Robotics Engineer Apprenticeship

Course overview

Designed to meet the growing demand for skilled robotics engineers, this course equips learners to thrive in the Industry 4.0 era. With applications across logistics, automotive, and government sectors, students at MK:U gain hands-on experience and industry-relevant skills to lead innovation.

Benefits for business

➡ **Future-ready talent**
Gain access to highly skilled apprentices trained in the latest robotics and automation technologies.

➡ **Innovation and efficiency**
Enhance operational performance by integrating robotics.

➡ **Be a pioneer in the UK's robotics future**
Partner with England's first degree-level Robotics Engineering Apprenticeship to position your business at the forefront of industry innovation

Duration
33 months delivery + 7 months assessment

Cost
Fully funded by the Apprenticeship Levy.

Level
Level 6 - Degree Apprenticeship with an integrated BEng degree.

Core skills

Incident Response ⋮ Threats and Risk Management ⋮ System Design and Development ⋮
Ethical Hacking ⋮ Programming Foundations ⋮ Encryption Techniques

England's First

Degree-level Robotics Engineering Apprenticeship

Right for

➡ **Entry-level robotics enthusiasts**
Dive into robotics regardless of experience level.

➡ **End-users of robots**
Companies in logistics, defence and healthcare sectors can benefit from our course tailored to robotics. Gain skills essential for implementing robots effectively.

➡ **Career changers**
Whether you're from engineering, IT or another field, explore new opportunities in robotics.

➡ **Analytical thinkers**
Hone your problem-solving skills with our focus on critical areas.
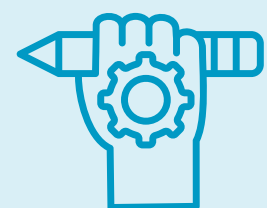
Entry requirements

- **96 UCAS points**, 3/C at A-level (or equivalent) or relevant experience.
- **Aptitude** for maths.

Why choose MK:U ?

Hands-on
Real-world experience through industry-relevant projects and training.

Problem-based
Case studies from diverse industries to ensure practical learning.

Professional skills
Curriculum combining technical and soft skills essential for career success.

Bespoke facilities
State-of-the-art facilities and extensive industry partnerships for specialised skill development.

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The MK:U robotics apprenticeship represents a pioneering leap forward in industry education. By combining cutting-edge curriculum with hands-on experience, it is poised to reshape the landscape of robotics training and prepare the next generation of innovators to lead the charge in this rapidly evolving field

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Remote Applications in Challenging Environments (RACE)
Part of UK Atomic Energy Authority (UKAEA)

RACE

Course details

Year 1

Hello Robotics

Introduction to Robotics, MK:U and fellow apprentices. Exploring the history of robotics, the diverse range of robots in today's world, and the latest advancements in robotics technology and their impact on various industries.

Engineering Maths and Programming

Introduction to essential mathematical concepts, including algebra, matrices and calculus. Practical programming skills using Python, with a focus on its application in programming robots.

Professional Skills 1

Develops career and personal skills, including emotional intelligence, creative thinking, personal branding, corporate social responsibility, and digital literacy.

Mechanics and Kinematics

Introduction to mechanical engineering concepts, including dynamics, materials engineering and kinematics.

Circuits and Signals

Fundamentals in electrical engineering, including how to design and build circuits. Introduction to signals processing and analysis.

Business Systems

Overview of the fundamental engineering skills related to business, including understanding organisational structures, budgeting, project management and risk assessments.

Year 2

C++ Programming

Exploring object-orientated programming to broaden skills in programming robots in other languages.

AI and Machine Learning

Learning essential skills in applying AI to robotics, from core principles to hands-on machine learning and advanced techniques like Reinforcement Learning.

Professional Skills 2

Develops leadership and professional skills, including negotiation, building high-performance teams, influencing others, and managing risk.

Ethics and Human Factors

Exploring ethical and social aspects of robot design, focusing on human interaction and responsible, socially conscious development.

Mechatronics

Combining skills in mechanics, electronics, and programming to build working robots, with an introduction to CAD and 3D printing.

Robot-system integration

Learning to integrate robotic systems into various environments, with an introduction to networking fundamentals and relevant protocols.

Year 3

Systems Engineering

Learning systems thinking and applying systems engineering to robotics, focusing on problem-driven solutions for the modern workplace.

Machine Sensing and Vision

Exploring how robots gather and process information from their surroundings. Learning about robot sensing techniques, including vision-based methods

Autonomous Systems

Appling AI and sensing to build autonomous systems with skills in navigation, manipulation, and decision-making.

Research project: "Robots in Action"

- Questions are provided by industry, tackling cutting-edge robot-related challenges, designed to showcase three years of skills development.
- This will be a group-based project where students will be required to investigate a particular specialist area and write a report outlining findings and solutions.

End Point Assessment

Self-directed and delivered individually.

Book a meeting to <u>find out more</u>