

BLACK COUNTRY & MARCHES

I	N	S	T	I	T	U	T	E	OF
T	E	C	H	N	O	L	O	G	Y

# New Fully Funded Short Courses

**Cutting edge professional  
development for you and your business**



# Cutting edge professional development

Specialising in higher level technical programmes, the Black Country & Marches Institute of Technology brings together the training offer of Dudley College of Technology in collaboration with key delivery partners including University of Wolverhampton, University of Worcester, InComm Training and Avensys UK Limited.

By providing industry-led training that is designed by employers with clear career progression the Institute will ensure young people and adults have the skills they need to build well-paid rewarding careers, while local businesses gain highly skilled

and productive workers. The IoT is proud to add these brand new programmes to our exciting offer. These Short Courses are fully funded (free) if you are aged 19+ and live in the West Midlands Combined Authority area.

BLACK COUNTRY & MARCHES

INSTITUTE 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.

---

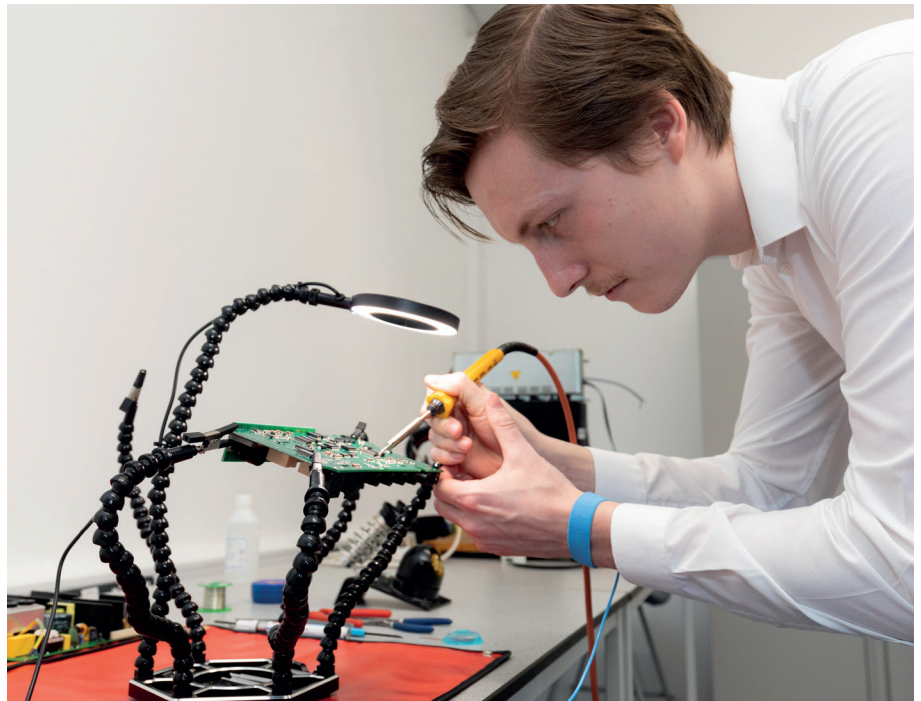
## Who is this aimed at?

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 understanding 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

For more information please contact Iain Cole at  
[iain.cole@dudleycol.ac.uk](mailto:iain.cole@dudleycol.ac.uk) or **01384 363 016** Mobile: **07841 919 528**