

Higher National Unit Specification

General information for centres

Unit title: Furniture: Machine Woodworking

Unit code: F0Y2 35

Unit purpose: This Unit is designed to develop the candidate's knowledge and skills of processes needed to operate machines in producing furniture component parts.

On completion of the Unit the candidate should be able to:

- 1 Analyse the function of woodworking machines.
- 2 Plan a woodworking machine project.
- 3 Produce furniture component parts.

Credit points and level: 1 HN Credit at SCQF level 8: (8 SCQF credit points at SCQF level 8*)

**SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

Recommended prior knowledge and skills: Access to this Unit is at the discretion of the centre. It is recommended that candidates have prior knowledge of woodworking machines either at NC or similar level or have completed the HN Unit Furniture Machinery Theory and Use or have appropriate work experience.

Core Skills: There are opportunities to develop the Core Skills of Communication and Problem Solving and Numeracy at SCQF level 6 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

Context for delivery: If this Unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

Assessment: Candidates are required to analyse and report their findings on the function of various woodworking machines. Candidates will set out a Planning schedule to produce Furniture components, then utilise this planning schedule in the production of furniture component parts.

Higher National Unit specification: statement of standards

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The sections of the Unit stating the Outcomes, knowledge and/or skills, and Evidence Requirements are mandatory.

Where evidence for Outcomes is assessed on a sample basis, the whole of the content listed in the knowledge and/or skills section must be taught and available for assessment. Candidates should not know in advance the items on which they will be assessed and different items should be sampled on each assessment occasion.

Outcome 1

Analyse the function of woodworking machines

Knowledge and/or skills

- ◆ Woodworking machines
- ◆ Tooling used with woodworking machines
- ◆ Benefits and limitations of tooling
- ◆ Current legislation for woodworking machinery

Evidence Requirements

Candidates will need to provide evidence, to demonstrate their knowledge and skills by showing that they can analyse the function of four different woodworking machines. Each analysis should include:

- ◆ the functions of each machine; functions described should include basic and additional functions where appropriate
- ◆ an analysis of any specialist attachments or operation which could be used with the machines; at least one machine should have specialist attachments
- ◆ an explanation of the current regulations which apply to each of the machines and within the workshop environment

Candidates should provide evidence of analysing tooling for these four different woodworking machines. The benefits and limitations of tooling for each of the four machines should be clearly stated. Information should be accompanied by visuals. Additionally candidates should accurately explain the current regulations which apply to each of the machines and within the workshop environment. Specific reference should be made to regulations, legislation and approved codes of practice for each of the four machines.

Assessment guidelines

Candidates could produce a written or oral report showing evidence of the candidate researching their chosen woodworking machines and tooling. This information could be collated into a project file which could include the current legislation relating to woodworking.

Visuals could be in the form of annotated drawings or sketches.

Higher National Unit specification: statement of standards (cont)

Unit title: Furniture: Machine Woodworking

Outcome 2

Plan a woodworking machine project

Knowledge and/or skills

- ◆ Interpretation of technical information
- ◆ Sequence of operations
- ◆ Tools and woodworking machines
- ◆ Preparatory work
- ◆ Current health and safety requirements

Evidence Requirements

Candidates will need to provide evidence to demonstrate their knowledge and skills by showing that they can plan the production of furniture component parts to meet an agreed brief. This evidence should include information on:

- ◆ the furniture component parts which will have been previously agreed between the candidate and the lecturer
- ◆ the preparatory work required: workspace preparation; sufficiency of materials; safety requirements
- ◆ tools used including woodworking machines, hand tools and power tools
- ◆ evaluating the machinery, tooling and equipment in terms of their suitability for manufacture of the agreed furniture components

Candidates should also provide details of materials required which includes:

- ◆ comments on the suitability of the materials in terms of strength, accuracy and appearance desired and likely to be achieved
- ◆ comments on the probable speed and cost of original production
- ◆ comments on the need for any specialised equipment and templates or jigs
- ◆ considerations for safe working practices
- ◆ workshop drawings to a recognised style such as 1st angle orthographic projection, in suitable scales (Details to be drawn in scale 1:1 as appropriate)
- ◆ cutting/components list utilising the workshop drawings produced
- ◆ technical information including drawings; specifications and manufacturer's data

Candidates should also provide a sequenced plan of production for the furniture component parts. This plan should include:

- ◆ a manufacturing schedule
- ◆ a cutting list
- ◆ a machines specification
- ◆ a tooling specification
- ◆ jig requirements
- ◆ information on jig design
- ◆ a sequence of operations

Higher National Unit specification: statement of standards (cont)

Unit title: Furniture: Machine Woodworking

Assessment guidelines

This Outcome could be assessed by the candidate producing a project file that includes the planned schedule of work, a portfolio of drawings; comprehensive enough to enable an agreed item of furniture to be manufactured. The candidate could produce a sequenced plan of manufacture, detailing tools and Equipment that could be used and in what order. All candidate evidence could be logged in a log book or a project file.

Higher National Unit specification: statement of standards (cont)

Unit title: Furniture: Machine Woodworking

Outcome 3

Produce furniture component parts

Knowledge and/or skills

- ◆ Use of woodworking machines
- ◆ Health and Safety requirements
- ◆ Risk assessment

Evidence Requirements

Candidates will need to provide evidence to demonstrate their knowledge and skills by showing that they can work to a sequence of activities optimising the use of materials, tools and equipment to produce furniture component parts.

In producing these components candidates should:

- ◆ demonstrate care and security of tools and equipment
- ◆ follow current safety regulations
- ◆ produce components which are structurally fit for purpose and jointed to suit the agreed brief
- ◆ follow the agreed project plan
- ◆ note any deviations from the plan and analyse the reasons for the deviation
- ◆ use a minimum of four different operations

Manufacturing processes should be logged on an observation schedule which should be completed by the assessor. A risk assessment should be produced for one of the machines used in the process of producing the components and an accurate method statement produced which negates the risks involved.

Each component should be produced and finished to ensure it has smooth surfaces, is fit for purpose, has stability and matches the original agreed brief.

Assessment guidelines

This Outcome could be assessed by the candidate manufacturing the furniture components identified, researched, drawn and scheduled for in Outcome 2. A minimum of four different operations should be used eg cutting, shaping and sanding.

Administrative Information

Unit code: F0Y2 35
Unit title: Furniture: Machine Woodworking
Superclass category: WK
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Version: 01

History of Changes:

| Version | Description of change | Date |
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Higher National Unit specification: support notes

Unit title: Furniture: Machine Woodworking

This part of the Unit specification is offered as guidance. The support notes are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 40 hours.

Guidance on the content and context for this Unit

This Unit is an optional Unit within the HNC/D Furniture award.

This Unit could be linked with Units such as; Modern Upholstery, Traditional Upholstery, Furniture Reproduction, Shaped work and Furniture Project.

It is not anticipated that the processes outlined in the Outcomes be artificially separated but would be part of an overall process which will be assessed holistically.

The woodworking machines which could be taught in this Unit should be selected from the following: Dimension saw, surface planer, thicknessing planer (or combination thicknesser/planer) mortice machine, tenon machine, spindle moulder, vertical drill, wood turning lathe, rip saw, crosscut saw, narrow bandsaw, band resaw.

The tooling for the above machines could include: Mortice chisels and auger bits, bandsaw blades, lathe Tooling, various saw blades, (crosscut, rip and dimension saw blades), planer blades and various spindle moulder tooling (chip limiter blocks, alternate bevel blocks, rebate blocks, grooving blocks).

Candidates should be aware of current legislation which at the time of writing includes:

- ◆ Current version of Health and Safety at Work Act
- ◆ Management of Health and Safety at Work Regulations
- ◆ The Construction (Design and Management) Regulations
- ◆ The Manual Handling Operations Regulations
- ◆ Provision and Use of Work Equipment Regulations 98 (PUWER 98)
- ◆ Personal Protective Equipment at Work Regulations
- ◆ The Control of Substances Hazardous to Health Regulations(COSHH)
- ◆ The Construction (Working Places) Regulations
- ◆ Approved codes of practice (ACOP)

Candidates can research the health and safety requirements of woodworking machines and woodworking workshops using paper based or computer based methods. Additionally candidates should be aware of the manufacturers' instructions pertaining to the materials in use in the workshop.

Lecturers could agree an item of furniture or furniture components which should be broad enough to allow candidates to embark on manufacturing processes that will test their existing strengths and improve areas of development need. The range of choices may be stipulated by lecturers, or allow candidates to offered suggestions that interest them.

Higher National Unit specification: support notes (cont)

Unit title: Furniture: Machine Woodworking

Guidance on the delivery and assessment of this Unit

Outcome 1

The candidate could analyse the machinery and tooling that may be required to be utilised in the manufacture of their chosen Project. The candidate should analyse the functions, benefits and limitations of each machine/tooling.

Outcome 2

The drawings for the production of the furniture components should be comprehensive enough to allow the items to be manufactured. Typically, 1st angle orthographic projection will be used, with other styles complementing the Project file. Detailing and workshop rods may require to be drawn in Scale 1:1.

Suitable cutting lists will be compiled, using correct terminology, allowing calculation of sizes and volumes of materials required.

A timetable for production will be drawn up by candidate, with a logbook\diary kept to illustrate progress and to allow reflective analysis and comment. It is anticipated that this Outcome will be linked with Outcome 3.

Outcome 3

It is anticipated the candidates will use the materials, methods, machines, tools and equipment they have previously identified in their project file to manufacture their chosen item of furniture. A centre devised checklist should be devised to allow the lecturer to illustrate the candidate's adherence to safe working practices throughout the project.

Alternatively this Unit could be integrated with a project Unit so that components are used to produce an item of furniture.

Opportunities for developing Core Skills

The opportunities for development of Communications Core Skills are available throughout this Unit. Candidates will have to communicate with others in the workshop environment as well as demonstrate their written communications skills in the preparation of Outcomes 1 and 2. Candidates will also require to negotiate with their lecturer, a suitable choice of item for making components.

Problem solving skills would be developed in particular in Outcome 2 where candidates are expected to show evidence of planning, and developing their project which they go on to execute in Outcome 3. Throughout Outcome 2 and 3, they will need to demonstrate their evaluation skills and to log evidence of having changed their original plan to match with changes in circumstances.

Graphical information could be used in the production of drawing and in the interpretation of these drawings. Drawings could be produced to varying scales and candidates will have be expected to interpret their own drawings as well as those produced by others. Using Number will be an integral part of the Unit. Components will have to be measured accurately and materials required calculated, researched and costed.

Higher National Unit specification: support notes (cont)

Unit title: Furniture: Machine Woodworking

Open learning

This Unit is not appropriate for open learning due to the workshop equipment required.

For further information and advice, please refer to the SQA guide *Assessment and Quality Assurance for Open and Distance Learning* **www.sqa.org.uk**.

Candidates with disabilities and/or additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments or considering alternative Outcomes for Units. For information on these, please refer to the SQA document *Guidance on Alternative Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs*, which is available on SQA's website: **www.sqa.org.uk**.

General information for candidates

Unit title: Furniture: Machine Woodworking

In this Unit you will learn how to use woodworking machinery. You will research information and you will develop your techniques in machining timber-based components for furniture. You will learn how to plan in detail so that you have the equipment and materials you need prepared and you will learn how to schedule your work in such a way that makes the best use of your time.

You will start by creating a project file of background information as it is important that you learn about materials, machines and processes which are in harmony with the furniture component parts you will be making. As part of this process you will consider the processes surrounding the manufacture and you will create drawings which will help you in the workshop environment.

You will therefore bring together your research techniques, your scheduling knowledge and your craft skills to produce components agreed with your lecturer. You will also have to look into sourcing the materials you want to use.

One of the areas you will develop in this Unit is keeping your log book up to date. This is an important aspect of working work as you can not only log what is going well with your project but you can log why you have had to make changes. This shows that you evaluate your work as you progress. It also means that you quality assure your work as you develop your skills.

At all times you will comply with current health and safety legislation.