacturing technician apprenticeship can cover a wide range of sectors from automotive and aerospace to material manufacturers.

As an engineering manufacturing technician you will provide specialist technical support so that organisations can develop, produce or test new/existing products, processes or procedures to meet a customer specification in terms of quality, cost and delivery, as efficiently and effectively as possible.

What will you study on the course?

Units could include:

- Manufacturing processes
- Manufacturing planning and scheduling principles
- Engineering maths
- Engineering science
- Industry 4.0
- Sustainability and the environment in the manufacturing industry
- Introduction to professional engineering management
- Creating and managing projects in manufacturing operations.

Entry requirements - You will need one of the following:

- A BTEC Level 3 Diploma in Engineering (with 120 credits at merit-merit level) or equivalent qualifications such as Cambridge Technicals
- A minimum of two A-Levels at grade C or above, including a mathematical based subject and a science, technology, engineering or an additional mathematics-related subject
- An EAL Diploma - merit or higher.

Applicants are also required to pass an assessment at the AMRC Training Centre before being offered a place on an apprenticeship. Applicants must already be employed in an suitable engineering role.

Find out more on page 38.

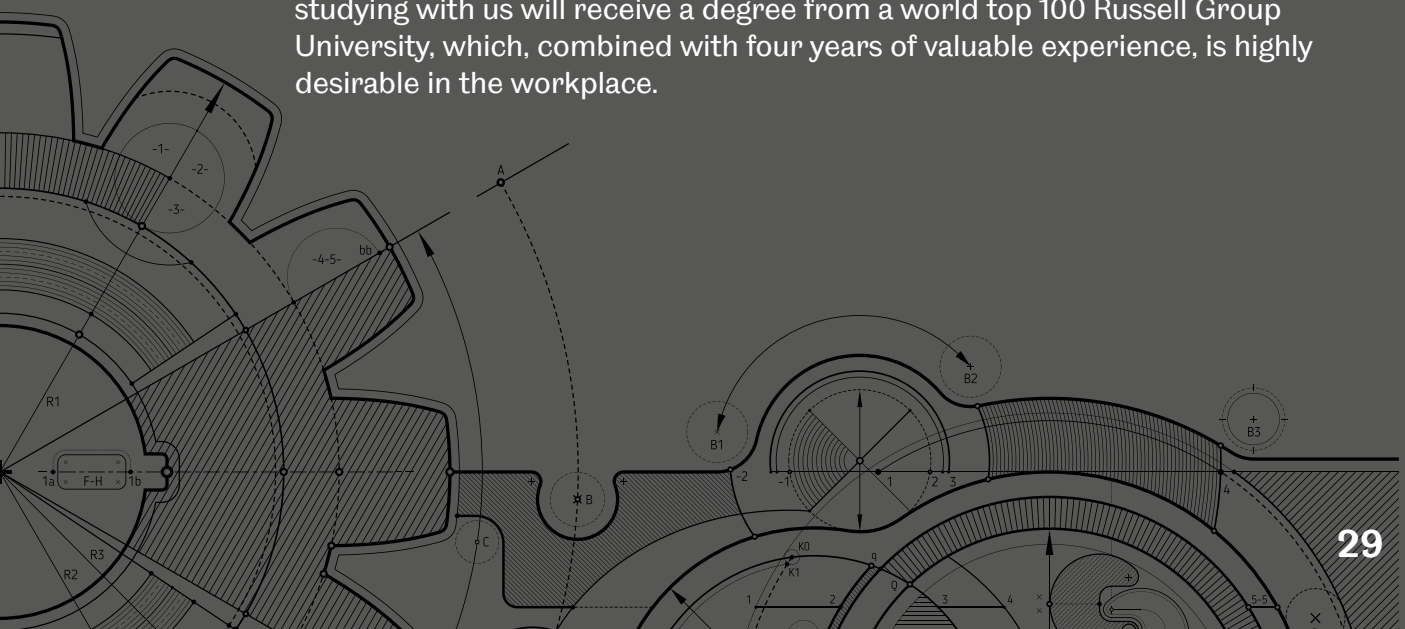
What jobs will you be trained for once you have finished your apprenticeship?

This apprenticeship trains you for a variety of roles such as: Manufacturing Engineer Quality, Manufacturing Production Engineer, Manufacturing Procurement Engineer, Quality Engineer, Costing Engineer, Test and Commissioning Engineer, Installation Engineer, Process Engineer and Production Support Engineer.

Degree Apprenticeships

Our degree apprenticeships give apprentices, employees and school or college leavers a different route to traditional university study. We offer the opportunity to gain a degree, develop practical workshop skills and valuable transferable skills alongside gaining real-life, on-the-job experience.

We work with business to develop an environment and curriculum that is challenging and stimulating but ultimately rewarding. You'll have access to the full breadth of opportunities the manufacturing and engineering sector has to offer, and, as we are part of the University of Sheffield, apprentices studying with us will receive a degree from a world top 100 Russell Group University, which, combined with four years of valuable experience, is highly desirable in the workplace.



What is a **Degree Apprenticeship?**

Designed in partnership with employers, students combine their part-time study with full-time employment, to complete the Degree Apprenticeship.

Apprentices will gain the knowledge, skills and behaviours, needed to be successful in their workplace. As part of a Degree Apprenticeship students can achieve a full Bachelor's Degree in Engineering (BEng).

Who are Degree Apprenticeships for?

Degree Apprenticeships are suitable for either A-Level leavers, those who already have an Advanced Apprenticeship or for employees who are looking to upskill, including mature students.

How much do Degree Apprentices get paid?

The minimum wage rate applies to apprentices under 19 years and those aged 19 or over who are in their first year. Many companies pay more than this, particularly for higher level apprenticeships.

In fact, you could potentially earn upwards of £300 per week, plus your employer and the government pay for your tuition fees, meaning you don't have to. In contrast, British students taking a full-time university degree in England pay a maximum of £9,250 per year in tuition fees.

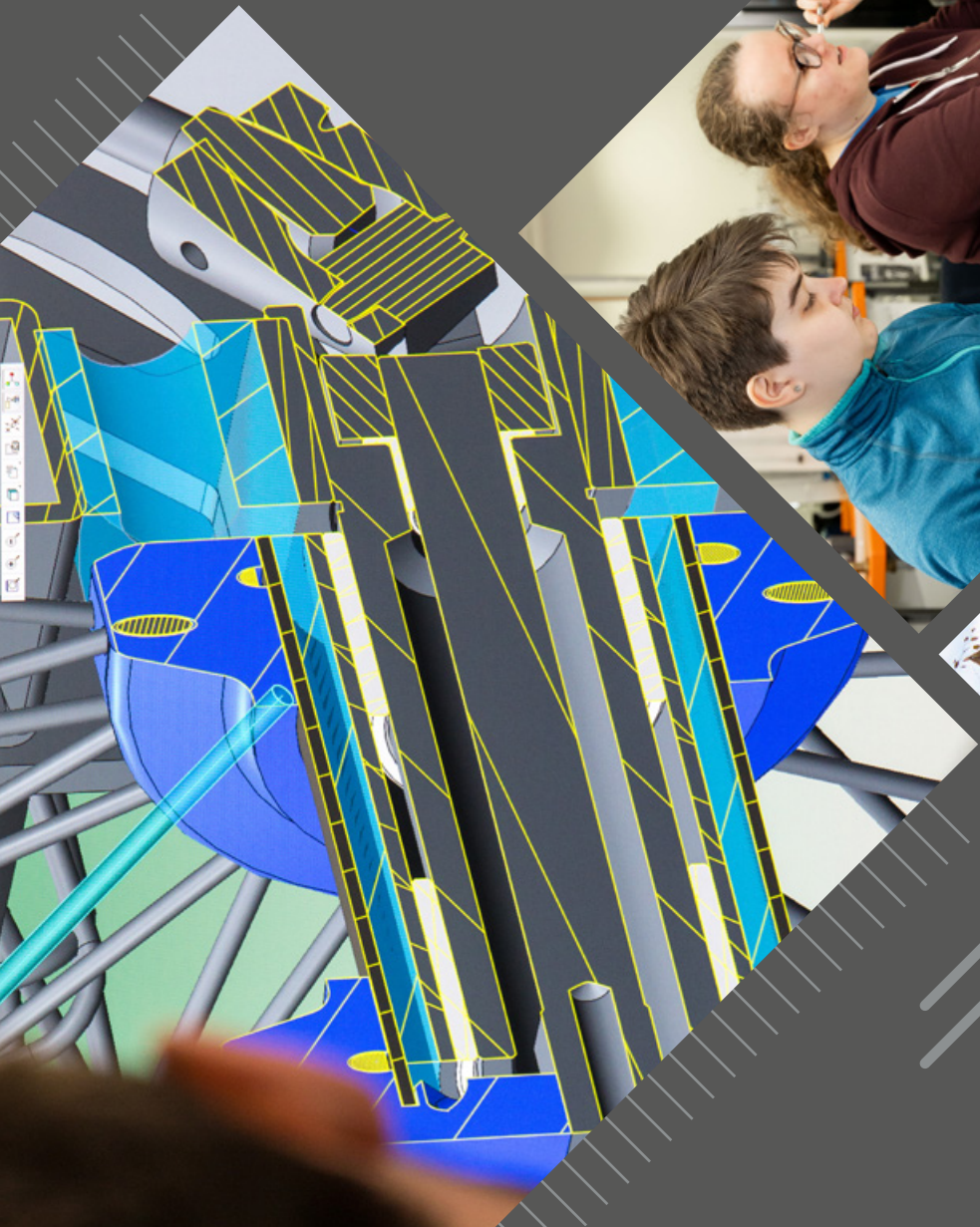
What is the format of a Degree Apprenticeship?

The degree is delivered using a blend of face-to-face learning, lectures, seminars and tutorials - with online and self-paced learning and support to enable apprentices to combine their studies with full-time employment. It has been designed in partnership with academic staff and employers to ensure apprentices can graduate equipped to meet the current and future needs of the advanced manufacturing and engineering sector.

The workshop training is delivered in a full-time block at the AMRC Training Centre by experienced trainers with industrial experience, giving you the time to learn and develop your practical skills. A work-based assessment will take place in your workplace, under the guidance of an assessor.

Applicants with a Performing Engineering Operation (PEO) or similar may be eligible for recognition of prior learning which may mean that they do not need to complete all the workshop elements of the apprenticeship.

The apprenticeship culminates with an assessment where you will describe and explain how you have developed your knowledge, skills and occupational behaviours during your apprenticeship.



Our **Degree Apprenticeships**

We offer three Degree Apprenticeship standards at the training centre. Depending on the requirements of the company, we offer different courses to ensure that our apprentices can fully incorporate their learning into their role.

1 Manufacturing Engineer Apprenticeship

Manufacturing engineers support the activities involved in bringing design programmes into manufacture. This role is pivotal to the launch, planning and smooth delivery of new products or product refresh programmes. The focus is on the advanced manufacturing techniques and project management skills required to launch products on time, on cost and to the right quality. Typically manufacturing engineers work closely with a range of other engineers, functions and managers both within their own company and supplier base.

Specialisms we offer:

- **Bachelor of Engineering (BEng) in Manufacturing Technology – page 34**
- **Bachelor of Engineering (BEng) in Mechanical Manufacture – page 35**

2 Product Design and Development Engineer Apprenticeship

Product design and development engineers use engineering techniques to bring new products to life or redesign existing products.

Product design and development engineers work on all stages of product creation, product modification and product componentry. They support activities ranging from early concept feasibility, Computer-aided design (CAD) and other modelling, activities and stages through to final preparation for launch and customers. This includes working in concept studios, rapid prototyping, assembly, testing, validating and analysing performance. Typically they work closely with suppliers and managers in bringing new concepts to life or contributing to redesigns of existing products.

Specialisms we offer:

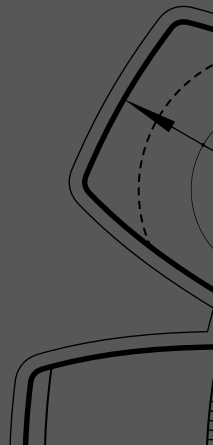
- **Bachelor of Engineering (BEng) in Manufacturing Technology – page 34**
- **Bachelor of Engineering (BEng) in Mechanical Manufacture – page 35**

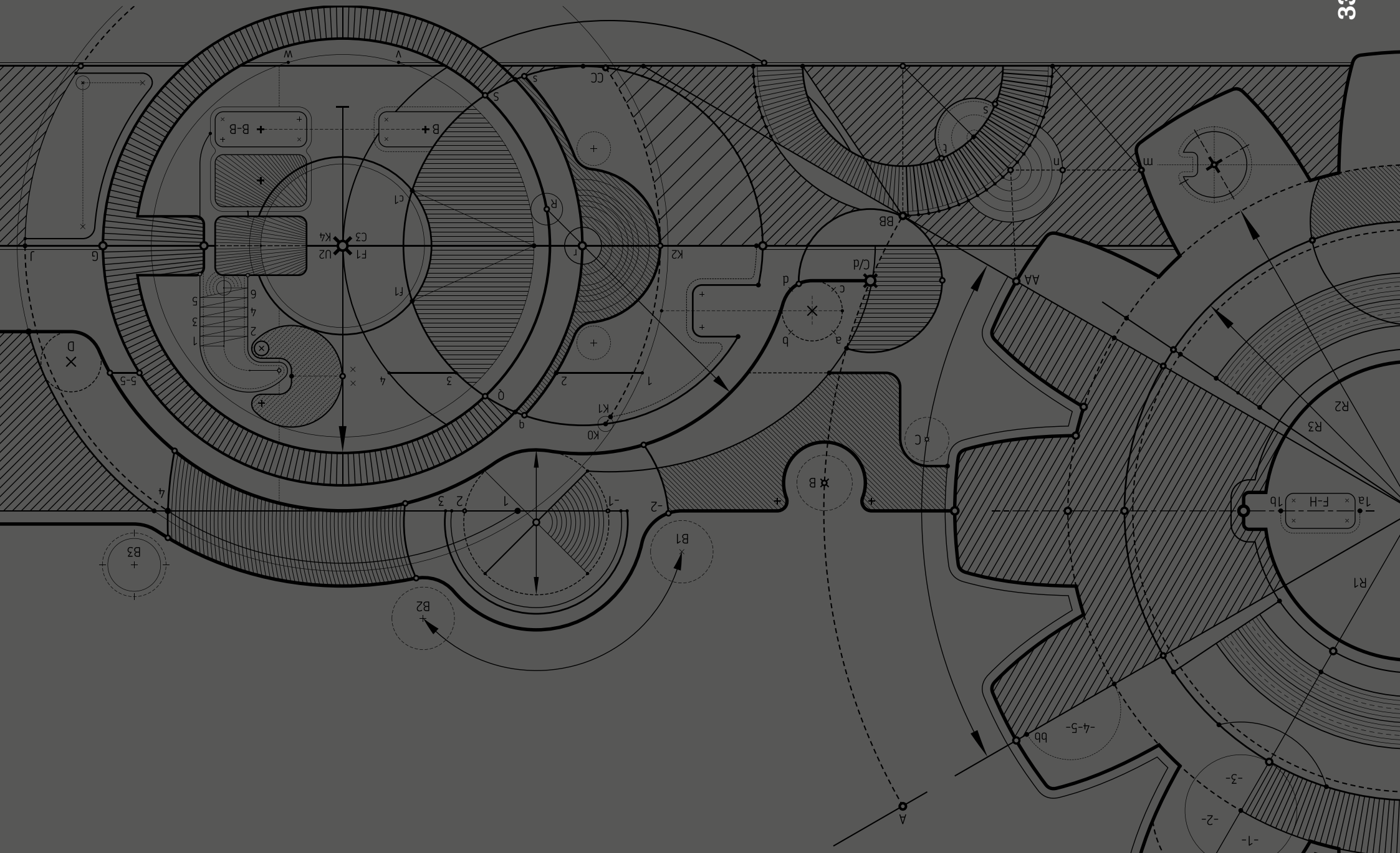
3 Control Technical Support Engineer Apprenticeship

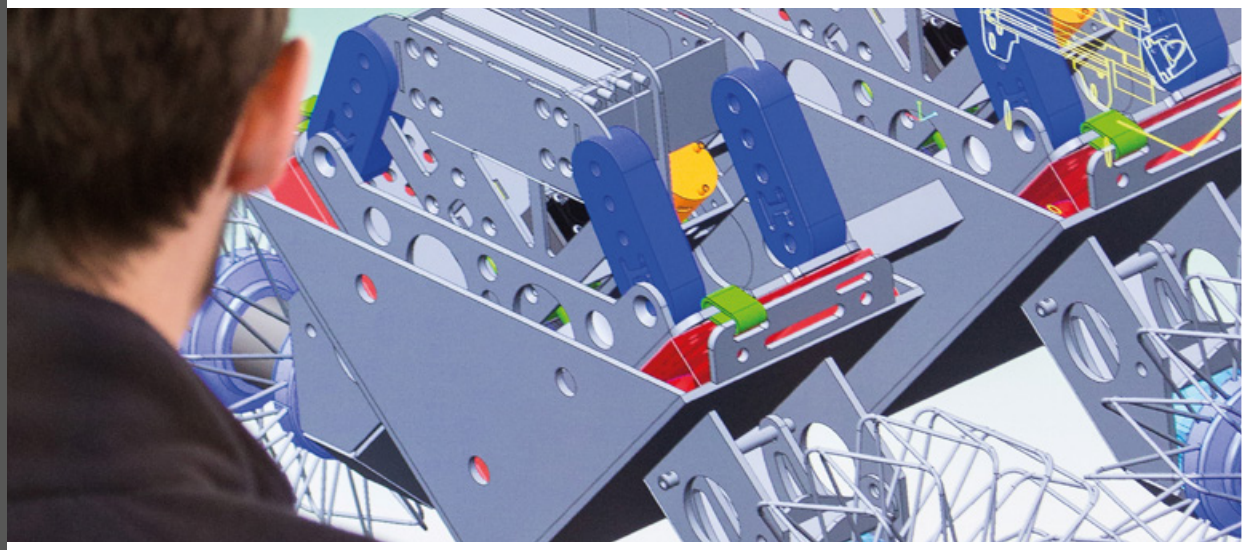
Control technical support engineers assure that manufacturing runs smoothly in areas such as site maintenance. Typically, they work closely with other production roles in a fast-paced and cost-conscious manufacturing environment, where complex problem solving is key.

With specialism in:

- **Bachelor of Engineering (BEng) in Maintenance Engineering – page 36**







Bachelor of Engineering (BEng) in **Manufacturing Technology**

The products we depend on in everyday life are created from raw materials using manufacturing technology through chemical, thermal and mechanical processing. Emerging manufacturing technologies, based on effective mechanical and system design, minimise social and environmental costs whilst producing high-quality products that are affordable.

This pathway focuses on manufacturing technology design and operation for all major classes of manufacturing processes, including casting, machining, forming, joining and additive manufacturing; and for all relevant classes of materials including polymers, composites, ceramics and metals.

This study is underpinned by fundamental theories of physical principles including thermodynamics, statics and dynamics, numerical methods, control and instrumentation.

Graduates will be able to apply a broad understanding of technical, economic, social and environmental implications of manufacturing technology, to contribute to a competitive and sustainable manufacturing industry.

Course Overview

Year 1

- Engineering mathematics and computing
- Electrical engineering and instrumentation
- Manufacturing processes and materials engineering
- Fundamentals of science for engineers
- Professional development for engineers
- Introduction to design and CAD/CAM
- Operations management.

Year 2

- Further mathematics and computing for engineering
- Control systems and automation
- Professional responsibility and the engineering society
- Multidisciplinary project
- Non-metallic component manufacturing - composites
- Manufacturing systems
- Further science for engineers.

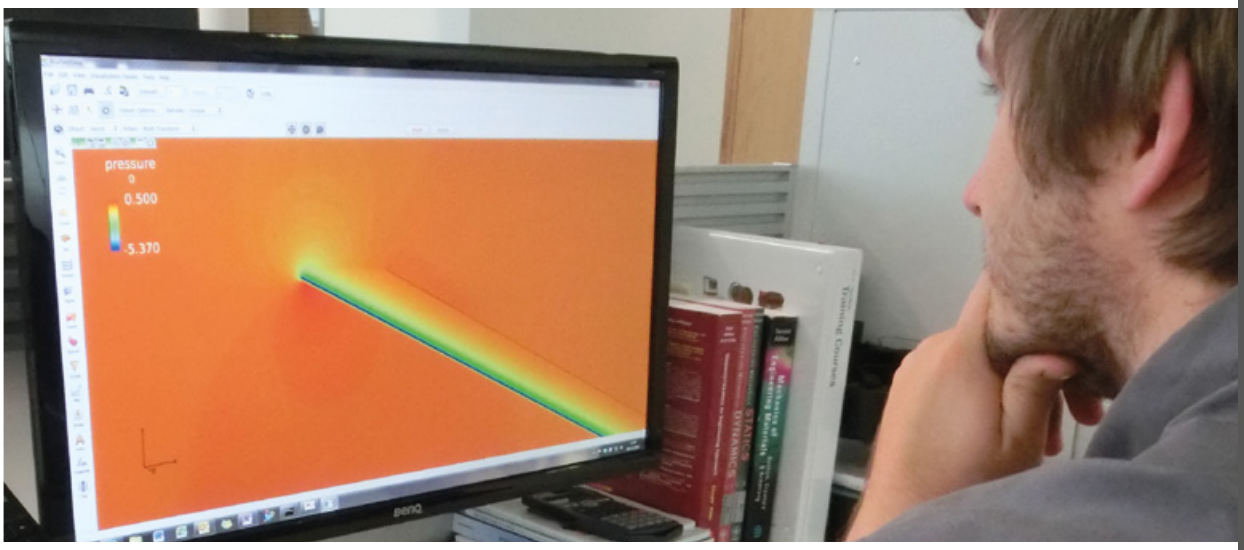
Year 3

- Supply chain management
- Further non-metallic component manufacturing – polymers, ceramics and glass
- Industry 4.0
- Industrial project
- Project management
- Additive manufacturing.

One unit can also be chosen from the following:

- Mould and tooling design
- Lubrication and wear.

Full details regarding the programme overview can be found online at **amrctraining.co.uk/degree**



Bachelor of Engineering (BEng) in **Mechanical Manufacture**

Modern manufacturing processes at all levels of the supply chain rely on interactions between workpiece materials and tooling to manufacture products that are lighter, cheaper, greener and faster, to maintain global competitiveness.

This pathway focuses on the mechanics of advanced manufacturing processes, including mechanical design of manufacturing components, interaction between process equipment and workpieces for optimum process design and failure analysis and finite element analysis for advanced machine components. Typical areas of interest include structural mechanics, heat transfer and fluid flow, and wear and lubrication.

Graduates will be able to contribute to the competitiveness of the manufacturing sector by designing and optimising modern manufacturing processes.

Course Overview

Year 1

- Engineering mathematics and computing
- Electrical engineering and instrumentation
- Manufacturing processes and materials engineering
- Fundamentals of science for engineers
- Professional development for engineers
- Introduction to design and CAD/CAM
- Operations management.

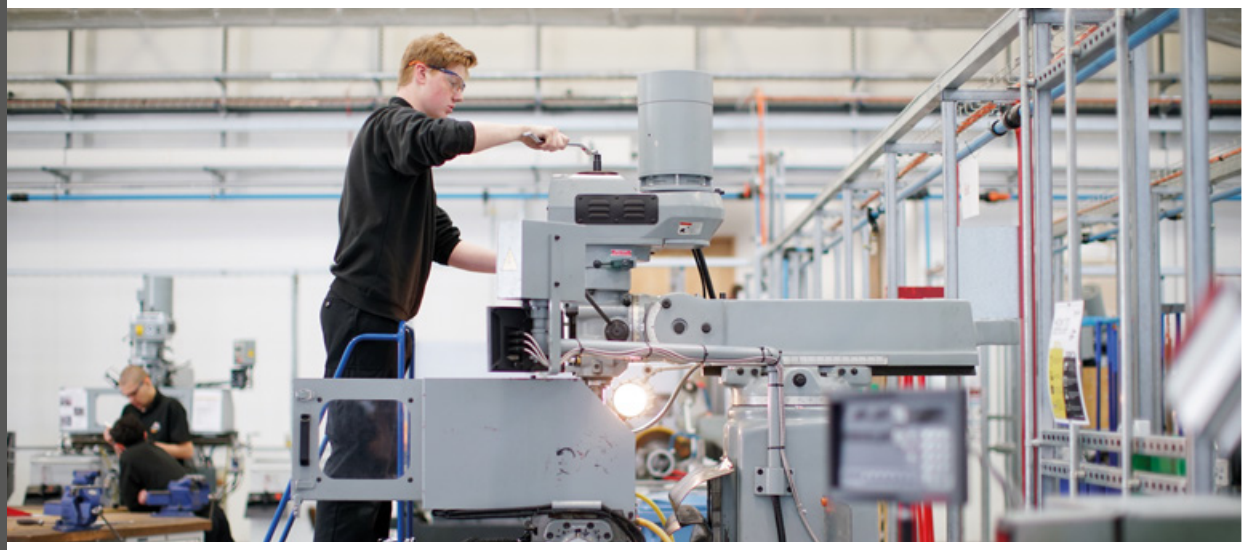
Year 2

- Further mathematics and computing for engineering
- Control systems and automation
- Professional responsibility and the engineering society
- Multidisciplinary project
- Engineering mechanics for manufacturing
- Thermofluidic engineering.

Year 3

- Mechanics and manufacturing of modern materials
- Lubrication and wear
- Machine element design and analysis of failure
- Finite element analysis for machines
- Industrial project
- Project management.

Full details regarding the programme overview can be found online at **amrctraining.co.uk/degree**



Bachelor of Engineering (BEng) in **Maintenance Engineering**

Modern engineering systems such as power generation systems, food processing, aircraft and many advanced manufacturing processes, require reliable operation in order to achieve consistent and competitive high-quality production.

Downtime due to maintenance and repair can have a significant impact on profitability and delivery timescales. There is high demand for maintenance engineers with technical and managerial expertise.

This pathway focuses on the application of lifecycle management, statistical techniques, reliability, availability, asset management, engineering systems and control.

Graduates will be able to apply engineering and managerial skills to effectively and safely predict and plan maintenance schedules to avoid disruption and optimise production.

Course Overview

Year 1

- Engineering mathematics and computing
- Electrical engineering and instrumentation
- Manufacturing processes and materials engineering
- Fundamentals of science for engineers
- Professional development for engineers
- Introduction to design and CAD/CAM
- Operations management.

Year 2

- Further mathematics and computing for engineering
- Control systems and automation
- Professional responsibility and the engineering society
- Multidisciplinary project
- Further science for engineers
- Manufacturing systems
- Introduction to asset management.

Year 3

- Engineering systems: modelling and optimisation
- Maintenance management
- Lubrication and wear
- Industrial project
- Project management
- Fundamentals of reliability, availability, maintainability and safety.

Full details regarding the programme overview can be found online at **amrctraining.co.uk/degree**

Degree Apprenticeship **Entry Requirements:**

A minimum of two A-Levels at grade B or above, including a mathematical based subject and a science, technology, engineering or an additional mathematics related subject; an Engineering BTEC Level 3 with 120 credits at distinction or merit level; or equivalent qualifications such as Cambridge Technicals.

Plus five GCSEs at grades 4 to 6, including mathematics, English and a science, technology or engineering related subject.

Applicants are also required to pass an assessment at the AMRC Training Centre before being offered a place on an apprenticeship. **Find out more on page 38.**

Do you have a HND in Engineering ?

If you already have a Higher National Diploma (HND) in Engineering, there are opportunities to join our Degree Apprenticeships in the second or third year of study.

Entry requirements depend on modules of study already completed and the satisfactory result of an entry test, interview and assessment.

To speak to us about this opportunity, get in touch with our recruitment team at:

recruitment@amrctraining.co.uk
or **0114 222 9958**

How to apply

What makes the AMRC Training Centre unique is that we work directly with local companies and well-known manufacturing organisations to match you with the right job and the right employer.

Our recruitment team will support your apprenticeship journey from filling in your application through to helping you secure a job and starting your apprenticeship.

amrctraining.co.uk

Here is how our application process works:

Step 1:

Let us know you are interested

The first step to applying is letting us know that you are interested in an apprenticeship with us. To do this, fill in an expression of interest form on our website **amrctraining.co.uk/how-to-apply**

Step 2:

Fill in an application form

Once we have received your interest form, a member of our team will get in contact with the information you need to start the application process. We will be on hand along the way to help you.

Remember the more information you can provide, the easier it is for us and the employers we work with to try and find you the right role.

Step 3:

Online assessment

We require everyone that applies to complete an online assessment. The tests we carry out are relevant to the engineering sector and focus on several key skill areas, these include:

- **Literacy**
- **Numeracy**
- **Spatial awareness**
- **Mechanical reasoning**
- **Principles of measurement**
- **Problem solving**
- **Colour blind test**

You can find out more about our assessment test online at **amrctraining.co.uk/how-to-apply**

A step-by-step guide to our **application process**

Step 4:

Interview

Once you have successfully completed your application form and online assessment, a member of our team will invite you to an interview.

The interview will be with a member of the recruitment team and a member of our teaching staff. We will ask you a series of questions relating to your goal of becoming an apprentice engineer.

Step 5:

Matching you to an employer

If you are successful in completing steps one to four, you can progress to the final stage - finding an employer. You must be placed with a company before you can start your apprenticeship at the AMRC Training Centre.

Don't worry, we will help you. What makes us a good choice is our recruitment team works directly with local companies on your behalf. We already have jobs lined up for our applicants.

Do you already have a job?

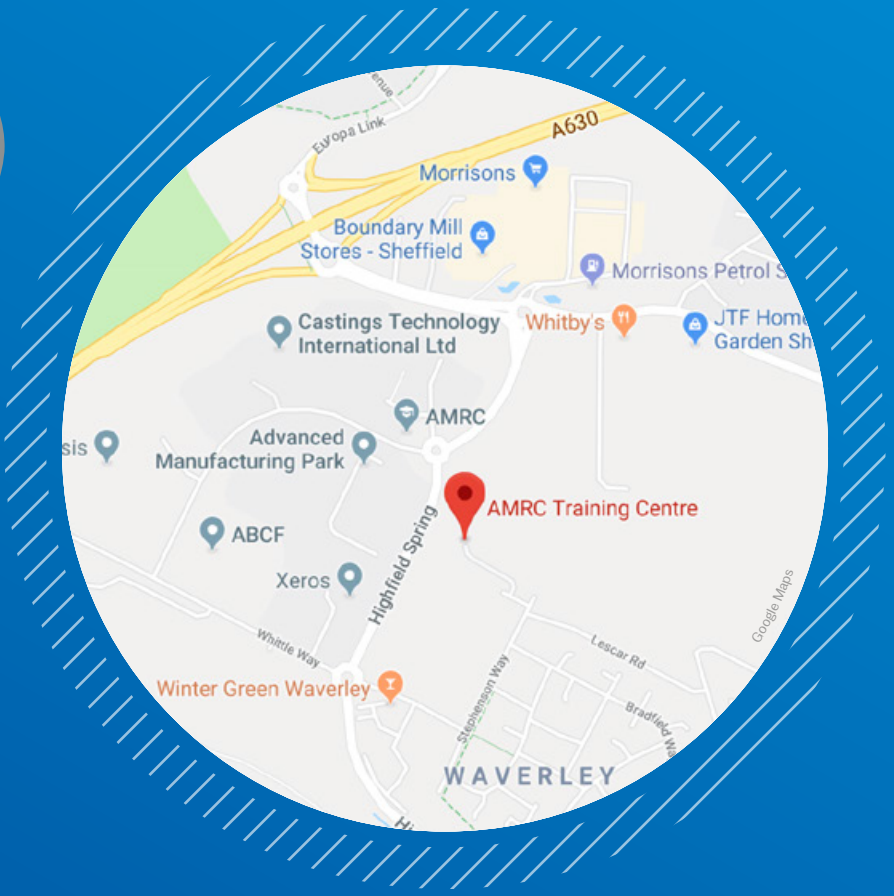
If you already have a job with a company that would like to support you in undertaking an apprenticeship, this is OK too. Just let our recruitment team know and we can help with the rest.

Got any questions?

If at any point you have any questions about your application, you can contact our recruitment team at **recruitment@amrctraining.co.uk**

@AMRCtraining | @amrctrainingcentre | AMRCTrainingCentre | AmrcTrainingCentre | amrc-training-centre

FIND US



The AMRC Training Centre is located off Highfield Spring.
To access the car park, turn down Mitchell Way next to the Winter Green pub and then left onto Stephenson Way.

AMRC Training Centre, Advanced Manufacturing Park, Off Highfield Spring, Catcliffe, Rotherham, S60 5BL

0114 222 9958 **info@amrctraining.co.uk**

amrctraining.co.uk

The content of our courses is reviewed annually to make sure it's up-to-date and relevant. Individual modules are occasionally updated or withdrawn. This is in response to discoveries through our world-leading research; funding changes; professional accreditation requirements; student or employer feedback; outcomes of reviews; and variations in staff or student numbers. In the event of changes, we will consult and inform students in good time and will take reasonable steps to minimise disruption.

Apprenticeships
Education & Skills Funding Agency
European Union
European Social Fund