Apprenticeships and fully funded CPD Short Courses for the Engineering and Manufacturing Sector

Dudley College of Technology

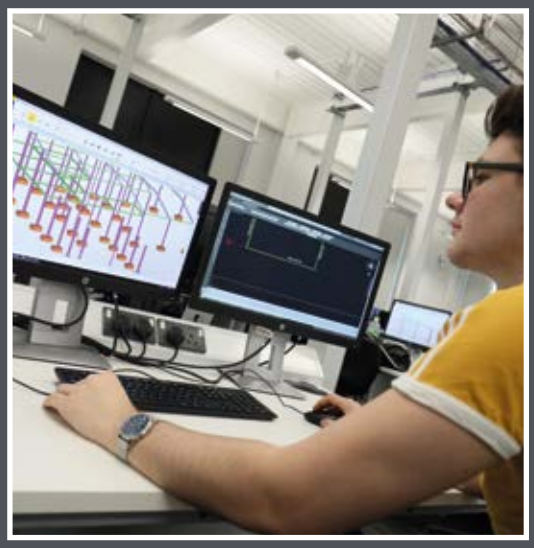
EMPLOYER SERVICES

The Queen's Anniversary Prizes
For Higher and Further Education
2019

There's never been a better time to take on an apprentice.

Fully funded apprenticeship training

Hiring an apprentice is an investment in the future of your business, plugging skills gaps and developing your key staff of the future. For the individual you hire, it is the start of an exciting journey that will equip them for an enjoyable and productive career



Cash Payments for 16-18 year old apprentices

- If you hire an apprentice aged 16-18 years old and have less than 50 staff the government will fund 100% of the cost of training
- You will also receive a £1,000 incentive payment For each 16-18 year old apprentice you employ

Fully Funded Apprenticeship Training*

We are working in partnership with the West Midlands Combined Authority and other Local Authorities to cover the full cost of training for any Apprenticeship at any Level, providing your business or your apprentice reside in the WMCA area.

This adds up to free Apprenticeship training. Apprenticeships costs range from £3,500 to £27,000 per apprentice, so this is quite a bargain.

*subject to approval by the WMCA

If you would like to hire an apprentice or take advantage of our Free Recruitment Service please contact **employerservices@dudleycol.ac.uk** or call **01384 363 808**

Engineering Operative

Apprenticeship Standard (Level 2)

Funding value:
£6,000

Duration:
12 – 18 months.

Entry Requirements:
GCSE Grade 3 or above in Maths and English .

Core occupational profile:

Engineering Operatives are predominantly involved in engineering operations which are key to the success of the Manufacturing and Engineering sector allowing employers to grow their business while developing a work force with the relevant skills and knowledge to enhance the sustain the sector.

The role covers a wide range of common and job specific skills sets that can be transferred across the manufacturing engineering industry sectors during the course of their careers.

An Engineering Operative will have the core requirements below;

An Engineering Operative will understand:

- How to obtain the necessary job instructions, engineering drawings and specifications and how to interpret them
- Relevant statutory, quality, environmental compliance procedures/systems, organisational and health and safety regulations relating to engineering operations
- Their individual roles and responsibilities within the organisation and the flexibility required to support the achievement of company targets
- Engineering operational practices, processes and procedures.

An Engineering Operative will be able to:

- Work safely at all times, complying with health and safety legislation, regulations, environmental compliance procedures and systems and other relevant guidelines
- Identify and deal appropriately with any risks, hazards, hazardous situations and problems that may occur within the engineering environment within the limits of their responsibility
- Select and use appropriate tools, equipment and materials to carry out the engineering operation
- Work efficiently and effectively at all times maintaining workplace organisation and minimising waste.

Dudley College of Technology currently offer the following two pathways at Level 2;

Pathway one

Fabrication and Welding

Engineering Operatives working within a fabrication role will have a knowledge of:

- Specific marking out and preparation techniques
- Different fabrication and joining techniques
- Specific safe working practices, isolation procedures and safe reinstating of equipment/system that need to be observed.

Skills:

- Shape the materials using the appropriate methods and techniques
- Join the materials using the appropriate methods and techniques
- Produce components which meet the specification requirements
- Carry out quality checks during and after the fabrication activities

The Amada equipment 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.

Pathway two

Mechanical Manufacturing

Engineering Operatives working within a mechanical manufacturing engineering role will have a knowledge of:

- Specific equipment operating parameters
- Mechanical manufacturing techniques
- Specific quality specifications for mechanical manufacturing operations

Skills:

- Plan the mechanical manufacturing operation before they start
- Mount and set the required work holding devices
- Produce individual components, sub-assemblies or completed assemblies using mechanical manufacturing techniques
- Carry out quality checks during and after mechanical manufacturing operations.

Engineering Technician

Apprenticeship Standard (Level 3)

Funding value:
£26,000

Duration:
36 – 48 months.

Entry Requirements:
Employers can set their own entry requirements but it is expected that the individual will have a minimum 5 GCSEs at grade 4 or above to include English and Maths in order to enrol.

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 Technician

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)

Metal Fabricator

Apprenticeship Standard (Level 3)

Funding value:
£27,000

Duration:
42 – 48 months.

Entry Requirements:
Employers can set their own entry requirements, but it is expected that the individual will have a minimum 5 GCSEs at grade 4 or above to include English and Maths in order to enrol.

Core occupational profile:

This occupation is found in the advanced manufacturing engineering and engineering construction sectors.

The broad purpose of the occupation is to carry out metal fabrication work using things such as rolled steel joists, columns, channels, steel plate and metal sheet etc.

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 out of metal. Fabricators can work alone or in teams, in factories or on operational sites. Fabricators use a large range of metals including steel, aluminium and titanium at a range of thicknesses from 0.5mm up to over 20mm. The size and weight of the fabrications can range from components that can easily be picked up by hand, to massive structures that require several cranes to manipulate.

In their daily work, an employee in this occupation interacts 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.

An employee in this occupation will be responsible for the quality and accuracy of their own work whilst ensuring it conforms to a relevant specification such as an engineering drawing or an international standard. Fabricators are also responsible for the health, safety and environmental (HS&E) protection of themselves and others around them.

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."

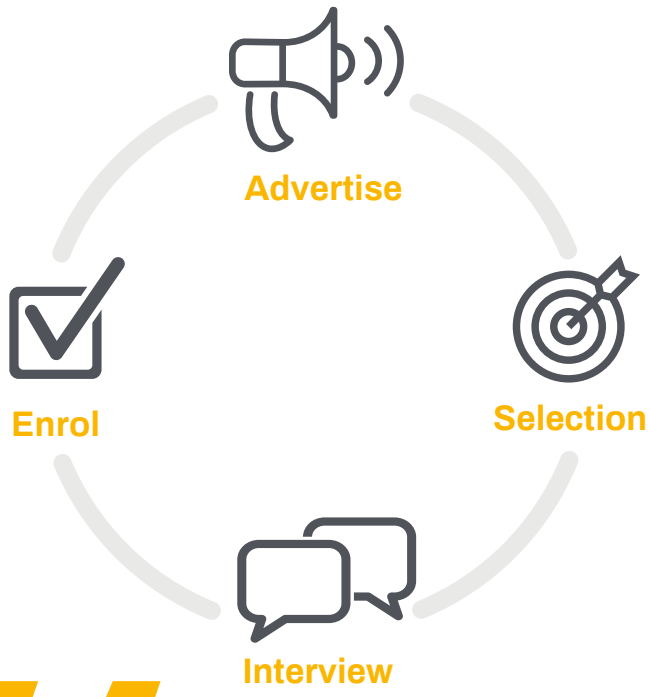
The company approached Dudley College of Technology to help in the establishment of a quality Apprenticeship programme that would result in employees with skills tailored to the business. Mark is pleased with the good relationship that has developed. The college team, led by Nick Thompson, has proved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

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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New Fully Funded Short Courses

Cutting edge professional development for you and your business

Dudley College of Technology

Introduction to Robotics (Beginner)

Gain the knowledge and understanding of how Industrial Robots are programmed and operated, using KUKA KRC4 Industrial Robots.

Duration
7 Weeks

Start Date
WC 25th April 2022

Structure
Practical workshop-based sessions at the IoT
3 Hours per week - evenings.

Content Covered
You will gain an understanding of:

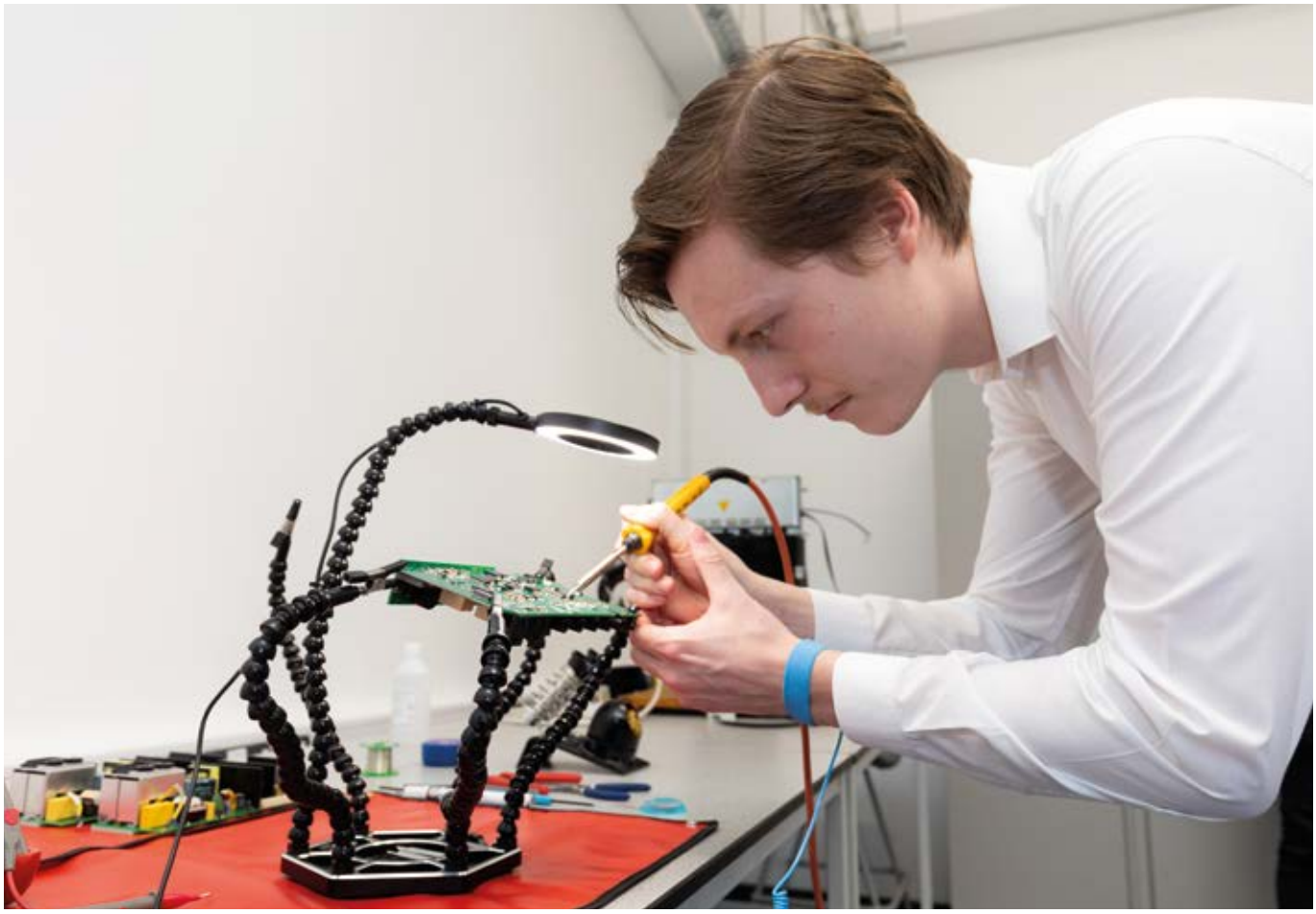
- Safety
- Operational Modes
- Manual Movement (“Jogging”)
- Coordinate systems (World, Base, Tool)
- Basic movement programming (PTP, LIN, CIRC)
- Pick and Place programming
- Overview of offline programming (KUKA SIM).

Who is this aimed at?
Adults either working within a relevant sector or want to upskill or complete CPD. Those that are interested in a career using Automation / Industrial Robotics.

Benefits of completing this course
Learners can use this to support progression in the workplace - this certificate confirms competency and could support progression into more senior/complex job roles.

Introduction to Robotics (Intermediate)

Gain a more detailed knowledge and understanding of how Industrial Robots are programmed and operated, using KUKA KRC4 Industrial Robots. This is intended for progression after successful completion of the Introduction to Robotics (Beginner) course.



Duration
10 Weeks

Start Date
July 2022

Structure
Practical workshop-based sessions at the IoT
3 Hours per week - evenings.

Content Covered
You will gain an understanding of:

- Safety
- Operational Modes
- Manual Movement (“Jogging”)
- Coordinate systems (World, Base, Tool)
- Basic movement programming (PTP, LIN, CIRC)
- Pick and Place programming
- Base Coordinate Programming
- Tool Coordinate Programming
- Loops (For..Next / While..Do)
- Conditions (If..Then, Case statements)
- Subroutines
- KUKA SIM offline programming & simulation.

Who is this aimed at?
Adults either working within a relevant sector or want to upskill, complete CPD. Those that are interested in a career using Automation / Industrial Robotics.

Benefits of completing this course
Learners can use this to support progression in the workplace - this certificate confirms competency and could support progression into more senior/complex job roles.

Introduction to CAD CAM

You will gain the knowledge and understanding of how to use CAD CAM to produce CNC programs in practical setting. The course is a hands-on practical approach to learn and apply the concepts of CAD CAM using industrial software and machine tools.

Duration
10 Weeks

Start Date
WC 25th April 2022

Structure
Practical workshop-based sessions at the IoT. 3 hours per week - evenings.

Content Covered
You will gain an understanding of:

- Creation of machining Geometry
- The use of Autodesk Featurecam to produce CAD CAM programs.
- Generation of simulation of machined parts
- Optimisation of the machining process
- Generation of tooling data and operation plans
- Generation of NC Programs
- Downloading and proving of CNC programs to create basic parts
- Workpiece setting and tooling.

Who is this aimed at?
Adults either working within a relevant sector or want to upskill or complete CPD. Those that are interested in a career in modern manufacturing.

Entry requirements
You would ideally be working in industry and have some prior machining experience. All applicants will be assessed on an individual basis on application. Can be used as a precursor to prepare for level 4 HNC courses.

Benefits of completing this course. Will this support progression in the workplace? Support new job opportunities or promotion?
Learners can use this to support progression in the workplace - this certificate can provide progression into more senior/complex job roles. Learners can use this as supporting evidence if they want to progress to a Level 4 qualification. This can also be used to gain additional credits to support progression onto degree pathways.

3D Modelling and Rapid Prototyping

This course is aimed at people who need to use CAD (Computer Aided Design) skills to create 3D parts and then give them an insight into how to produce the parts using a 3D printer.

Duration
7 Weeks

Start Date
WC 25th April 2022

Structure
Practical workshop-based sessions at the IoT. 3 hours per week - evenings.

Content Covered
Learners cover the principles and practical methods used in additive manufacturing (AM) and develop a component using additive processes.

Additive manufacturing (AM) processes are set to revolutionise the manufacturing industry and provide mass customisation of products and components for consumers. In this introduction, you will examine the technology and characteristics of the additive and finishing processes that are needed to manufacture a product or component. You will investigate design changes required to move from a traditional manufacturing process, such as machining and casting, to an additive process and the additional finishing processes that may be needed as a result. Finally, you will design a component that is suitable for manufacture using an additive process and manufacture your component using a 3D printer.

Who is this aimed at?
Adults either working within a relevant sector or want to upskill or complete CPD. Those that are interested in a career in modern manufacturing.

Entry requirements
You would ideally be working in industry and have some prior machining experience. All applicants will be assessed on an individual basis on application. Can be used as a precursor to prepare for level 4 HNC courses.

Benefits of completing this course. Will this support progression in the workplace? Support new job opportunities or promotion?
This course will support progression in the workplace and links to Btec RQF level 3 single unit Qualification Unit 45 Additive Manufacturing Processes.

You will learn safe working practices for AM processes, examine the technology and characteristics of additive manufacturing, gain and 8nderatnding of Design considerations for AM processes, develop a component using additive manufacturing processes safely and manufacture a component using an AM process.

Get in touch!

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EMPLOYER SERVICES

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