**-SQA-SCOTTISH QUALIFICATIONS AUTHORITY**

**Hanover House**
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**GLASGOW G2 7NQ**

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## NATIONAL CERTIFICATE MODULE DESCRIPTOR

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**-Module Number-** **0095801** **-Session-1989-90**
**-Superclass-** **WK**

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**-Title-** **FURNITURE PRODUCTION: PLANNING AND MOULDING ($x^1/_2$)**

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**-DESCRIPTION-**

Purpose

This module is designed to develop an understanding of the operations performed by, and production potential of, machinery employed in the furniture and timber industries. The module is suitable for students following a modular programme for furniture technicians.

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Preferred Entry Level

No formal entry requirements

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Learning Outcomes

The student should:

1. outline the operating principles of a range of machines;
2. identify a range of tools/abrasives and attachments and their applications;
3. select appropriate machines to produce a range of furniture components;
4. compare the production potential of a range of machines.

Content/ Context

Corresponding to Learning Outcomes 1-4:

SAWING MACHINES

Band and circular resaw, straight line edger, multi-rip, dimension saw, narrow band-saw, cross-cut, wall saw, beam and automated saws, fences, stops, jigs and fixtures, elimination of spelching.

Types of blade, design of saw teeth, tension in circular and wide bandsaws, tipped saws.

Straightening, deep cutting, flatting, cross-cutting, ripping, multi-ripping, scoring, dimension sawing, cutting angles, tapers and apertures, high volume production of sheet and board.

PLANING AND MOULDING MACHINES

Overhand planer, thicknesser, spindle moulder, multi-head planer moulders.

Square and circular cutterblocks, whitehill block, slotted collars, friction grip and positively located cutters, profile blocks, segmental tools, stacked tooling, cutting tool material.

Truing, face and edging, thicknessing, square sections and simple mouldings, shaped work, back cutting, complex mouldings and high volume production, round sections, setting devices, jointing, cutter projection templates and development drawings, factors affecting surface finish.

JOINT FORMING MACHINES

Chain and hollow chisel mortice, reciprocating chisel, slot, single and double ended tenon, rounded end tennoner, dovetail, single and multi-head doweling, vee-groove and edge moulding machines.

Use of chip breakers and backing pieces, stops, clamping and holding devices, types of feed dogs, scoring and cut-off saws, straight and skew cutterblocks, scribing and hogging heads, manual and automatic dovetailers.

SHAPING MACHINES

Linear and rotary, spindle shaper, high speed router, jig construction, clamping and locating devices, cutters and cutter-holders, single and multi-station work, provision for adjusting dimensions,

Furniture components to include tops, legs, arms and rails, symmetrical and asymmetrical, two and three dimensional shapes.

SANDING MACHINES

Drum, wide belt, manual belt, reciprocating pad belt, linishing, brush backed, moulding, disk and bobbin.

Tracking devices, types of abrasive, open and close coat, backing material, contact and tension rolls, pads, durometer hardness, moulded backing pieces.

Thicknessing, finishing, high and low volume production, veneered and solid work, wide panels, completed carcasses, internal and external shaped work, mouldings, burnishing.

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Suggested Learning and Teaching Approaches

Practical demonstrations, discussions and interactive group analysis and evaluation should be used. Technical publications, trade journals and manufacturers' catalogues should be used to gain an insight into the range of equipment available. The student's previous knowledge of furniture machinery may be of value when undertaking this module.

Industrial visits should be made whenever possible to develop an appreciation of the production potential and quality which is possible with modern machinery.

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Assessment Procedures

Acceptable performance in the module will be satisfactory achievement of all the performance criteria specified for each Learning Outcome.

The following abbreviations are used below:

LO Learning Outcomes
IA Instrument of Assessment
PC Performance Criteria

LO1 OUTLINE THE OPERATING PRINCIPLES OF A RANGE OF MACHINES

PC The student:

(a) outlines the general layout of a specified machine;
(b) identifies the feed arrangements;
(c) outlines the cutting action of the tool/ abrasive.

IA Structured Question

The question will test the student's knowledge of the operating principles of one machine from a given type of machine. Diagrams may be included where appropriate.

Satisfactory achievement of the Learning Outcome will be demonstrated by the student achieving the performance criteria.

LO2 IDENTIFY A RANGE OF TOOLS/ABRASIVES AND ATTACHMENTS AND THEIR APPLICATIONS

PC The student:

(a) identifies tools/abrasives and their applications for specified machines;
(b) identifies attachments and their applications for specified machines.

IA Assignment

The assignment will test the student's knowledge of a range of tools/abrasives and attachments and their applications for a given type of machine. The student should be given examples, diagrams and photographs of the machines.

The student will be required to identify the following:

(I) sawing machines: 6 tools, 2 attachments and one application for each;
(ii) planing and moulding machines: 6 tools, 2 attachments and one application for each;
(iii) joint forming machines: 6 tools, 2 attachments and one application for each;
(iv) shaping machines: 6 tools, 2 attachments and one application for each;
(v) sanding machines: 3 abrasive materials, 2 types of abrasive coating, 2 types of abrasive backing, 2 attachments and one application for each.

Satisfactory achievement of the Learning Outcome will be demonstrated by the student meeting all the performance criteria.

LO3 SELECT APPROPRIATE MACHINES TO PRODUCE A RANGE OF FURNITURE COMPONENTS

PC The student:

(a) selects, with reasons, appropriate machines for component production;
(b) specifies alternative means of production.

IA Structured Question

The question will test the student's ability to select appropriate machines for given situations. The students should be given specifications/diagrams for 4 components for a given type of machine. The student will be required to select the most appropriate machine and also specify an alternative if such a machine is not available. This may involve an alternative machine, modifying a machine, using extra tools or attachments or using several machines.

Satisfactory achievement of the Learning Outcome will be demonstrated by the student achieving the performance criteria for at least 3 of the components for a given type of machine.

LO4 COMPARE THE PRODUCTION POTENTIAL OF A RANGE OF MACHINES

PC The student

(a) identifies the primary function and any other applications of a range of machines;
(b) compares the production potential of machines for a given purpose.

IA Assignment

The assignment should test the student's ability to use relevant technical material to assess and compare the production potential of 3 machines, in terms of mass production potential, for a given purpose.

Satisfactory achievement of the Learning Outcome will be demonstrated by the student meeting all the performance criteria.