WMG TECHNICAL ENGINEERING APPRENTICESHIPS

Launch your career in engineering
Build on your academic studies, apply learnings in a highly innovative department at a top 10 UK University, and earn up to £18,538 per annum.

FOUR-YEAR MODERN TECHNICAL ENGINEERING APPRENTICESHIP PROGRAMME

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Overview

WMG is a department at the University of Warwick, delivering leading education and research to drive innovation in science, technology and engineering. We are an international role model for collaboration between academia and industry, working with organisations across the globe to create solutions through our expertise and portfolio of world class facilities.

Our modern Technical Engineering Apprenticeship Programme offers an opportunity for candidates of all ages to launch a career in engineering by combining academic studies (Level 4 college course) with real practical application over a structured four-year period.

Explore our pathways

- Electrification and Propulsion
- Materials and Manufacturing

As a Technical Apprentice at WMG, University of Warwick you will have the scope to choose your area of focus based on our two available pathways. As well as working on specific real-world projects, you will also have the flexibility to rotate across the main disciplines and sub-departments within your chosen pathway.
A well-established programme
The Technical Engineering Apprenticeship Programme was established over 12 years ago, and so we have a well-refined and structured way of ensuring that our Technical Apprentices experience the breadth and depth of engineering, manufacturing and technical projects that WMG, University of Warwick delivers on a daily basis. The programme will allow you to enhance your skills and knowledge by joining an exciting, dynamic and friendly technical team and an ever-growing apprentice network, where you will receive training in typical engineering practices.

The areas covered during the apprenticeship will be closely linked with the disciplines covered by your Level 4 college course, delivered in collaboration with Warwickshire College Group.

Earn while you learn
Our programme offers a competitive wage for our apprentices:

- Year 1: £9,570 per annum
- Year 2: £16,911 per annum
- Year 3: £17,706 per annum
- Year 4: £18,538 per annum

Programme schedule
Monday to Friday, 8.00 am - 16.30 pm (36.5 hours per week)
The programme includes day release to Warwickshire College Group for theoretical and practical learning (Rugby or Trident Centre). There is a requirement to travel to both sites a maximum of two days per week.

Delivered teaching from college changes dependent on previous experience. The HNC is essential learning.
Breakdown of activities when at work

- **Technical Apprenticeship Placement Programme**
  - Up to 16 placements (four a year)
  - Feedback from mentors in each area
  - Potential to specialise in areas of interest
  - Exposure to multiple processes and manufacturing techniques
  - Up to date research activities/projects
  - Multi skilled by the end of the four years

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<th>WCG College Breakdown</th>
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<td>Apprenticeship Year</td>
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(*Number of days at college per week)

Available placements

- **Placements Found on Both Pathways**
  - Basic Machine Training and Work Requests
  - Health and Safety and Compliance
  - CIMAT - (Additive Layer Manufacturing and Metrology)
  - Automation Systems Group
  - Engineering Student Projects - (Formula Student, EVGP, Robot Rescue)
  - Materials Preparation and Optical Microscopy
  - Student Laboratory Support

- **Electrification and Propulsion**
  - Battery Cell Testing and Instrumentation
  - Pre-Age and Long Life Testing
  - Battery Abuse and Vibration Testing
  - Battery Scale Up - (Mixing, Coating Drying, Formulation)
  - Vehicle Energy Facility (Dyno’s)
  - Electrochemistry Wet Labs
  - Battery Recycling
  - Battery Forensics
  - Automation System Group
  - Laser Welding and Battery Pack Manufacture.

- **Materials and Manufacturing**
  - Advanced Machining Techniques - (CNC and EDM)
  - Advanced Composite Research
  - Nanocomposites
  - Steel Processing and Hot Works
  - Material/Mechanical Testing
  - Materials Characterisation
  - Automation Systems Group
  - Electron Microscopy
  - Intelligent Vehicles
  - Polymer Processing
Pathways and opportunities

Academic opportunities
The Level 4 training programme is provided by Warwickshire College Group throughout the four years of the apprenticeship, encompassing:

- Higher National Certificate in Manufacturing Operations or Electrical Engineering (Theory)
- 6x Foundation Competencies (Manual, Physical Skills)
- End Point Assessment (Portfolio and Evidence)
- Professional Engineering Institution Recognition

The highest qualification to be achieved from the Technical Engineering Apprenticeship is Level 4 (HNC in Engineering/HNC in Manufacturing Operations or HNC in Electrical Engineering).

Achievement of this standard is designed to be recognised by relevant Professional Engineering Institutions such as the Institute of Mechanical Engineers (IMechE) and the Institute of Engineering and Technology (IET) at the appropriate level of professional registration (EngTech).

Electrification and Propulsion pathway
Electrification is a key technology to achieving reductions in emissions, and so this pathway focuses on providing state-of-the-art training across electricity generation, electrification of transport, energy storage, battery technologies, battery recycling, battery manufacturing, battery abuse and electrical machines, systems and motors. The training received will help you develop skills in typical engineering practices with a particular focus on propulsion and electrical research.

One of Europe’s largest energy research facilities
On this pathway, your Technical Engineering Apprenticeship will be based at one of Europe’s largest energy research facilities, our Energy Innovation Centre (EIC).
Materials and Manufacturing pathway

We’re focused on delivering transformational results in both materials and manufacturing processes to help create a cleaner future and sustainable economy. We strive to develop sustainable materials from next generation solutions, and improve manufacturing processes that will shape the future.

The work-based element of the training will vary right across the spectrum from motorsport to 3D Printing. Within the Materials and Manufacturing pathway, you will have the opportunity to receive training in engineering practices with a particular focus on helping you develop skills in advanced manufacturing, material processing technologies, product design, composite light weight material engineering, vehicle powertrain testing, CNC machinery, lasers, robotics, coordinate measuring machines, advanced machining, additive layer manufacturing, material testing, computer aided design, metrology, mechanical testing, automation, laser processing/welding, fabrication and general safe workshop practice.

State-of-the-art facilities

WMG at the University of Warwick has the largest footprint at the University campus. This pathway provides the opportunity to work on real-world projects spanning multiple state-of-the-art facilities, including our International Manufacturing Centre, Materials Engineering Centre and Advanced Materials Manufacturing Centre.

Requirements

- A minimum of 5 GCSE (or equivalent) at grade 4 or above, including Maths, English, Science and preferably Design & Technology
- An aptitude for electro/mechanical projects
- An interest in engineering and electro-mechanical systems and/or mechanical objects of varying materials
- Logical approach to solving problems
- Good written and oral communication skills
- Good IT skills
- Evidence of commitment to learning
- Willingness to undertake further training as required
- Ability to work as part of a team
Our Technical Engineering Apprentices

Our Technical Engineering Apprentices contribute towards solving some of the most pressing industrial, environmental, societal and economical challenges throughout electrification and manufacturing sectors. Here, current and past Technical Engineering Apprentice cohort members reflect on their working environments, collaborative ethos, career aspirations and the real-world projects embroiled within the modern Technical Engineering Apprenticeship programme at WMG, University of Warwick.

Elias Khimasia
4th year Technical Engineering Apprentice, Electrification and Propulsion, WMG

“For me, this programme was the most dynamic apprenticeship out there. Nowhere else is offering this range of experiences. You can experience up to 16 placements over the course of the apprenticeship, developing new experiences each time. I have found an area of specialism for me, which is within the Automation Systems Group. The programme provides an effective transition into employment at WMG, University of Warwick. By the time I finish the programme, it will only take me one more year to graduate with a degree, with studies funded and a salary paid throughout the entire programme. From this apprenticeship, I have become a valued skilled employee.”

Thomas York
1st year Technical Engineering Apprentice, Electrification and Propulsion, WMG

“I am currently working on a variety of different interesting projects. It is my first year on the programme, but I have great first impressions and can see how my involvement in the programme will contribute to the future of industry.”

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Max Raybone
Engineering Technician – Automotive Composites Research Centre, WMG

“I completed the four-year Technical Engineering Apprenticeship programme at WMG, University of Warwick and I now work in the Automotive Composites Research Centre as an Engineering Technician, creating structural components and solving problems for high profile industrial partners. The ‘Materials and Manufacturing’ Technical Engineering Apprenticeship Programme provided a great balance of professional experience and academia, and I had the opportunity to guide my focus area in my fourth year in alignment with permanent positions that were available within WMG at the time. Since finishing my Technical Engineering Apprenticeship, I’ve also gone on to complete a fully funded BEng degree at the University.”

Joshua McIlkenny
4th year Technical Engineering Apprentice, Materials and Manufacturing, WMG

“Throughout the programme I have applied what I have learned for industrial partners. This is the balance between academic and practical application. I am currently in the Microscopy department within WMG, working with global companies. The programme has enabled me to get hands-on with projects that have a real-world context. This has been a great motivation for me.”

Ehm Altaf
Electrification Technician, Energy Innovation Centre, WMG

“I started as a Technician at WMG in September 2021 having completed the four-year Technical Engineering Apprenticeship Programme. I felt that I had lots of options at the end of my apprenticeship as I managed to gain experience throughout a lot of different groups across WMG that all did different things. This enabled me to sample the areas that I was most interested in. I tried a few projects related to electrification and wanted to stay.”
Oliver Isles
4th year Technical Engineering Apprentice, Electrification and Propulsion, WMG
“The programme provides the opportunity to gain experience in lots of different sectors of engineering, from mechanical and electrification to material science. With a new placement every three months, it has kept things fresh on the programme for me. This also creates opportunities that would otherwise not be available. This has also allowed me to get industry experience in a varied way. Upon completion of my programme, I’m looking to establish a career in the battery sector.”

Divyesh Mistry
Mechanical Technician, WMG
“I completed the programme and started my new role in September 2021. I now work in Battery Scale-Up at WMG. The programme offered a diverse range of experiences, with a mix of academic college work and practical application. The programme enables your voice to be heard, and I had the chance to say what I enjoyed most, which therefore meant that I could shape where I wanted to be. There is also a great social element to the programme with the fellow Technical Engineering Apprentices.”

Joseph Ward
Mechanical Technician, WMG
“I have had the chance to establish new skills in areas such as machine tools, CAD/CAM and 3D Prototyping. I enjoy these areas, and have also seen the balance between Research and Development and servicing industrial clients at WMG. There is a variety of work available that meets immediate industry demand. I have also done a HND in General Engineering, which was funded through WMG, and the programme was a great pathway to progression.”

Matthew Swann
3rd year Technical Engineering Apprentice, Electrification and Propulsion, WMG
“The variety included within the programme, from mechanical to electrical engineering, enabled me to gain experience in areas that I didn’t know existed. This also showed me where the future work will be. I have been able to get hands on with leading cutting-edge equipment, which has been so unique. I have worked with colleagues who are specialists in these areas.”

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Edward Hodierne  
4th year Technical Engineering Apprentice, Materials and Manufacturing, WMG

“The programme has provided me with the opportunity to work with partners high up in industry and professors at the University. I have developed new skills in a professional environment and have particularly enjoyed conducting Research and Development around composing materials together. If I had any advice for someone thinking about doing the programme, it would be to do what you think is right, and trust in that.”

Jed Brown  
3rd year Technical Engineering Apprentice, Electrification and Propulsion, WMG

“I have completed a series of different mechanical and electrical placements within my programme, including leading facilities such as the battery abuse chambers, providing a variety of opportunities and the chance to meet lots of different colleagues. I feel as though I have freedom in terms of where my journey goes during the rest of the programme and beyond.”

Zach Clarke  
Mechanical Technician, WMG

“Having completed the Technical Engineering Apprenticeship programme at WMG, I started my role as a Mechanical Technician in September 2021. A core benefit of the programme is the combination of academic and real placements across the organisation, which allowed me to apply the theoretical knowledge that I acquired at college in a real context. A range of my skills that I have developed during my apprenticeship are transferable to a range of engineering disciplines. This opened many opportunities for me upon completion of my apprenticeship.”
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