

Artificial Intelligence and Digital Technologies for Manufacturing and Engineering Skills Bootcamp

An immersive 10-week programme empowering professionals to master cutting-edge digital and AI technologies, enabling them to lead smart innovation, optimise engineering and manufacturing operations, and drive high-value impact in modern industry.

**Contact us:
0117 328 1357
Bootcamps@uwe.ac.uk**



Contents

3-4	Equipping Engineers and Technologists to Lead Smart Innovation in Digital Manufacturing
5	Who is it for?
6	What will I learn?
7-11	Session Outline
12	What is my Commitment as a Learner?
12	What is my Commitment as an Employer?
13	Programme Dates and Fees
14	Funding Eligibility

Equipping Engineers and Technologists to Lead Smart Innovation in Digital Manufacturing

The 10-week Skills Bootcamp delivers a comprehensive and employer-led programme that is aligned with the latest industry demands and mapped to RARPA and SFIA for quality assurance by targeting priority skills gaps in AI, Machine Learning, Data Analytics, Industrial IoT, Digital Twins, Smart Factory Systems (MES/ERP), Cybersecurity, and Agile Project Management.



These modules were specifically selected based on employer feedback and regional skills demand data.

Equipping Engineers and Technologists to Lead Smart Innovation in Digital Manufacturing

The AI and Digital Technologies for Manufacturing and Engineering Skills Bootcamp is designed to meet this need. It equips professionals and emerging leaders with the tools, confidence, and capabilities to harness smart technologies, drive process innovation, boost productivity, and lead digital transformation across the sector.



Our 10-week, 90%-funded programme

By investing in the digital and leadership skills of today's professionals, we're strengthening the future resilience, productivity, and innovation of the region's advanced manufacturing and engineering sectors.

If you're ready to lead digital transformation and unlock the potential of smart technologies, this Skills Bootcamp will help you get there.

Who is it for?

This Skills Bootcamp is ideal for individuals looking to upskill or reskill for careers in digital manufacturing and engineering. Whether you're a recent graduate, a technician aiming to move into a more digitally focused role, or a professional seeking to future-proof your career, this course is designed to meet your needs.



Benefits to you as an individual

- Gain hands-on experience with cutting-edge technologies such as AI, machine learning, digital twins, IoT, and smart factory systems
- Learn through a flexible mix of in-person workshops, online labs, and self-paced study
- Receive expert mentoring, career coaching, and support in building a professional portfolio
- Develop practical, industry-aligned skills to confidently step into real-world roles

Benefits to the employer

- Access a pipeline of digitally skilled talent ready to drive innovation and efficiency
- Benefit from training aligned with industry needs and cutting-edge systems (e.g., MES, ERP, cybersecurity, sustainability)
- Accelerate digital transformation and boost productivity by upskilling staff or hiring bootcamp graduates
- Future-proof your workforce with practical, job-ready digital capabilities

What will I learn?

Through this Skills Bootcamp, you will build the core skills to lead digital transformation in manufacturing and engineering, including:

Artificial Intelligence & Machine Learning

Data Analytics & Industrial IoT

Digital Twins & Smart Factory Systems (MES/ERP)

Cybersecurity for Industry 4.0

Agile Project Management for Tech-Driven Projects

Programme Structure

Live sessions



The programme is delivered through 10 full-day tutor-led interactive sessions, guiding you through key digital technologies and industry practices, and equipping you with tools and techniques you can apply immediately to real-world engineering and manufacturing challenges.

Mentorship and 1:1 support



You'll have access to mentorship from industry experts to provide a space to discuss personal experiences and learning as you utilise your new skills and evaluate their impact. Additionally, our Skills Bootcamp Team will be there to support you throughout the programme.

Peer network



Access to a peer network and industry contacts through the live sessions and roundtable discussion.

Developing an action plan



You'll develop an individual action plan to explore your goals, apply your learning and develop a clear roadmap to achieve them.

Session Outline

Session 1

Introduction to Industry 4.0 & Smart Manufacturing

Begin your journey into digital manufacturing with an overview of Industry 4.0. This session introduces key trends, technologies, and the evolving skills landscape. You will map your goals and initiate a Personal Development Plan, setting the foundation for a transformative learning experience.



Session 2

Machine Learning & AI in Manufacturing

Explore how machine learning and artificial intelligence are revolutionising automation and quality assurance. Through interactive demonstrations and workshops, you'll gain insight into predictive maintenance and AI-driven decision-making in modern manufacturing environments.

Session 3

Data Analytics & Industrial IoT

Dive into the world of real-time data and smart sensors, essential components of connected factories. This session covers how data is captured, transmitted, and analysed to improve performance and decision-making. You'll work with IoT datasets, build interactive dashboards, and explore how analytics drive efficiency, predictive maintenance, and innovation on the factory floor.



Session 4

Digital Twins for Manufacturing

Discover how digital twins are used to simulate and optimise manufacturing processes. In this session, you'll build a virtual model of a system, using it to test scenarios, identify issues, and improve performance. Gain hands-on experience with advanced simulation tools and explore the benefits of digital twins for diagnostics, testing, and innovation.

Session 5

Smart Factory Systems (MES, ERP, Robotics)

Explore the core systems that drive smart factories, including robotics, Manufacturing Execution Systems (MES), and Enterprise Resource Planning (ERP) platforms. Through simulations and group tasks, you'll design integrated workflows and see how these technologies work together to streamline production and improve coordination across operations.



Session 6

Manufacturing Systems Security in Operational Tech (OT)

Gain insight into the cybersecurity challenges facing modern industrial systems. This session explores SCADA systems, common vulnerabilities, and key risk management strategies. You'll also take part in a hands-on activity to create an Operational Technology (OT) risk register, building practical skills in identifying and mitigating cyber threats.

Session 7

Sustainability & Green Digital Skills

Discover how digital technologies can drive sustainable manufacturing. Learn to calculate carbon footprints, apply ISO 14064 principles, and use real-world tools and data to create a roadmap for greener operations. This session combines practical insights with hands-on activities to support environmental performance.



Session 8

Digital Project Management (Agile & Lean)

Master Agile and Lean methodologies for managing industrial projects. You'll use tools like Trello and Jira to plan sprints, conduct retrospectives, and showcase your project management skills in a manufacturing context.

Session 9

Embedding Learning into Practice & Portfolio Building

Prepare to transition your learning into the workplace. This session focuses on overcoming barriers, evidencing your skills, and refining your professional portfolio through coaching, mock interviews, and creative exercises like LEGO Serious Play.



Session 10

Employer-Led Challenge Project

Put your skills to the test in a real-world challenge set by an industry partner. Working in teams, you'll develop and pitch a solution to a panel, demonstrating your readiness for high-impact roles in digital manufacturing.

What is my Commitment as a Learner?

For our Skills Bootcamp you will be required to:

- ✓ **Attend all live sessions, held in-person**
- ✓ **Complete self-study activities between sessions**
- ✓ **Commit to your action plan and set goals for personal development**
- ✓ **Provide mandatory personal and employment data for up to six months following completion of the Skills Bootcamp**

What is my Commitment as an Employer?

Employers are able to utilise this Skills Bootcamp to upskill existing staff and provide development opportunities within their organisation. As an employer you will be expected to:

- ✓ **Release your employee(s) to attend all sessions**
- ✓ **Provide opportunity in the workplace for your employee to develop skills acquired from the Skills Bootcamp**
- ✓ **Attend a short online employer interview to understand the Skills Bootcamp requirements and the employer agreement document**
- ✓ **Pay the 10% programme fee contribution**
- ✓ **Within 6 months of completion, provide one of the following:**
 - A salary increase linked to new skills
 - An interview for a promotion or new responsibilities
 - Additional responsibilities aligned with their new skills
 - Evidence of role enhancement based on Skills Bootcamp learning

Programme Dates and Fees

September 2025 Cohort

Session 1	Thurs 25 Sep, 09:30-16:30	Frenchay Campus (in-person)
Session 2	Thurs 02 Oct, 09:30-16:30	Frenchay Campus (in-person)
Session 3	Thurs 09 Oct, 09:30-16:30	Frenchay Campus (in-person)
Session 4	Thurs 16 Oct, 09:30-16:30	Frenchay Campus (in-person)
Session 5	Thurs 23 Oct, 09:30-16:30	Frenchay Campus (in-person)
Session 6	Thurs 6 Nov, 09:30-16:30	Frenchay Campus (in-person)

Session 7	Thurs 13 Nov, 09:30-16:30	Frenchay Campus (in-person)
Session 8	Thurs 20 Nov, 09:30-16:30	Frenchay Campus (in-person)
Session 9	Thurs 27 Nov, 09:30-16:30	Frenchay Campus (in-person)
Session 10	Thurs 4 Dec, 09:30-16:30	Frenchay Campus (in-person)

Fees



This Skills Bootcamp is heavily subsidised, with the government covering 90% of the total cost for eligible learners applying through their SME employer. The full course fee is £3,947.20, but SME employers pay just 10% – only £394.72 per learner.

Please note: This Skills Bootcamp is currently open only to applicants sponsored by SME employers. If you're an independent learner or employed by a larger organisation, please contact us on bootcamps@uwe.ac.uk so we can notify you about future availability.

Funding Eligibility

Due to funding restrictions all learners must meet the following criteria:

- Be aged 19+ Live and/or work for an organisation based in Bristol, South Gloucestershire, Bath and North East Somerset or North Somerset (we will consider applicants living close to these boundaries)
- Not currently in full-time or part-time education
- Have the right to live and work in the UK
- Have not registered and attended (including partial completion) any other Skills Bootcamp in the current financial year from any provider
- Have your employer's agreement to attend and achieve the required outcomes



WEST | MAYORAL
OF ENGLAND COMBINED
AUTHORITY



The Skills Bootcamps Programme is funded and managed by the West of England Mayoral Combined Authority, and delivered by UWE Bristol (The University of the West of England) and Sustainable Ventures.



Apply Now

If you have any questions, please email the team at bootcamps@uwe.ac.uk or call 0117 328 1357