

Apprenticeships +

Engineering
Operative
(Machinist)

Apprenticeship
Level 2



**The
Sheffield
College**

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Quick Information

New Apprenticeship Standard designed by employers for employers

Sector

Engineering and manufacturing

Who is it for?

New or existing staff

Start date

September

Level

Level 2

Duration

18-24 months

How does it work?

Day release every week to attend college.

A work-based assessor will visit the site every 8-10 weeks

Content

603/3220/7 EAL Level 2 Diploma in Engineering Operations (Skills)

603/3194/XA EAL Level 2 Certificate in Engineering Operations (knowledge)

Assessment

Mandatory qualifications assessed within college

Qualification

Engineering Operative

Additional qualifications

603/3220/7 EAL Level 2 Diploma in Engineering Operations (Skills)

603/3194/XA EAL Level 2 Certificate in Engineering Operations (knowledge)

Review

After 3 years

Engineering Operative (Machinist)

Engineering Operatives are predominantly involved in engineering operations which are key to the success of the Manufacturing and Engineering sector allowing employers to grow their business while developing a work force with the relevant skills and knowledge to enhance the sustain the sector.

The role covers a wide range of common and job specific skills sets that can be transferred across the manufacturing engineering industry sectors during the course of their careers. Dependent on the sector that they are employed in there may be subtle differences in terms of composition and application of the job role specific skills and knowledge they will require, however the core skills and knowledge will be the same regardless of the sector/area they work in.

Engineering Operatives will have clear reporting lines with anything outside their role and responsibility. They will work individually or as part of a team to carry out a range of engineering operations which could include ensuring machines and equipment used are maintained and serviceable, dealing with breakdowns, restoring components and systems to serviceable condition by repair and replacement; operating a variety of machines (CNC or Conventional); assembling and repairing machine and press tools, dies, jigs, fixtures and other tools; fabrication/installation of a wide variety of other sheet fabrications and equipment and; fabrication and assembly of metal parts joining techniques; preparing materials and equipment for engineering processes, providing technical support including communications software, test tools, performance, capacity planning, and e-commerce technology as required.



Key Areas of Study

Health and Safety, Communication, Business Improvement, Hand Fitting, using lathes and milling machines.

Engineering Operatives must comply with statutory regulations and organisation safety requirements including any environmental compliance procedures and systems; Identify hazards and hazardous situations; Prepare the work area and equipment; Obtain and follow the appropriate job documentation and work instructions; Extract the necessary data and information from specifications and related documentation; Carry out the engineering activities in line with their job role; Carry out quality checks as required; working with minimum supervision either individually or as part of a team and will be responsible for their own actions and for the quality and accuracy and timely delivery of the work they undertake.

Examples of the occupational roles from across the engineering and manufacturing sector that would be covered within this standard are: Servicing and maintenance operative; Machine setter/operative; Mechanical engineering operative; Fabricator; Engineering fitter; Multi-disciplined engineering operative; Materials, processing and finishing operative, Technical Support operative, founding/casting operative.

An Engineering Operative must have the core requirements below and demonstrate the specialist requirements in ONE job specific role.

Core Knowledge

An Engineering Operative will understand:

- How to obtain the necessary job instructions, engineering drawings and specifications and how to interpret them
- Relevant statutory, quality, environmental compliance procedures/systems, organisational and health and safety regulations relating to engineering operations
- Their individual roles and responsibilities within the organisation and the flexibility required to support the achievement of company targets
- Engineering operational practices, processes and procedures
- Potential problems that can occur within the engineering operations and how they can be avoided

Core Skills

An Engineering Operative will be able to:

- Work safely at all times, complying with health and safety legislation, regulations, environmental compliance procedures and systems and other relevant guidelines
- Identify and deal appropriately with any risks, hazards, hazardous situations and problems that may occur within the engineering environment within the limits of their responsibility
- Demonstrate effective communication skills which include oral, written, electronic
- Complete appropriate documentation accurately, efficiently and legibly using the correct terminology where required
- Obtain and follow the correct documentation, specifications and work instructions in accordance with time constraints and the roles and responsibilities identified for the engineering activities, extracting the necessary data/information from specification and related documentation
- Select and use appropriate tools, equipment and materials to carry out the engineering operation
- Deal appropriately with any problems that may occur within the manufacturing environment within the limits of their responsibility
- Work efficiently and effectively at all times maintaining workplace organisation and minimising waste

Specialist job roles

In addition to the core knowledge and skills, all Engineering Operatives must complete ONE of the following job role options:

Option 1 – Engineering Operatives working within a maintenance role (this role can cover either mechanical, electrical, electronic or fluid power work or a combination of them) will have:

Knowledge of:

- Maintenance planning
- Diagnostic and fault finding techniques
- Specific safe working practices, maintenance procedures and environmental regulations that need to be observed

Skills:

- Carry-out fault location on appropriate equipment using suitable maintenance diagnostic techniques
- Carry-out maintenance activities in line with work instructions
- Carry-out tests on the maintained equipment in accordance with test schedule/defined test procedures
- Follow appropriate completion activities and restore equipment to service by replacing or repairing components

Option 2 – Engineering Operatives working within a mechanical manufacturing engineering role will have:

Knowledge of:

- Specific equipment operating parameters
- Mechanical manufacturing techniques
- Specific quality specifications for mechanical manufacturing operations

Skills:

- Plan the mechanical manufacturing operation before they start
- Mount and set the required workholding devices
- Produce individual components, sub-assemblies or completed assemblies using mechanical manufacturing techniques
- Carry-out quality checks during and after mechanical manufacturing operations

Option 3 – Engineering Operatives working within an electrical and electronic engineering role will have:

Knowledge of:

- Cable types and where they should be used
- Electrical and electronic assembly and testing techniques
- Specific safe working practices, isolation procedures and safe reinstating of equipment/system that need to be observed

Skills:

- Wire and terminate different types of cabling e.g. single core, multi core, screened, fire resistant, armoured, etc.
- Assemble and test a range of electrical components e.g. component panels, isolator switches, fuses, circuit breakers, contactors, relays, rail mounted terminal blocks, etc.
- Assemble and test a range of electronic components e.g. resistors, capacitors, diodes, transistors, etc.
- Follow appropriate completion activities and restore equipment/system to service after the assembly and testing has been completed

Option 4 – Engineering Operatives working within a fabrication role will have:

Knowledge of:

- Specific marking out and preparation techniques
- Different fabrication and joining techniques
- Specific safe working practices, isolation procedures and safe reinstating of equipment/system that need to be observed

Skills:

- Shape the materials using the appropriate methods and techniques
- Shape the materials using the appropriate methods and techniques
- Produce components which meet the specification requirements
- Carry-out quality checks during and after the fabrication activities

Option 5 – Engineering Operatives working within a materials, processing or finishing role will have:

Knowledge of:

- Specific machinery, equipment and tooling required for the materials, processing or finishing operation
- Different materials, processing or finishing techniques
- Specific quality specifications for materials, processing or finishing operations

Skills:

- Plan the materials, processing or finishing operation before they start
- Prepare equipment, tooling, materials, etc. and complete set up activities before carrying out the materials, processing or finishing operation
- Carry out the material, processing or finishing operation in line with specific safe working practices and specification requirements
- Carryout quality checks during and after the materials, processing or finishing operation

Option 6 – Engineering Operatives working within a technical support role will:

Knowledge of:

- Specific machinery, equipment and tooling required for the technical support operation
- Different technical support techniques
- Specific safe working practices, procedures and quality requirements that need to be observed

Skills:

- Plan the technical support operation before they start
- Prepare equipment, tooling, materials, etc. and complete set up activities before carrying out the technical support
- Carry-out the technical support operation in line with specific safe working practices and specification requirements
- Carry-out quality checks during and after the technical support operation

Core Behaviours Requirements:

Manufacturing and Engineering organisations require their apprentices to have a set of behaviours that will ensure success both in their role and in the overall company objectives. The required behaviours are:

- **Personal responsibility and resilience** – Comply with the health and safety guidance and procedures, be disciplined and have a responsible approach to risk, work diligently regardless of how much they are being supervised, accept responsibility for managing time and workload and stay motivated and committed when facing challenges.
- **Work effectively in teams** – Integrate with the team, support other people, consider implications of their own actions on other people and the business whilst working effectively to get the task completed.
- **Effective communication and interpersonal skills** – An open and honest communicator, communicates clearly using appropriate methods, listen well to others and have a positive and respectful attitude.
- **Focus on quality and problem solving** – Follow instructions and guidance, demonstrate 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 seek opportunities to develop, adapt to different situations, environments or technologies and have a positive attitude to feedback and advice.

Qualifications and Development

The following qualifications will be awarded and will be available for delivery from April 18:

Level 2 Diploma in Engineering Operations (Skills)

- **Level:** 2
- **Size:** TBC
- **Approval Cat:** Hard Sift – employers are unlikely to employ anyone without this qualification
- **Type/Purpose:** Occupational Skills
- **OFQUAL/Number:** TBC – This Ofqual number will be different for each AO who offers this qualification

Level 2 Certificate or Diploma in Engineering Operations (knowledge)

- **Level:** 2
- **Size:** TBC
- **Approval Cat:** Hard Sift – employers are unlikely to employ anyone without this qualification
- **Type/Purpose:** Off the job Technical qualification
- **OFQUAL/Number:** TBC – This Ofqual number will be different for each AO who offers this qualification

Training, Tutoring and Assessment

Apprentices are assessed within college to achieve their mandatory qualifications. A reflective portfolio will be built by their work-based assessor, this is developed in the workplace.

End Point Assessment

Practical skills observation and a professional discussion

For more information on the assessment for the Engineering Operative (Machinist) Apprenticeship please see the full assessment plan in the Apprenticeship Standard documentation. We will arrange the End Point Assessment.



Apprentice Entry Requirements

Individual employers will set the selection criteria for their Apprenticeships.

Other mandatory qualifications

Apprentices without Level 1 (or equivalent) in English and maths must ensure that apprentices achieve Level 1 and take the test for Level 2 prior to taking the end-point assessment. For those with an education, health and care plan or a legacy statement the apprenticeships English and maths minimum requirement is Entry Level 3 and British Sign Language qualification are an alternative to English qualifications for whom this is their primary language.

More Information

To find out more about the opportunities and financing of apprenticeships and to discuss your particular requirements, please email apprenticeshipsandtraining@sheffcol.ac.uk or call **0114 260 2600** to speak to one of our friendly employer advisors.

Get In Touch

Email

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Why choose The Sheffield College?

As one of the region's largest providers of apprenticeships, The Sheffield College is more than just your local provider; we deliver the dedicated support you need to source, train and get the best out of your apprentice.

We appreciate how difficult and time consuming it can be to recruit suitable staff. That's why we will source, shortlist and prepare candidates before you meet them.

We help you get the best deal by finding the right funding and we handle the paperwork to make the process of arranging an apprenticeship training programme as smooth as possible. Our employer partnership team, apprenticeship tutors and assessment staff are experts, and we invest time and money in training and upskilling them regularly so their knowledge is up-to-date and industry standard.

At The Sheffield College we go above and beyond; we know that every business is different and we help to develop apprentices who will meet the needs of your business.