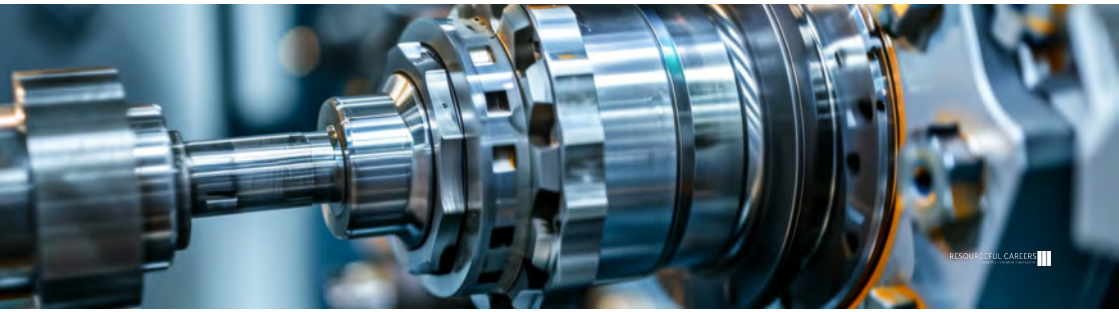
THE CAREERS & ENTERPRISE COMPANY TEES VALLEY

LABOUR MARKET INFORMATION

ADVANCED MANUFACTURING & ENGINEERING



TEES VALLEY

WHAT IS THE ADVANCED MANUFACTURING & ENGINEERING SECTOR?

The advanced manufacturing and engineering sector is all about using the coolest new technology to make and improve products. Think robots, 3D printers, and smart machines that help build everything from cars to gadgets.

This sector covers tons of industries, like aerospace and electronics, and is all about making things faster, better, and more innovative. It's a key player in driving technological advancements and creating exciting new products.

ADVANCED MANUFACTURING & ENGINEERING

DID YOU KNOW...

Tees Valley is a global leader in **advanced manufacturing and engineering**, home to multinational businesses operating in **manufacturing, engineering and process industries?**

Teesworks, the site of the former Redcar Steelworks, is the largest and most connected industrial zone in the UK and is expected to **create up to 20,000 jobs**.

Approx...

19,000

people are employed in the **advanced manufacturing and engineering sector**.

Estimated...

20,000

more **people needed by 2026** for jobs related to advancements in **technology, increased automation and investments in high value manufacturing processes**.

The sector makes up

7.4%

of jobs in Tees Valley and is worth

£3.8 billion

TEES VALLEY

Office for National Statistics

ADVANCED MANUFACTURING & ENGINEERING

WHAT JOBS COULD YOU DO?

AUTOMATION ENGINEER

3D PRINTING TECHNICIAN

MAINTENANCE FITTER

PRODUCTION MANAGER

ERGONOMIST

MECHANICAL ENGINEER

ENERGY ENGINEER

DESIGN & DEVELOPMENT ENGINEER

MATERIALS SCIENTIST

WHERE ARE THE JOBS MOST NEEDED?

- AUTOMATION & ROBOTICS
- PRODUCT DESIGN
- MAINTENANCE ENGINEERING
- PROCESS OPTIMISATION
- ENERGY EFFICIENCY
- QUALITY ASSURANCE
- DATA & INFORMATION TECHNOLOGY
- 3D PRINTING & ADDITIVE MANUFACTURING

LOCAL EMPLOYERS INCLUDE...

DURATA Your Power Safe In Our Hands
TEES COMPONENTS
PARALLOY & FVC
TEESAMP
Jacobs
Francis Brown
AtkinsRéalis
KP
Sir Robert McALPINE
Quorn
WILTON INTERNATIONAL
Balfour Beatty
intelect
glanbia PERFORMANCE NUTRITION

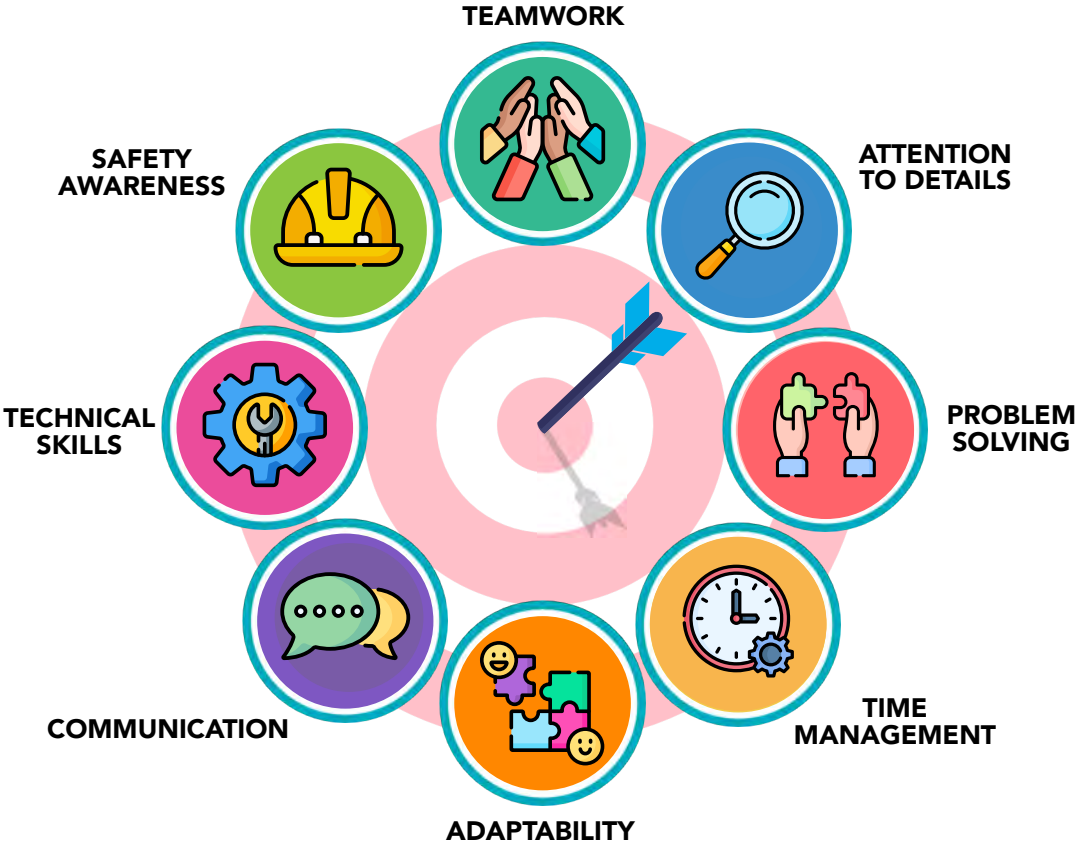
TEES VALLEY

ADVANCED MANUFACTURING
& ENGINEERING

TEES VALLEY

WHAT SKILLS CAN HELP YOU?

Advanced manufacturing and engineering jobs require diverse skills, and adapting your current abilities is key to success.



ADVANCED MANUFACTURING & ENGINEERING

TEES VALLEY

SKILLS IN ACTION

TEAMWORK
Collaborating with others to build a new product.

ATTENTION TO DETAIL
Checking a product to ensure it meets quality standards.

PROBLEM SOLVING
Fixing a machine that's not working properly.

TIME MANAGEMENT
Completing tasks within set deadlines to keep production on track.

ADAPTABILITY
Learning to use new technology or tools as they are introduced.

COMMUNICATION
Explaining a technical issue to a colleague clearly.

TECHNICAL SKILLS
Operating advanced machinery like CNC machines.

SAFETY AWARENESS
Following safety protocols to prevent accidents while operating heavy equipment.

ADVANCED ENGINEERING & MANUFACTURING

TEES VALLEY

WHAT QUALIFICATIONS CAN HELP YOUR CAREER?

GCSE SECONDARY SCHOOL

Mathematics: Essential for calculations, technical design, and problem-solving in engineering and manufacturing.

Physics: Key for understanding mechanics, energy systems and material properties.

Design & Technology: Useful for developing practical skills in product design, modelling and manufacturing techniques.

Computer Science/IT: Important for working with automation, digital systems and engineering software.

Engineering: Provides foundation knowledge in mechanical and electronic systems.

FURTHER EDUCATION

A-LEVELS

Mathematics: Crucial for engineering calculations, modelling and technical analysis.

Physics: Builds understanding of forces, motion, and energy systems crucial for advanced manufacturing and engineering.

Design & Technology: Focuses on practical skills in designing and testing engineering solutions.

Computer Science: Useful for understanding software, automation and digital manufacturing technologies.

SCAN OR CLICK THE QR CODE TO EXPLORE THE DIFFERENT PATHWAYS

VOCATIONAL COURSES

Engineering: Covers mechanical, electrical and advanced manufacturing principles with practical applications.

Manufacturing Engineering: Focuses on production processes, materials science and quality control.

Design Engineering: Includes product design, prototyping and manufacturing techniques.

T-LEVELS

Design and Development for Engineering and Manufacturing: Specialises in mechanical, electrical and advanced manufacturing technologies with a focus on industry design and development skills.

Design & Development for Engineering and Manufacturing: Focuses on product design, prototyping and engineering development.

Maintenance, Installation, and Repair: Covers maintaining and repairing complex engineering systems and machinery.

APPRENTICESHIPS

Engineering Technician: Gain hands-on experience in mechanical, electrical or manufacturing engineering.

Manufacturing Engineer Apprentice: Work on production processes, materials handling and quality control.

Design Engineering Apprentice: Learn about product design, prototyping and manufacturing techniques.

Robotics Technician: Develop skills in installing, maintaining and programming robotic systems.

Click or **Scan the QR code** to visit the IfATE Occupational Maps to explore the different Apprenticeships available

HIGHER EDUCATION

UNDERGRADUATE DEGREE

Mechanical Engineering (BEng/BSc): Focuses on designing, developing, and testing mechanical systems and products.

Manufacturing Engineering (BEng/BSc): Specialises in production processes, materials and manufacturing technologies.

Electrical Engineering (BEng/BSc): Covers electrical systems, automation, and control technologies used in manufacturing.

Industrial Design (BDes/BSc): Concentrates on designing products with a focus on functionality and manufacturability.

Robotics Engineering (BEng/BSc): Studies the design and application of robots and automation systems in manufacturing.

POSTGRADUATE DEGREE

Masters in Advanced Manufacturing (MSc): Focuses on modern manufacturing techniques, smart factories and production efficiency.

Masters in Mechanical Engineering (MSc): Advanced study in mechanical systems, design and manufacturing.

Masters in Robotics (MSc): Specialises in robotic systems, automation and intelligent manufacturing technologies.

Masters in Industrial Design (MSc): Focuses on advanced product design and manufacturing processes.

TEES VALLEY

MORE INFORMATION

Scan or click on the QR codes to become more informed about the different jobs and education and training options available to you.

TEES VALLEY JOBS

Explore graduate roles, apprenticeships, or volunteering opportunities.

SCAN ME

NATIONAL CAREERS SERVICE

Explore over 750 different careers. Find out what a job involves and if it's right for you.

SCAN ME

BBC BITESIZE

Explore job profiles for tips and advice from young people working in the sector.

SCAN ME

TEES VALLEY KEY SECTORS

Explore what's happening across other sectors in the Tees Valley region.

SCAN ME

WHAT NEXT?

TEES VALLEY

Name:

Date:

I would like to be:

The reasons I chose this are:

Qualifications and training required:

Skills I have:

Skills I need to develop:

My next steps are:

Reviewing my progress: