



BD

Advancing the
world of health



BD APPRENTICESHIPS



WHAT IS AN APPRENTICESHIP?

An apprenticeship means that you have a job that includes gaining recognised qualifications and essential skills whilst you are working and earning a wage.

Apprentices work alongside experienced colleagues and learn on the job to help gain job-specific skills.

Every apprentice follows a programme of study. By the end of your apprenticeship you will have the qualifications, skills and experience which match exactly what BD wants.

WHO FUNDS THE APPRENTICESHIP?

Apprentices do not pay anything towards their apprenticeship. BD will pay for the apprentice's training as well as paying them a salary.

HOW LONG DOES IT TAKE?

BD's apprenticeship is a 4 year programme gaining experience in a manufacturing environment.

QUALIFICATIONS REQUIRED

Candidates will usually have achieved GCSEs at grades 9 to 4 (A* to C or level 2 equivalent) in four subjects, including English, Mathematics and a Science. Additional experience will be taken into consideration and each applicant will be looked at individually.



HOW IS LEARNING ACHIEVED THROUGH THE APPRENTICESHIP?

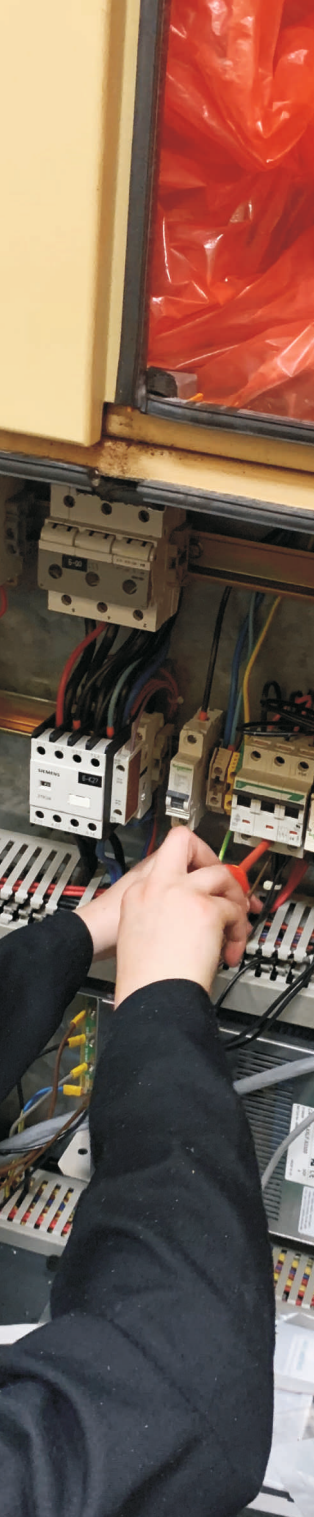
Our apprenticeships are designed so they offer a structured programme that gives the apprentices the skills they need to do a job well. Along the way there are targets and checks to make sure each apprentice is supported and is making progress.

The first year of the programme is spent mainly in Cornwall College at their premises in Plymouth. After this first year the apprentice's time is then spent both in the workplace and at college. Apprentices complete the off-the-job training on day release. The amount of time they spend at college varies each year.

The outcome of this blended learning method will be a recognised qualification for our apprentices which will be useful in their job and help them succeed in their future career.

WHAT ARE THE ADVANTAGES OF AN APPRENTICESHIP?

There are many advantages doing an apprenticeship; some of the main benefits include paid employment, support during training and working towards professional qualifications.



APPRENTICESHIP QUALIFICATIONS

Our apprenticeships follow a combined on and off the job programme leading to a Mechatronics Maintenance Technician Engineering Level 3 Standard.

After a period of foundation skills and technical knowledge development all apprentices will be required to achieve the following qualifications:

- Level 2 Diploma in Advanced Manufacturing Engineering (Foundation Competence)
- Level 2 Award for Foundation Phase Gateway Assessment

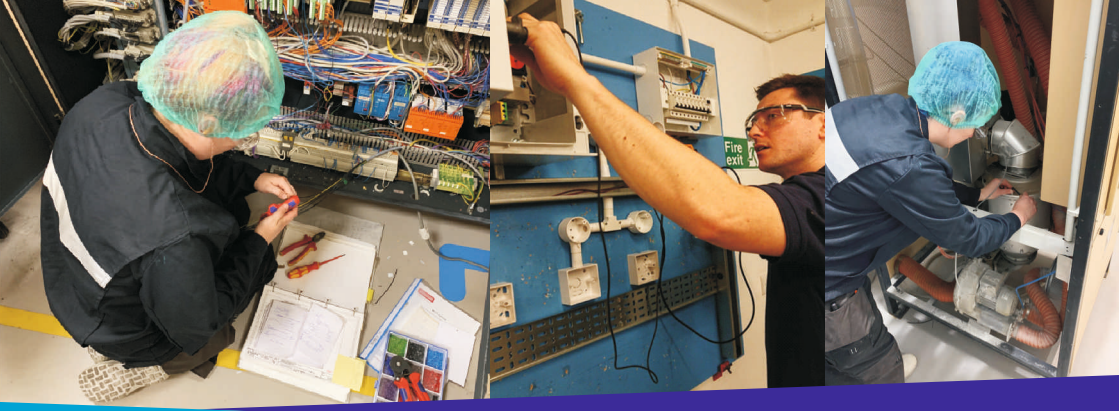
After a further period of skills and technical knowledge development all apprentices will be required to achieve the following qualifications:

- Level 3 Diploma in Advanced Manufacturing Engineering (Development Competence) – Mechatronics Maintenance Technician
- Level 3 Diploma or Extended Diploma in Advanced Manufacturing Engineering (Development Knowledge)
- Independent Assessment of Professional Competence – Externally assessed

CORNWALL COLLEGE

Our training provider is Cornwall College. The training takes place at their premises in Plymouth, The Engineering Skills Centre, Sisna Park, Estover, Plymouth, PL6 7FH.





QUALIFICATION DETAILS: First 12 months – Foundation Phase

Level 2 Diploma in Advanced Manufacturing Engineering (Foundation Competence)

Studied 4 days a week over 12 months at College.

Units of study:

- Complying with statutory regulations and organisational safety requirements
- Working efficiently and effectively in an engineering environment
- Using and communicating technical information
- Conducting business improvement activities
- Producing components using hand fitting techniques
- Maintaining mechanical devices and equipment
- Maintaining electrical equipment/systems
- Wiring and testing electrical equipment and circuits
- Wiring and testing programmable controller based systems
- General turning, milling and welding applications

Level 2 Award for Foundation Phase Gateway Assessment

Assessed after the completion of the Level 2 Diploma in Advanced Manufacturing Engineering (Foundation Competence) qualification – (normally 12-18 months after the start of the apprenticeship programme).

Assessment details:

The Foundation Phase Gateway Assessment is intended to assess the apprentice's individual ability to apply the skills, knowledge and behaviours they have learnt and developed within the foundation phase of their apprenticeship. Assessment comprises of a practical scenario and a set of related tasks. The scenario will be based on a typical situation that is likely to occur in the workplace. The tasks will provide explicit instructions about the activities that the apprentice will need to complete in a way that demonstrates skills, knowledge and behaviours they have learnt and developed within the foundation phase of their apprenticeship.

End of the Foundation Phase 12 – 18 months after start



QUALIFICATION DETAILS: Years 2 & 3

Level 3 Diploma in Advanced Manufacturing Engineering (Development Knowledge)
Studied 2 days a week over 2 years at College (Years 2 and 3)

Units of Study:

- Health and Safety in the Engineering Workplace
- Communications for Engineering Technicians
- Mathematics for Engineering Technicians
- Mechanical Principles of Engineering Systems
- Electrical and Electronic Principles in Engineering
- Applications of Mechanical Systems in Engineering
- Application and Principles of Programmable Logic Controllers (PLCs)
- Engineering Maintenance Procedures and Techniques
- Features and Applications of Electrical Machines
- Three-Phase Motors and Drives
- Electro, Pneumatic and Hydraulic Systems and Devices
- Monitoring and Fault Diagnosis of Engineering Systems

Level 3 Diploma in Advanced Manufacturing Engineering (Development Competence)
Mechatronics Maintenance Technician (Work-based NVQ)

Assessed in the workplace during years 2 and 3.

Units of assessment:

- Complying with statutory regulations and organisational safety requirements
- Working Efficiently and Effectively in Advanced Manufacturing and Engineering
- Handing Over and Confirming Completion of Maintenance Activities
- Carrying Out Fault Diagnosis on Engineered Systems
- Carrying Out Preventative Planned Maintenance on Engineered Systems
- Maintaining Mechanical Equipment
- Maintaining Electrical Equipment
- Carrying Out Fault Diagnosis on Electrical Equipment and Circuits
- Carrying Out Fault Diagnosis on Mechanical Equipment

QUALIFICATION DETAILS: Year 4

Independent Assessment of Professional Competence

Externally assessed during year 4 after completion of all qualifications 48 months after start of programme.

BD will undertake a Portfolio based Occupational Competence Validation Interview (Viva).

A nominated Professional Engineering Institution (PEI) undertakes the independent assessment to determine if the apprentice has met the Engineering Technician requirements as defined by the UK-SPEC requirements.

WORKPLACE EXPERIENCE:

Throughout the 4 year apprentice programme apprentices will be working in a production environment either in the moulding, assembly or engineering departments. The working week is Monday to Friday. After commencement pay increases are applied each January throughout the 4 years. These increases will be dependent on the apprentice's performance both at college and within the work place.

REQUIRED BEHAVIOURS:

Personal responsibility, resilience and ethics. Comply with health and safety guidance and procedures, be disciplined and have a responsible approach to risk, work diligently at all times, accept responsibility for managing time and workload and stay motivated and committed when facing challenges. Comply with any organisational policies/codes of conduct in relation to ethical compliance

Work effectively in teams. Integrate with the team, support other people, consider implications of their actions on other people and the business

Effective communication and interpersonal skills. Open and honest communicator, communicating clearly using appropriate methods, listening to others and have a positive and respectful attitude

Focus on quality and problem solving. Follow instructions and guidance, demonstrates attention to detail, follow a logical approach to problem solving and seek opportunities to improve quality, speed and efficiency

Continuous personal development. Reflect on skills, knowledge and behaviours and seeks opportunities to develop, adapt to different situations, environments or technologies and have a positive attitude to feedback and advice



Role Profile

Mechatronics Maintenance Technicians ensure that plant and equipment perform to the required standard to facilitate production targets regarding Safety, Quality, Delivery and Cost within High Value Manufacturing environments. Typically the work would cover a broad range of activities include installation, testing, fault finding and the on-going planned maintenance of complex automated equipment. This requires the application of a complex blend of skills, knowledge and occupational behaviours across the electrical, electronic, mechanical, fluid power and control systems disciplines.

On successful completion of the 4 year apprenticeship programme it is anticipated that the candidates will be offered a full time permanent technician role. A technician works as part of the manufacturing team on the shop floor. They are responsible for all technical and processing activities associated with the manufacture of medical devices and will also have operational responsibilities.





Specific Specialist Knowledge:

- Understand mathematical techniques, formula and calculations in a mechatronics maintenance environment and the type of equipment being maintained
- Understand mechanical, electrical, electronic, fluid power and process control principles in a mechatronics maintenance environment
- Understand how equipment being maintained functions and operating parameters in individual components and how they interact
- Understand fault diagnostic methods, techniques and equipment used when maintaining equipment and systems
- Understand condition monitoring methods and equipment used and understand how the information gained supports the planning of maintenance activities
- Understand how to minimise machinery downtime by implementing planned preventative maintenance programmes

Specific Specialist Skills:

- Read and interpret relevant data and documentation used to maintain components, equipment and systems
- Carry out condition monitoring of plant and equipment
- Carry out planned maintenance activities on plant and equipment
- Carrying out complex fault diagnosis and repair activities on high technology engineered systems such as:
 - Maintaining mechanical equipment
 - Maintaining fluid and pneumatic power equipment
 - Maintaining electrical and electronic equipment
 - Maintaining process control equipment
- Carrying out confirmation testing and subsequent smooth hand over of equipment and plant
- Support the installation, testing and commissioning of equipment (where applicable)
- Contribute to the business by identifying possible opportunities for improving working practices, processes and/or procedures

POSSIBLE CAREER PATHWAYS AT BD





OTHER QUALIFICATIONS

While in your apprenticeship BD may offer further courses which are not provided by their primary training provider Cornwall College in order to further your knowledge and skill set. Some of the courses that could be offered role dependent are:

- RJG Essentials
- Pallet Truck Training
- Injection Moulding Techniques Level 2 & 3
- Gantry Crane
- Mobile Elevated Platforms



OPPORTUNITIES

Being a BD apprentice will give you opportunities such as:

- Becoming a STEM ambassador (Science, Technology, Engineering and Mathematics)
- RYLA (Rotary Youth Leadership Award)
- Promote BD and apprenticeships at different events and schools
- Help recruit the new apprentices at BD each year at different events
- Add extra units to your qualifications
- Visit exhibitions such as MACH



ABOUT BD

BD is one of the largest global medical technology companies in the world and is advancing the world of health by improving medical discovery, diagnostics and the delivery of care. The company supports the heroes on the frontlines of health care by developing innovative technology, services and solutions that help advance both clinical therapy for patients and clinical process for health care providers. BD and its 65,000 employees have a passion and commitment to help enhance the safety and efficiency of clinicians' care delivery process, enable laboratory scientists to accurately detect disease and advance researchers' capabilities to develop the next generation of diagnostics and therapeutics. BD has a presence in virtually every country and partners with organizations around the world to address some of the most challenging global health issues. By working in close collaboration with customers, BD can help enhance outcomes, lower costs, increase efficiencies, improve safety and expand access to health care. For more information on BD, please visit bd.com.

BD Plymouth

The Plymouth plant is one of the premier evacuated tube and needle production facilities, making BD Vacutainer® blood collection products for markets across Europe and around the world. We started manufacturing BD Vacutainer® Tubes here in October 1981 in a new 250,000sqft building with just 88 employees. In 1988 a second building was added bringing the manufacturing footprint up to 490,000sqft. Over the years the operation has now grown to over 700 employees.

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