



Universities



Automotive & Transport

“

This is a sector where we lead the world. Autonomous vehicles are being tested in Birmingham, electric taxis manufactured in Coventry, and Range Rovers are sold around the globe.”

Andy Street, Mayor of the West Midlands

Key Messages

40% of all cars exported from the UK are made in the West Midlands.

The West Midlands is the UK's premier centre for automotive industry, with firms in the area employing 44,000 people.

More than 430 specialist automotive firms are located in the region.

The West Midlands is home to world-famous brands including Jaguar Land Rover and Aston Martin.

University Specialisms

Our universities maintain close links with industry partners:

- Leading the industry's transition to a low-carbon future for all modes of transportation
- Strengthening the skills of the next generation of automotive & transport engineers through applied work and access to the latest technology.

Universities advance our understanding of:

- Carbon reduction through innovative lightweight materials research
- Intelligent transport systems
- Connected and autonomous vehicle competence and cyber security
- Energy storage and e-drives for electric vehicles.

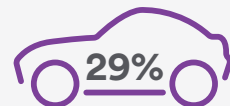


Thriving Cities

Birmingham, Coventry and Wolverhampton



A £92bn Economy



29% of all GB automotive sector employment (44,000 jobs) is concentrated in the West Midlands

15,000 Engineers

Students following technology & engineering courses each year



West Midlands Growth Company

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Key University Facilities/Projects



Aston University

European Bioenergy Research Institute (EBRI)

- Commissioned the UK's first permanent electric vehicle to grid (V2G) charging system.
- Next generation of electric vehicle charging infrastructure allows power to flow both in the traditional way (grid to vehicle) and in reverse (vehicle to grid).
- Intelligent control for distributed energy resources that continuously optimises when the charging station consumes and returns power to the network.



Birmingham City University

Institute for Sustainable Futures

- State-of-the-art driverless car development to cut congestion, reduce emissions and improve transport access for people who are blind, visually impaired or have problems with mobility.
- Improving the safety, reliability and integration of autonomous vehicles into an urban environment. Partnership with Westfield Sportscars Ltd, Heathrow Enterprises Ltd, Fusion Processing Ltd, Creative Example Ltd and Conigital Ltd.
- Exclusive partnership with Meridian Lightweight Technologies UK, the world's largest producer of magnesium components, to develop new applications that help reduce transport carbon emissions.



Coventry University

Institute for Advanced Manufacturing and Engineering

- Collaboration between Coventry University and Unipart Manufacturing Group. This 'faculty on the factory floor' brings together the best in academia, industry and R&D in a 'live' manufacturing environment.
- State-of-the-art robotic automation, forming, joining, analysis and simulation, metrology and product verification technology.

National Transport Design Centre

- Investigates influences on future vehicle design to create safe and sustainable transport solutions fit for the cities of the future.
- The NTDC houses equipment such as precision CNC milling machines for scale model creation; a range of 3D printing technologies; large bed graphics printers and structured white-light 3D scanning for reverse engineering.

Centre for Connected Autonomous Automotive Research

- Research and testing of autonomous vehicles in partnership with HORIBA MIRA, a global leader in advanced vehicle engineering and product testing. Situated at the HORIBA MIRA headquarters in Nuneaton.
- Works with other leading industry players to test connected vehicle technology in real-world conditions.

School of Art & Design

- Largest and longest established Automotive & Transport Design programme in the UK.

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University of Birmingham

Vehicle Technology Research Centre

- Researches new combustion and energy conversion technologies, alternative fuels and hydrogen to create clean, efficient and sustainable power sources for propulsion and stationary use.
- Vehicle Dynamics Laboratory has strong links with UK and international automotive businesses, including Jaguar Cars, Goodyear Tyres Technical Centre and Michelin Americas R&D Corp.

Birmingham Centre for Railway Research and Education

- Europe's largest rail research group.
- Cutting-edge research into aerodynamics, power and traction systems, condition monitoring and environmental and geotechnical engineering.
- Systems development including network optimisation and real-time traffic management.
- International industry links include partnerships with SNCF in France, Central Japan Railways and Guangzhou Metro in China.



University of Warwick

National Automotive Innovation Centre

- The largest research centre of its kind in Europe, with 33,000m² dedicated to automotive innovation.
- Focused on the long-term challenges outlined by the UK Automotive Council, including electric vehicles, carbon reduction, smart and connected cars.
- A partnership between WMG at the University of Warwick, Jaguar Land Rover and Tata Motors UK.

Advanced Propulsion Centre UK

- Forging partnerships between entrepreneurs and industry, helping to bridge the gap between concepts and commercialisation.
- £1bn to invest over ten years in collaboration with automotive industry partners.



University of Wolverhampton

Centre for Engineering Innovation and Research

- Advanced Materials and Composites research into the development of lightweight material for automotive applications.
- Advanced engineering research and development of additive layer manufacturing, metal cutting and high-speed machining, and materials processing.