

**-SQA-SCOTTISH QUALIFICATIONS AUTHORITY**

**Hanover House  
24 Douglas Street  
GLASGOW G2 7NG**

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**NATIONAL CERTIFICATE MODULE DESCRIPTOR**

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**-Module Number- 0074702 -Session-1987-88**  
**-Superclass- XF**

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**-Title- INTRODUCTORY MACHINING SKILLS**

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**-DESCRIPTION-**

Type and Purpose A general module which enables the student to acquire basic skills in the use of machine tools.

Preferred Entry Level No formal entry requirements.

Learning Outcomes The student should:

1. interpret simple drawings and instructions;
2. mark out simple components;
3. select and use machine tools and equipment;
4. manufacture an artefact.

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Content/ Context Safety regulations and safe working practices and procedures should be observed at all times.

Corresponding to Learning Outcomes 1-4:

1. Examples of how drawings, planning sheets and other instructions are used to define components and manufacturing methods (appropriate to the selected exercises).
2. Use of marking out tools and equipment. Importance of working from datums and centre lines.
3. Identification and use of tools and equipment for selected exercises (which include the skill elements listed in Content/Context).

4. Practical exercises to develop skills in:
- lathe: turning, facing, and drilling;
  - shaper: shaping horizontal and vertical;
  - milling horizontal or vertical faces;
  - the use of measuring tools and equipment including surface texture comparison plates;
  - safety precautions applicable to lathe, shaper and milling machines.

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Suggested  
Learning and  
Teaching  
Approaches

This module should be presented in a workshop using a programme of exercises which would interest the student and relate to a theme or vocational bias.

Safety and safe working practices should form an integral part of all instruction. The need for good housekeeping, tidy layout of tools and materials should be stressed throughout the module. Workshop safety: alarm procedures, behaviour, protective clothing and good housekeeping should be covered.

In the initial stages, each tool, operation or process should be fully explained and demonstrated. Terminology and procedures should be introduced in the context of the exercises.

Students should not be allowed to grind tools or operate any grinding machine.

A set of completed exercises should be available for the students to work to and to compare standards.

Equipment posters, information charts and tables should be on display to assist the students with tool and process selection.

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Assessment  
Procedures

Acceptable performance in the module will be satisfactory achievement of the performance criteria specified for each learning outcome.

The following abbreviations are used below:

LO Learning Outcome  
IA Instrument of Assessment  
PC Performance Criteria

- LO1 IA Written short answer questions of a minimum of five based on given drawings and instructions.
- PC The student interprets drawings and related instructions correctly.
- LO2 IA Practical exercise based on an observation checklist.
- PC The student marks out material correctly to a standard of accuracy ( $\pm 0.5\text{mm}$ ) against a template.
- LO3 IA Practical exercise based on an observation checklist in which the student uses a lathe and one other machine tool.
- PC The student uses the lathe and machine tool chosen correctly, and with regard to safe working practices and procedures.
- LO4 IA Manufactured Artefact
- PC The student satisfactorily manufactures, in an agreed time, an artefact in which the functional dimensions are within specified tolerances ( $\pm 0.5\text{mm}$  length, and  $\pm 0.25\text{mm}$  diameter) and with regard to safe working practices and procedures.