

Engineering Skills



National 5 : Skills for Work : Engineering Skills

The content of the course focuses on the development of basic hand skills across the disciplines of mechanical, fabrication, electrical, electronic, control, maintenance, and manufacture. Central to the content are the generic employability skills valued by employers in an engineering sector.

These skills are developed in each of the four units and are assessed at least twice during the course. These add value to the development of the specific vocational skills.

All the engineering skills units, while focusing on specific skill areas, also address generic skills related to:

- *engineering communications*
- *engineering materials*
- *measurement and marking*
- *working to tolerances*
- *Core Skills*

In addition to the specific vocational skills developed in this course, students will have opportunities to develop and apply their knowledge and understanding of employability skills such as:

- *Maintaining good time-keeping and attendance.*
- *Showing health and safety awareness — to include wearing personal protective equipment (PPE), safe working practices, and understanding a basic risk assessment.*
- *Selecting and using engineering tools and materials — source and use tools in a correct and safe manner, use tools solely for the purpose for which they are designed and selection of engineering materials.*
- *Interpreting engineering drawings and specifications.*
- *Working co-operatively with others — to include seeking advice, following instructions and working in a team.*
- *Planning and preparing for work — to include selection of correct tools and equipment.*
- *Applying time management — to include working to schedule and undertaking a correct sequence of work.*

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Summary of unit content:

Engineering Skills: Mechanical and Fabrication (National 5).

Learners will select and use the correct tools, equipment, and materials required to manufacture an artefact. During the manufacture, learners will read simple engineering drawings, measure and mark, select appropriate materials, and work to specified tolerances. The learner will also develop and use basic engineering skills of cutting, shaping, drilling, tapping, forming, and joining. Embedded into the practical activities of this unit are the employability skills that employers value. Although it is envisaged that all employability skills will be developed in this unit, not all will be assessed.

Engineering Skills: Electrical and Electronic (National 5).

Learners will select the correct tools and components required to construct a basic functional extra low voltage electrical circuit and an electronic circuit from a given diagram and specification. The unit is suitable for learners with no previous electrical, electronic, or employment experience. Embedded into the practical activities of this unit are the employability skills that employers value. Although it is envisaged that all employability skills will be developed in this unit, not all will be assessed.

Engineering Skills: Maintenance (National 5).

Learners will select the correct tools, materials and equipment required to test, disassemble, repair, and assemble an engineering part. Embedded into the practical activities of this unit are the employability skills that employers value. Although it is envisaged that all employability skills will be developed in this unit, not all will be assessed.

Engineering Skills: Design and Manufacture (National 5).

Learners will develop Computer Aided Draughting skills. They will select and use the correct tools and materials required to design, manufacture/construct, test, evaluate, and report their findings on the manufacture/construction of a project.