

Course rationale

National Courses reflect Curriculum for Excellence values, purposes and principles. They offer flexibility, provide more time for learning, more focus on skills and applying learning, and scope for personalisation and choice.

Every course provides opportunities for candidates to develop breadth, challenge and application. The focus and balance of assessment is tailored to each subject area.

The National 5 Practical Woodworking course provides a broad introduction to practical woodworking. It is largely workshop-based, combining elements of theory and practical woodworking techniques.

Candidates develop practical psychomotor skills (manual dexterity and control) in a universally popular practical craft. They are introduced to safe working practices and become proactive in matters of health and safety. They learn how to use a range of tools, equipment and materials safely and correctly.

Candidates develop skills in reading drawings and diagrams, measuring and marking out, cutting, shaping and finishing materials. They learn how to work effectively alongside others in a shared workshop environment. Course activities also provide opportunities to build self-confidence and to enhance skills in numeracy, thinking, planning, organising and communicating — these are all valuable skills for learning, for life and for work.

The course encourages candidates to become responsible and creative in their use of technologies and to develop attributes such as flexibility, enthusiasm, perseverance, reliability and confidence.

Purpose and aims

The National 5 Practical Woodworking course provides opportunities for candidates to gain a range of theoretical and practical woodworking skills relating to tools, equipment, processes and materials. They also develop skills in reading and interpreting working drawings and related documents as well as an understanding of health and safety.

The course is practical, exploratory and experiential in nature. It engages candidates with technologies, allowing them to consider the impact that practical technologies have on our environment and society.

Through this, they develop skills, knowledge and understanding of:

- ◆ woodworking techniques
- ◆ measuring and marking out timber sections and sheet materials
- ◆ safe working practices in workshop environments
- ◆ practical creativity and problem-solving skills
- ◆ sustainability issues in a practical woodworking context

Who is this course for?

This course is a broad-based qualification, suitable for learners with an interest in practical technologies. It is largely learner-centred, includes practical and experiential learning opportunities and is suitable for those wanting to progress onto further levels of study or a related career.

Course content

This course develops skills in three main areas. Each area provides opportunities for candidates to understand safe working practices, sustainability issues, and good practice in recycling within a workshop environment. Each area of study covers a different set of woodworking skills. All areas include skills and associated knowledge in measuring, marking out, cutting and jointing techniques.

The areas of study are:

Flat-frame construction

Candidates develop skills, knowledge and understanding in the use of woodworking tools and in making woodworking joints and assemblies commonly used in flat-frame joinery, involving complex features. Candidates develop their ability to read and use drawings and diagrams depicting both familiar and unfamiliar woodwork tasks.

Carcase construction

Candidates develop skills, knowledge and understanding in the use of woodworking tools and in making woodworking joints and assemblies commonly used in carcass construction, involving complex features. This may include working with manufactured board or with frames and panels. Candidates use working drawings or diagrams in both familiar and unfamiliar contexts that require some interpretation on their part.

Machining and finishing

Candidates develop skills, knowledge and understanding in using machine and power tools. Candidates also develop skills in a variety of woodworking surface preparations and finishing techniques.

Skills, knowledge and understanding

Skills, knowledge and understanding for the course

The following provides a broad overview of the subject skills, knowledge and understanding developed in the course:

- ◆ using a range of woodworking tools, equipment and materials safely and correctly for woodworking tasks with some complex features
- ◆ adjusting tools where necessary, following safe practices
- ◆ reading and interpreting drawings and diagrams in familiar and some unfamiliar contexts
- ◆ measuring and marking out timber sections and sheet materials in preparation for cutting and shaping tasks with some complex features
- ◆ practical creativity in the context of simple and familiar woodworking tasks with some complex features

- ◆ following, with autonomy, given stages of a practical problem-solving approach to woodworking tasks
- ◆ applying knowledge and understanding of safe working practices in a workshop environment
- ◆ knowledge and understanding of the properties and uses of a range of woodworking materials
- ◆ knowledge and understanding of sustainability issues in a practical woodworking context

Skills, knowledge and understanding for the course assessment

The following provides details of skills, knowledge and understanding sampled in the course assessment:

Practical activity		Question paper	
Skills	Candidates are required to demonstrate the ability to:	Knowledge and Understanding	Candidates are required to demonstrate a knowledge and understanding of:
Measuring and marking out	Use the measuring and marking out tools listed below: <ul style="list-style-type: none"> ◆ steel rule ◆ tape measure ◆ try-square ◆ marking gauge ◆ templates ◆ marking knife ◆ mortise gauge ◆ cutting gauge ◆ sliding bevel ◆ dovetail template ◆ outside calipers With evidence of ratio dimensioning (ie 1/3 thickness, 1/2 thickness).	Measuring and marking out	The use of the tools and equipment listed below: <ul style="list-style-type: none"> ◆ steel rule ◆ tape measure ◆ try-square ◆ marking gauge ◆ templates ◆ marking knife ◆ mortise gauge ◆ cutting gauge ◆ sliding bevel ◆ dovetail template ◆ outside calipers ◆ units of measurement ◆ ratio dimensioning (ie 1/3 thickness, 1/2 thickness)

<p>Reading and interpreting drawings and documents</p>	<p>Read and extract relevant information from:</p> <ul style="list-style-type: none"> ◆ working drawings, pictorial drawings, diagrams, cutting lists 	<p>Reading and interpreting drawings and documents</p>	<ul style="list-style-type: none"> ◆ working drawings, pictorial drawings, diagrams, cutting lists ◆ orthographic projection ◆ scale ◆ basic drawing conventions: line types outlines, centre lines, hidden detail and dimension lines ◆ reading and extracting information from working drawings: linear, radial, angular (45°) and diametric dimensions
<p>Materials</p>	<p>Work safely with natural and manmade materials.</p>	<p>Materials</p>	<p>Properties of woodworking materials listed below:</p> <ul style="list-style-type: none"> ◆ softwoods: white and red pine, cedar and larch ◆ hardwoods: ash, oak, beech, mahogany and meranti (Philippine mahogany) ◆ manufactured boards and veneered manufactured boards: chipboard, plywood, hardboard, MDF and blockboard ◆ dowel rod
<p>Bench work</p>	<p>Safely use tools listed below:</p> <ul style="list-style-type: none"> ◆ bench vice ◆ saws ◆ chisels ◆ mallet ◆ hammers ◆ pincers 	<p>Bench work</p>	<p>The safe use of the bench tools and their component parts listed below:</p> <ul style="list-style-type: none"> ◆ bench vice ◆ saws: tenon/back, coping, rip, cross-cut and panel ◆ chisels: bevel edged, mortise and firmer ◆ parts of chisels: tang, ferrule, leather washer and handle ◆ mallet

	<ul style="list-style-type: none"> ◆ planes ◆ spoke shave ◆ hand drills and braces ◆ screwdrivers ◆ sawing board/bench hook ◆ hand router ◆ bradawl ◆ nail punch 		<ul style="list-style-type: none"> ◆ hammers: cross-pein and claw ◆ pincers ◆ planes: jack, smoothing, plough, bull-nose, block, rebate and combination ◆ main parts of plane: cap iron, cutting iron, adjusting lever and adjusting nut, depth stops and fences ◆ spoke shave ◆ hand drills and braces ◆ screwdrivers: straight and cross-head ◆ sawing board/bench hook ◆ hand router ◆ bradawl ◆ nail punch
Cramping	Accurately and safely use cramping devices.	Cramping	<p>The safe use of cramping devices listed below:</p> <ul style="list-style-type: none"> ◆ cramps: sash cramp, G-cramp, mitre cramp, band cramp ◆ string and block <p>The purpose of dry cramping.</p>

Flat-frame jointing techniques	<p>Safely manufacture flat-frame joints listed below:</p> <ul style="list-style-type: none"> ◆ corner: butt, mitre, dowel, halving, bridle, haunched mortise and tenon ◆ T joints: butt, dowel, halving, bridle, stub and through mortise and tenon ◆ cross halving ◆ dovetail halving 	Flat-frame jointing techniques	<p>The construction and use of the flat-frame joints listed below:</p> <ul style="list-style-type: none"> ◆ corner: butt, mitre, dowel, halving, bridle, haunched mortise and tenon ◆ T joints: butt, dowel, halving, bridle, stub and through mortise and tenon ◆ cross halving ◆ dovetail halving <p>Selecting appropriate flat-frame joint types for given scenarios.</p>
Carcase jointing techniques	<p>Safely manufacture carcase construction joints listed below:</p> <ul style="list-style-type: none"> ◆ butt ◆ corner rebate ◆ through housing ◆ stopped housing ◆ dowel 	Carcase construction	<p>Construction and use of the carcase joints listed below:</p> <ul style="list-style-type: none"> ◆ butt ◆ corner rebate ◆ through housing ◆ stopped housing ◆ dowel <p>Selecting appropriate carcase joint types for given scenarios.</p>

<p>Mechanical fixings and adhesives</p>	<p>Safely use correct mechanical fixings:</p> <ul style="list-style-type: none"> ◆ nails ◆ proprietary flat-frame fixings ◆ proprietary carcass construction fixings ◆ knock down fixings <p>Safely use wood adhesives in a workshop environment.</p>	<p>Mechanical fixings and adhesives</p>	<p>Ironmongery listed below:</p> <ul style="list-style-type: none"> ◆ nails: round, oval, brads, panel pins ◆ screws: round/dome head, countersink, slotted, cross-head ◆ angle brackets ◆ corner blocks ◆ knock down fixings <p>Uses of wood adhesives and glues: interior and exterior.</p>
<p>Use and maintenance of machine and power tools</p>	<p>Safely use the machines and power tools listed below:</p> <p>Machines:</p> <ul style="list-style-type: none"> ◆ woodturning lathe ◆ belt sander ◆ disc sander ◆ pedestal/pillar drill ◆ mortise machine <p>Power tools:</p> <ul style="list-style-type: none"> ◆ drills ◆ sanders ◆ cordless screwdrivers ◆ jig saw 	<p>Safe use of machines and power tools</p>	<p>Safe working practice for operating the machines, tools and processes listed below and, where indicated, the component parts:</p> <p>Machine tools:</p> <ul style="list-style-type: none"> ◆ woodturning lathe: face plate and between centre turning ◆ lathe tools: forked/butterfly centre, dead centre, revolving centre, gouge, scraper, parting chisel and skew chisel ◆ parts of the lathe: bed, tailstock, tool rest, headstock ◆ preparing a blank for turning ◆ belt sander ◆ disc sander ◆ pedestal/pillar drill ◆ drill bits: twist, countersink rose, flat and Forstner ◆ mortise machine: setting depth, checking cutting chisel/drill, positioning and securing work piece

			<p>Power tools:</p> <ul style="list-style-type: none"> ◆ drills: corded and cordless ◆ sanders: orbital and belt ◆ cordless screwdrivers ◆ jig saw <p>Tool care and maintenance:</p> <ul style="list-style-type: none"> ◆ reporting faults ◆ inspecting cables, tool holding and guards ◆ dust extraction
<p>Surface preparation and finishing</p>	<p>Carry out preparation to natural wood and manmade boards before applying a finish.</p> <p>Apply finishes to natural wood and manmade boards.</p>	<p>Surface preparation and finishing</p>	<p>The wood preparation techniques listed below:</p> <ul style="list-style-type: none"> ◆ use of planes ◆ sanding ◆ abrasive types: glass and garnet ◆ abrasive grades: fine, medium and coarse ◆ scraping ◆ stopping ◆ filling <p>Techniques required to prepare for, and apply, the finishes listed below:</p> <ul style="list-style-type: none"> ◆ varnish ◆ stain ◆ wax ◆ oil: Danish, linseed and vegetable

<p>Care and maintenance of tools and machinery, and safe working practices</p>	<p>Complete a log book detailing evidence of good and safe working practices covering the following:</p> <ul style="list-style-type: none"> ◆ care and maintenance of tools and equipment ◆ reporting faults and fault reporting systems ◆ general condition before, during and after use ◆ position and condition of guards ◆ position and security of cutting tools on machine tools ◆ use of personal protective equipment ◆ setting a plane ◆ honing a chisel ◆ honing a plane iron 	<p>Safe working practices</p>	<p>Good practices and safe systems for general workshop and individual activities when manufacturing a wood product.</p> <p>Personal protective equipment: apron, gloves, safety goggles, safety specs, visors, dust protection.</p>
<p>Sustainability and recycling</p>	<p>Understand and follow workshop recycling practices and processes.</p>	<p>Sustainability and recycling</p>	<p>Best practice in selecting materials that are appropriate for a specific use.</p> <p>Understand and follow workshop recycling practices and processes.</p>

Skills, knowledge and understanding included in the course are appropriate to the SCQF level of the course. The SCQF level descriptors give further information on characteristics and expected performance at each SCQF level (www.scqf.org.uk).