



Dudley Advance

The Centre for Advanced Manufacturing
and Engineering Technology

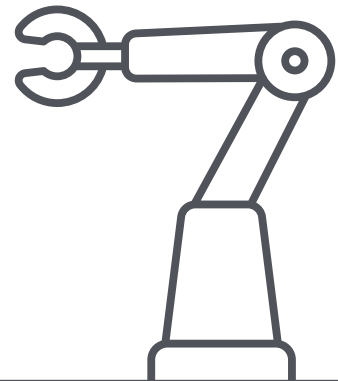
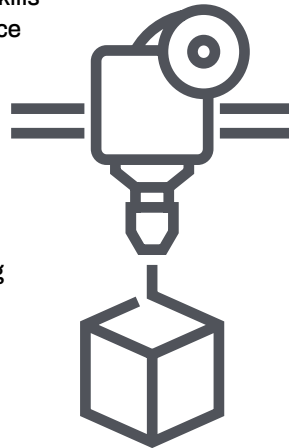
Why partner with Dudley College of Technology?

**£12
million**

Invested in new centre
for Advanced Building
Technologies and
Construction Skills
(Dudley Advance
II campus)

**£9
million**

Invested in new
2,800m² centre
for Manufacturing
and Engineering
Technology
(Dudley Advance
campus)



Ofsted rated 2017
Outstanding

Annual turnover over in 2017/18

**£41
million**

We are one of the UK's major
colleges for Further Education

Over
4,000
apprentices on
programme 17/18

**One of the top
colleges nationally**

for the number of apprentices that successfully achieve their qualifications

We delivered training to over
12,600 learners
2017/18

Established
since
1862

Flexible solutions to your training needs

A range of full-time and part-time courses and Apprenticeships are accessible, all directly linked to the traditional processes and emerging technologies needed across the engineering and manufacturing sector.

Training packages will suit all abilities, from entry level for those newly recruited into the industry, right through to degree level. Our unique partnership with Aston University supports potential graduates who require high-level skills or who are progressing into management or technical roles.

Dudley Advance is a STEM assured and IMechE approved centre offering employers the complete solution.



Ofsted rated 2017 - Outstanding:

Through extensive partnerships Dudley College of Technology create excellent opportunities for learners to progress into further learning and jobs.

Engineering Technician

Apprenticeship Standard (level 3)

Funding value:

£26,000

Duration:

36 – 48 months.

Entry Requirements:

Employers will set their own entry requirements, but it is expected that the individual would have worked within a customer service role to start on this Apprenticeship Standard.

Core occupational profile:

Engineering Technicians in a range of Advanced Manufacturing and Engineering Sector roles, predominantly involved in highly skilled, complex work and must, as a minimum be able to:

- Apply safe systems of working
- Make a technical contribution to either the design, development, quality assurance, manufacture, installation, commissioning, decommissioning, operation or maintenance of products, equipment, systems, processes or services
- Apply proven techniques and procedures to solve engineering/manufacturing problems
- Demonstrate effective interpersonal skills in communicating both technical and non-technical information
- Have a commitment to continued professional development

Engineering Technicians take responsibility for the quality and accuracy of the work they undertake within the limits of their personal authority. They also need to be able to demonstrate a core set of behaviours in order to be competent in their job role, complement wider business strategy and development. This will enable them to support their long term career development.

Engineered and manufactured products and systems that Engineering Technicians work on could involve mechanical, electrical, electronic, electromechanical and fluid power components/systems. All apprentices will undergo a period of foundation skills and technical knowledge development to achieve this qualification.

All Apprentices will undergo:

After a period of foundation skills and technical knowledge development all apprentices will be required to achieve the following qualifications:

- Level 2 Diploma in Advanced Manufacturing Engineering (Foundation Competence)

Dudley College of Technology deliver the following pathways:

- Machinist – Advanced Manufacturing Engineering
- Mechatronics Maintenance Technician
- Product Design and Development Technician
- Toolmaker and Tool and Die Maintenance Technician
- Technical Support Technician.

Engineering Technicians

Apprenticeship Standard – Pathways

Machinist

Machinists in the Advanced Manufacturing Engineering sector are predominantly involved in highly skilled, complex and precision work, machining components from specialist materials using conventional and/or CNC machine tools such as centre lathes, vertical and horizontal milling machines, horizontal and cylindrical grinding machines, electro discharge machines, single and multi- axis CNC machine tools centres. They will be expected to be able set up, operate and adjust/edit equipment settings as applicable to the machine tool being used. When using CNC equipment they will be expected to be able to produce, prove and/or edit programmes. During and on completion of the machining operations they will be expected to measure and check the components being produced and make adjustments to the equipment/ programme to ensure components meet the required specification.

Qualifications:

- Level 2 Diploma in Machining (Foundation Knowledge)
- After a further period of skills and technical knowledge development all apprentices will be required to achieve the following qualifications:
- Level 3 Diploma in Advanced Manufacturing Engineering (Development Competence) - Machining
- Level 3 Diploma in Machining (Development Knowledge).

Mechatronics Maintenance Technician

Mechatronics Maintenance Technicians ensure that plant and equipment perform to the required standard to facilitate production targets regarding Safety, Quality, Delivery and Cost within High Value Manufacturing environments. Typically the work would cover a broad range of activities include installation, testing, fault finding and the on-going planned maintenance of complex automated equipment. This requires the application of a complex blend of skills, knowledge and occupational behaviours across the electrical, electronic, mechanical, fluid power and control systems disciplines.

Qualifications:

After a further period of skills and technical knowledge development all apprentices will be required to achieve the following qualifications:

- Level 3 Diploma in Advanced Manufacturing Engineering (Development Competence) – Mechatronics Maintenance Technician
- Level 3 Diploma or Extended Diploma in Advanced Manufacturing Engineering (Development Knowledge)



Product Design and Development Technician

Product Design & 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 in bring new concepts to life or supporting redesigns of existing products.

Qualifications

After a further period of skills and technical knowledge development all apprentices will be required to achieve the following qualifications:

- Level 3 Diploma in Advanced Manufacturing Engineering (Development Competence) – Product Design and Development
- Level 3 Diploma in Advanced Manufacturing Engineering (Development Knowledge)

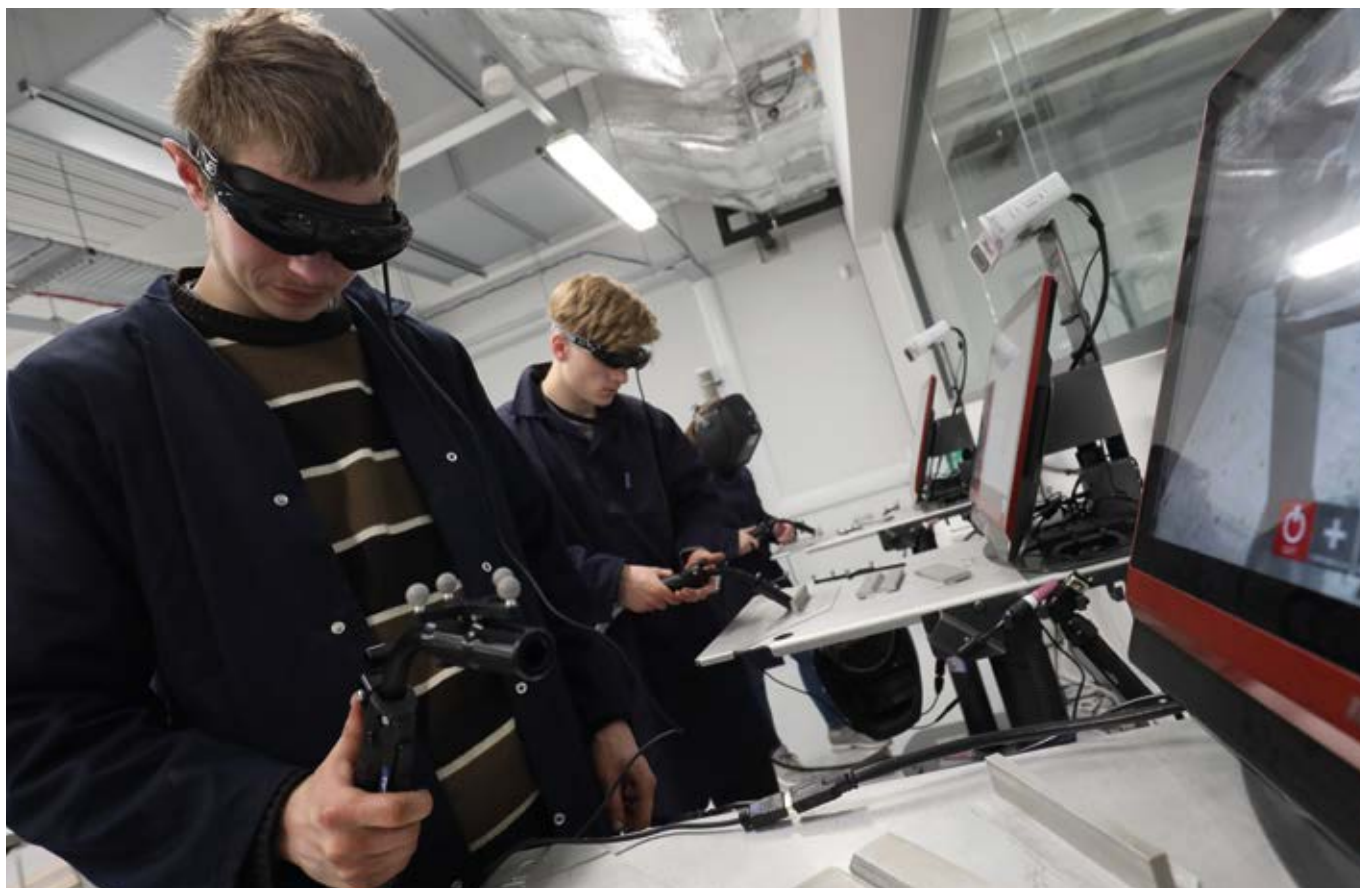
Toolmaker and Tool and Die Maintenance Technician

Toolmakers and Tool & Die Maintenance Technicians are predominantly involved 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. This requires the application of a broad range of activities including the interpretation of Engineering drawings and technical instructions and the use of hand, machine and automated computer controlled machine tools and measuring equipment.

Qualifications

After a further period of skills and technical knowledge development all apprentices will be required to achieve the following qualifications:

- Level 3 Diploma in Advanced Manufacturing Engineering (Development Competence) – Toolmaker, Tool and Die Maintenance.
- Level 3 Diploma or Extended Diploma in Advanced Manufacturing Engineering (Development Knowledge)



Technical Support Technician

Technical Support Technicians, work as part of a team to provide technical support and expertise for all areas of the Engineering and Manufacturing function including communications software, test, analysis tools, measurement, off line programming, process control, performance and continuous improvement solutions, capacity planning, production scheduling/planning, product technical applications and capability, technical sales and marketing support, product development and innovation, engineering drawing, purchasing and/or supply of goods or services for engineering activities, quality control, inspection and e-commerce technologies as required.

Qualifications

After a further period of skills and technical knowledge development all apprentices will be required to achieve the following qualifications:

- Level 3 Diploma in Advanced Manufacturing Engineering (Development Competence) – Technical Support
- Level 3 Diploma or Extended Diploma in Advanced Manufacturing Engineering (Development Knowledge)



Higher Apprenticeship in Manufacturing Engineering

Course Aims

The Higher Apprenticeship framework for Advanced Manufacturing Engineering at level 4 has been designed to provide the manufacturing and engineering sectors with high grade technicians and engineers who have practical skills, combined with a Higher Education qualification.

Course Content

The Higher Apprenticeship in Advanced Manufacturing Engineering consists of:

Higher National Certificate in either Mechanical Engineering or Electrical & Electronic Engineering on a day release basis attending college. Typical units are:

HNC Mechanical Engineering

Analytical Methods; Engineering Science; Project Design, Implementation and Evaluation; Mechanical Principles; Business Management Techniques for Engineers; Computer Aided design and Manufacture; Engineering Materials; Advanced Computer Aided Design Techniques.

HNC Electrical/ Electronic Engineering

Analytical Methods; Engineering Science; Project Design, Implementation and Evaluation; Business Management Techniques for Engineers; Electrical, Electronic and Digital Principles; Combinational and Sequential Logic; Electronic Computer Aided Design Techniques; Digital and Analogue Devices and Circuits.

NVQ 4 Extended Diploma in Engineering Manufacture delivered in the workplace. The skills and knowledge covered in the NVQ 4 includes:

Performing engineering operations; Research; Design; New product development and introduction; Council for administration; Business improvement techniques.

Entry Requirements

BTEC National Certificate in Engineering (at grade MM) **

BTEC National Diploma in Engineering (at Grade MMP) **

** These should include modules Further Maths for Technicians, plus Mechanical Principles &/or Electrical Principles

Entry can be achieved with the following but additional bridging courses may be required:

- GCE 'A' Level in Mathematics and AS Level in Physics- Grade C.
- C&G 236 part 'C'
- BTEC Nationals in Engineering at Pass grades
- ACCESS to HE Science
- BTEC Nationals in Science
- C&G 2330 Level 3

Suitable industrial experience and older qualifications may be accepted after interview.

Progression

There is the opportunity to top the Higher National Certificate to Higher National Diploma and Degree

Funding

The funding value for the Higher Apprenticeship in Manufacturing Engineering is £12,000 and is fundable through the Apprenticeship Levy.



Case studies

Stepping up a gear at Hayley 247

Company: Hayley 247 Engineering Services Limited

Location: Dudley

Employees: 32

Since 2011, Hayley 247 has increased turnover, customer wins and acquired two businesses. To get up to full speed, you need to change gear. Dudley-based mechanical engineering service provider, Hayley 247, demonstrates this perfectly.

To keep pace with its success, the company has invested in facilities - with a 25,000 square foot engineering facility; processes using just-in-time batch production; and people, including a number of apprentices progressing through the business with the support of Dudley College of Technology.

Charlotte (Charlie) Pearson, aged 20, is a level 3 engineering maintenance apprentice whose own personality reflects that of her employer. It was her entrepreneurial spirit in proactively approaching the company for an Apprenticeship that first got her noticed. As Charlie explains:

"I had thought about a career in engineering at school but I took other options instead. I soon realised that these were not for me and decided to approach Hayley 247, a local company and one that I felt offered the right opportunities. As the only female engineering apprentice it can be a bit challenging but I'm not treated any differently and I'm learning so much from my mentor, Dave Heaton, who has over 40 years' experience. It's also good as I have other apprentices here and people my own age at Dudley College who I can relate to and learn with."

The company has three other apprentices, including James Bradford who recently completed his four-year Apprenticeship and is now a standalone engineer. Hayley 247 looked to ensure that all of its apprentices got a solid foundation to their learning and future careers so chose Dudley College as a partner; as operations manager, Kevin Berry, explains:

"We wanted to work with a local college and give our Apprenticeship programme an underpinning. We spoke to Iain Cole from the team at Dudley College and felt that they could really help us step up a gear. It's great that



our apprentices get to go to a college with impressive facilities to gain the theory and practical skills whilst being in the workplace with experienced engineers to learn from. As a business and as an industry we have to develop young talent to ensure we have the necessary skills for the future."

The average age in the company was 49 years plus which meant it had extensive experience and skills but the potential to lose these in future. The Apprenticeship programme sits at the heart of passing that know-how on. The company aims to have one or two new apprentices per year dependent on the progress of existing apprentices.

Hayley 247 has been more than impressed by their existing apprentices and with the contribution they have made to the business.

The perfect fit for Zero Point 8

Company: Zero Point 8 Limited

Location: Netherton

Employees: 49

Zero Point 8 could be summed up in one word – ‘transformation.’

It's not just the award-winning interior design, bespoke joinery and installation projects that the company undertakes to transform clients' spaces. The business itself has undergone its own transformation in recent years with a change of ownership and a clear vision taking it forward.

The new owner and managing director, Mark Baker, has built on the company's background of bespoke retail shelving, display and furniture manufacture combined with the skills and experience of the team to expand the business' horizons – both from a service and market point of view. Zero Point 8 now specialises in 'user-centred design' offering a complete end-to-end service, from design to installation for leading names in the commercial, hotel and hospitality, healthcare, retail, education and library sectors. So, on any given day the team may be working on projects from bars to coffee shop fitouts, hotel to care home bedroom furniture, shop to library displays.

Mark is acutely aware that the skills of his team are central to achieving the company's vision and continued success, as he explains:

“There is so much potential business in today's market and we have to be in the best possible position to take advantage of this. That means having the skills and know-how in place. There are now 50 of us, with 28 members of our team having nearly 600 years' combined experience. So, we also need to ensure we're investing in our future skills and transferring knowledge. I believe Apprenticeships are the ideal way to do this and help us fulfil our corporate social responsibility by giving young people in our local community career opportunities. It's a definite win-win.”

The company approached Dudley College of Technology to help in the establishment of a quality Apprenticeship programme that would result in employees with skills tailored to the business. Mark is pleased with the good relationship that has developed. The college team, led by Nick Thompson, has proved to be the perfect fit for



Zero Point 8 and the company now has five apprentices in various areas of the business recruited and supported by the college.

One of these apprentices is 19-year old Adam Davies, who is due to complete his level 3 finance Apprenticeship this year. He joined the company in 2017 having completed a first year of A levels but opting for more hands-on experience.

“I decided that the best way to launch my career was to combine practical experience with qualifications. I looked around and saw the opportunity at Zero Point 8. I attend Dudley College one day per week where I study practical accounting such as cashflows and statements – all things that directly relate to what I do in the workplace. I get a good variety of experience and, as we're a SME, I feel I can make a difference to the business which is really satisfying.”

Zero Point 8 plan to continue the planned expansion of their Apprenticeship programme to ensure apprentices joining the business have the skills fit for a promising future.

Fabrication & Welding (level 2/3)

Dudley Advance brings first-class engineering training facilities to the region, and offers employers the best opportunities to recruit and train a new generation of advanced engineers.

Welding & Fabrication

Offering tailored training for welders and pipefitters to include MIG, TIG, Coded and Pipeline Welding.

Our tutors have a wealth of industrial experience in fabrication and welding. Andy Whitehouse is the current UK World Skills Expert for Fabrication Skills.

Virtual welding area

Simulation environments are great for technical training and augmented reality brings a world of possibilities in the classroom by creating safe simulated environments for training purposes.

Apprenticeships available

Welding and Fabrication level 2 Apprenticeship framework

Welding and Fabrication level 3 Apprenticeship framework

Amada Equipment Area

The Amada equipment will be used by our fabrication and welding and manufacturing apprentices to complete tasks and assessments to awarding body standards as part of their Apprenticeship training. The facility includes:

- Amada CNC Quattro Laser machine which is used for precision cutting of sheet metal profiles
- Amada CNC Punch Press, which uses a turret of various shaped tooling to produce finished sheet metal components
- Amada Break Press, which is used to precision fold various sheet metals into shaped components.



This exciting world-class facility will revolutionise training. We share Dudley College's vision in helping young people acquire the necessary skills ensuring they are well placed to enter the workforce.

Ian Gardner, Head of Housing Maintenance, Dudley Council





Technical Training Courses for Engineers

We can tailor our training courses and offer flexible delivery models to meet the needs of your business.

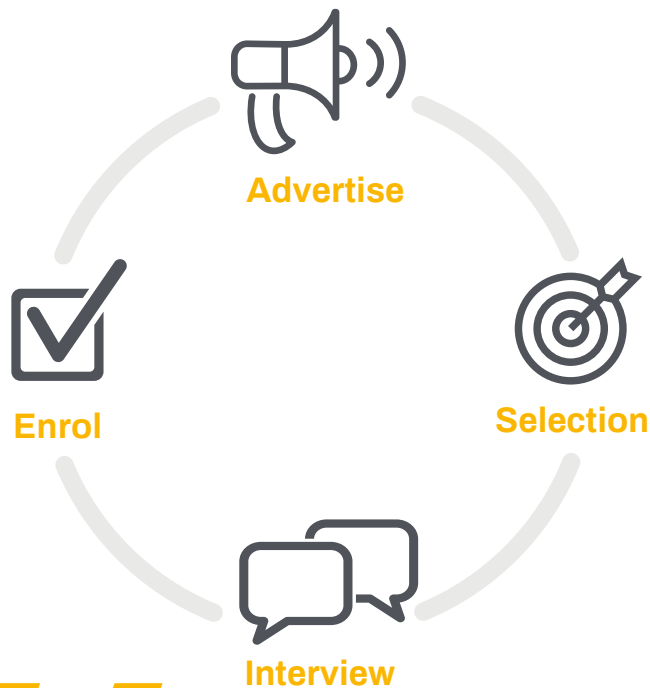
Dudley College of Technology offer engineers the following technical training courses:

- CAD – Introduction
- CAD – Intermediate
- CAD – 3D
- CAD – Solid Works
- CNC – Setting and Operating
- Milling
- Turning
- Understanding Hydraulics
- Understanding Pneumatics
- Control of Fluid Power Systems
- MIG Welding
- TIG Welding
- Resistance Spot Welding
- Virtual Reality in Construction (Introduction)
- Autodesk Revit Architecture Fundamentals (BIM)
- Autodesk Revit Architecture Essentials (BIM)

For more information, get in touch with our Business Managers today.

Call **01384 363808** or email **employerservices@dudleyco.ac.uk**

Free Apprenticeship Recruitment Service for Employers



Advertise

We will advertise your vacancy to our own learners and wider afield too, via the National Apprenticeship Service. Our free recruitment service means not only will we advertise your vacancy, but we will also refer pre-selected applications suitable for the role.

Selection

Our team will match and screen potential applicants to your specific needs and job role and will send their details direct to you. We measure candidates against your individual criteria (which could include qualifications such as GCSE English and mathematics) and make sure they understand the vacancy, the role, the commitment and your company's expectations of them.

Interview

Arranging interviews, particularly for smaller employers who may not have a full-time HR resource, can be a drain on management time, so we can do that for you too! You just have to look over the CVs and agree which candidates you'd like to meet.

Enrol

Leave all the paperwork to us. When your apprentice starts their employment we will enrol them onto the Apprenticeship and the journey to skilled and qualified staff begins.

With such a massive skills shortage at the top end, I will now only be looking at the finest young talent you have and offering them something special. Mentored and trained by other people here.

Having had our apprentice on board, this has changed the way we will do things here for good. Get them young, enthuse them – and make them feel special.

Bri-Mac Eng Ltd



Apprenticeship sector areas

**Dudley College of Technology offers a
diverse range of Apprenticeships in:**

Accountancy
Barbering
Beauty Therapy
Business Administration
Business Improvement Techniques
Construction, Trades & The Built Environment
Customer Service
Early Years, Children & Education
Engineering & Manufacturing
Hairdressing
Health & Social Care
Hospitality & Catering
IT
Management & Team Leading
Motor Vehicle Maintenance & Repair
Warehousing & Logistics

Get in touch!



Call us...
01384 363 808



Visit us online...
dudleycol.ac.uk



Email us...
employerservices@dudleycol.ac.uk



Find us...
The Broadway Campus
The Broadway
Dudley
DY1 4AS



**EMPLOYER
SERVICES**

hands-on
thinking
Since 1862