

## National 5 Practical Woodworking

<b>Course code:</b>	C862 75
<b>Course assessment code:</b>	X862 75
<b>SCQF:</b>	level 5 (24 SCQF credit points)
<b>Valid from:</b>	session 2017–18

The course specification provides detailed information about the course and course assessment to ensure consistent and transparent assessment year on year. It describes the structure of the course and the course assessment in terms of the skills, knowledge and understanding that are assessed.

This document is for teachers and lecturers and contains all the mandatory information you need to deliver the course.

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# Course overview

The course consists of 24 SCQF credit points which includes time for preparation for course assessment. The notional length of time for a candidate to complete the course is 160 hours.

The course assessment has two components.

Component	Marks	Scaled mark	Duration
Component 1: question paper	60	30	1 hour
Component 2: practical activity	70	70	See course assessment section

Recommended entry	Progression
<p>Entry to this course is at the discretion of the centre.</p> <p>Candidates should have achieved the fourth curriculum level or the National 4 Practical Woodworking course or equivalent qualifications and/or experience prior to starting this course.</p>	<ul style="list-style-type: none"><li>◆ other qualifications in practical technologies or related areas</li><li>◆ further study, employment and/or training</li></ul>

## Conditions of award

The grade awarded is based on the total marks achieved across all course assessment components.

## 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:
<b>Measuring and marking out</b>	<p>Use the measuring and marking out tools listed below:</p> <ul style="list-style-type: none"> <li>◆ steel rule</li> <li>◆ tape measure</li> <li>◆ try-square</li> <li>◆ marking gauge</li> <li>◆ templates</li> <li>◆ marking knife</li> <li>◆ mortise gauge</li> <li>◆ cutting gauge</li> <li>◆ sliding bevel</li> <li>◆ dovetail template</li> <li>◆ outside calipers</li> </ul> <p>With evidence of ratio dimensioning (ie 1/3 thickness, 1/2 thickness).</p>	<b>Measuring and marking out</b>	<p>The use of the tools and equipment listed below:</p> <ul style="list-style-type: none"> <li>◆ steel rule</li> <li>◆ tape measure</li> <li>◆ try-square</li> <li>◆ marking gauge</li> <li>◆ templates</li> <li>◆ marking knife</li> <li>◆ mortise gauge</li> <li>◆ cutting gauge</li> <li>◆ sliding bevel</li> <li>◆ dovetail template</li> <li>◆ outside calipers</li> <li>◆ units of measurement</li> <li>◆ ratio dimensioning (ie 1/3 thickness, 1/2 thickness)</li> </ul>



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

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

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

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

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

<p><b>Care and maintenance of tools and machinery, and safe working practices</b></p>	<p>Complete a log book detailing evidence of good and safe working practices covering the following:</p> <ul style="list-style-type: none"> <li>◆ care and maintenance of tools and equipment</li> <li>◆ reporting faults and fault reporting systems</li> <li>◆ general condition before, during and after use</li> <li>◆ position and condition of guards</li> <li>◆ position and security of cutting tools on machine tools</li> <li>◆ use of personal protective equipment</li> <li>◆ setting a plane</li> <li>◆ honing a chisel</li> <li>◆ honing a plane iron</li> </ul>	<p><b>Safe working practices</b></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><b>Sustainability and recycling</b></p>	<p>Understand and follow workshop recycling practices and processes.</p>	<p><b>Sustainability and recycling</b></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](http://www.scqf.org.uk)).

# Skills for learning, skills for life and skills for work

This course helps candidates to develop broad, generic skills. These skills are based on [SQA's Skills Framework: Skills for Learning, Skills for Life and Skills for Work](#) and draw from the following main skills areas:

## **2 Numeracy**

2.2 Money, time and measurement

## **4 Employability, enterprise and citizenship**

4.3 Working with others

## **5 Thinking skills**

5.3 Applying

5.5 Creating

These skills must be built into the course where there are appropriate opportunities and the level should be appropriate to the level of the course.

Further information on building in skills for learning, skills for life and skills for work is given in the course support notes.

# Course assessment

Course assessment is based on the information provided in this document.

The course assessment meets the key purposes and aims of the course by addressing:

- ◆ breadth — drawing on knowledge and skills from across the course
- ◆ challenge — requiring greater depth or extension of knowledge and/or skills
- ◆ application — requiring application of knowledge and/or skills in practical or theoretical contexts as appropriate

This enables candidates to:

- ◆ apply skills, knowledge and understanding developed in the course to manufacture a finished product in wood to a given standard
- ◆ demonstrate practical creativity and problem-solving during the manufacturing process
- ◆ apply skills, knowledge and understanding to unfamiliar practical woodworking situations

## Course assessment structure: question paper

### Question paper

**60 marks**

The question paper gives candidates an opportunity to demonstrate skills, knowledge and understanding relating to:

Area	Range of marks
Measuring and marking out tools	4–6
Reading and interpreting drawings	4–6
Materials	4–6
Bench work	5–7
Flat-frame construction and assembly	6–8
Carcase construction and assembly	6–8
Use and care of machines and power tools	8–10
Surface preparation and finish	5–8
Health and safety	6–8
Sustainability and recycling	3–5

The question paper has 60 marks out of a total of 130 marks. This is scaled by SQA to represent 30% of the overall marks for the course assessment.

A proportion of marks are available for more challenging questions, which generally require interpretation and/or integration of more complex practical woodworking situations. This could be in the complexity of the expected response, the descriptions and/or justifications of more detailed and/or complex processes, or problem-solving.



Questions will allow for a variety of response types including short/limited responses and extended responses.

### **Setting, conducting and marking the question paper**

This question paper is set and marked by SQA and conducted in centres under conditions specified for external examinations by SQA.

Candidates will complete this in 1 hour.

Specimen question papers for National 5 courses are published on SQA's website. These illustrate the standard, structure and requirements of the question papers candidates sit. The specimen papers also include marking instructions.

## **Course assessment structure: coursework**

### **Practical activity**

**70 marks**

The practical activity allows candidates to demonstrate the application of skills and knowledge developed during the course to produce a finished product, to a given standard and specification.

The practical activity will be to manufacture a product and complete a log book. The log book will be provided as part of the assessment task.

Marks are awarded for:

<b>Area</b>
Log book
Flat-frame construction
Carcase construction
Machining/turnery
Finishing
Overall assembly

The practical activity gives candidates an opportunity to demonstrate the following skills, knowledge and understanding:

- ◆ selecting and using a range of woodworking tools, equipment, materials and finishes
- ◆ reading, interpreting and following given working drawings, outline specification information and cutting lists
- ◆ marking out, cutting and shaping component parts
- ◆ manufacturing a finished product to given drawings and standards
- ◆ working and using tools and equipment in accordance with recognised procedures and safe working practices

The practical activity has 70 marks out of a total of 130 marks. This is scaled by SQA to represent 70% of the overall marks for the course assessment.

### Practical activity overview

The standards and tolerances applicable to the product are as follows:

Operation	Tolerance
<b>Individual components</b>	
Planing (or similar)	±1mm
Marking out and cutting	±1mm
Machine/power tool tasks	±1mm
Joint gaps	Not to exceed 1mm
Overall sizes	±3mm

The product will allow candidates to demonstrate skills and apply knowledge gained from the course.

Hand, power and machine tools will be used in the manufacture of the product, as specified in the practical activity.

The product will be prepared, as specified, for the application of a finish. The finish will be appropriate to the practical activity (however any finish applied prior to external verification must not in any way affect the ability of the verifier to make judgements on assessor decisions).

While working on the practical activity, candidates must adhere to recognised safe working practices as well as those stipulated within their centre.

### Setting, conducting and marking the practical activity

This practical activity is:

- ◆ set by SQA, on an annual basis
- ◆ conducted under some supervision and control (although a high degree of supervision is required for health and safety purposes)

Evidence is internally assessed by centre staff in line with SQA's marking instructions. All marking is quality assured by SQA.

High-level instructions for centres, giving an overview of the product, materials and cutting list, are provided in advance.

Full instructions for candidates, giving specific jointing and manufacturing details, are contained within the annually issued assessment task.

## **Assessment conditions**

### **Time**

This practical activity is carried out over a period of time, starting at an appropriate point in the course, once all content has been delivered.

### **Supervision, control and authentication**

The practical activity must be carried out:

- ◆ without interruption by periods of learning and teaching
- ◆ in a workshop environment
- ◆ in time to meet the submission date set by SQA
- ◆ on an individual basis by the candidates (ie no group work is permitted)
- ◆ under supervision to ensure that work presented is the candidates' own
- ◆ under supervision to ensure a safe and controlled environment

### **Resources**

The practical activity is undertaken in open-book conditions and, as such, candidates can have access to learning and teaching materials, the internet, notes, exemplar materials, resources on classroom walls or anything similar while it is being undertaken.

The practical activity will include instructions for deliverers and candidates and this will detail any equipment or materials that they will need.

### **Reasonable assistance**

Candidates are expected to progress through each stage of the practical activity independently, having acquired the skills earlier in the course. Assessors will intervene throughout the undertaking of the practical activity to ensure the safe running of the workshop environment. However, where the assessor has to intervene, this must be recorded and reflected in the marks awarded in line with the marking instructions.

The practical activity is designed to discriminate between candidates. Once the practical activity has been completed, the product cannot be returned to the candidate for further work.

## **Evidence to be gathered**

Full instructions for the evidence requirements are contained within the assessment task. This will include:

- ◆ the completed product (and jigs created by the candidate)
- ◆ the completed log book
- ◆ record of any intervention relating to independence of work
- ◆ record of any intervention relating to safe working

All candidate evidence is internally assessed.

## **Volume**

One completed log book and one completed product is required for each candidate.

## **Grading**

A candidate's overall grade is determined by their performance across the course assessment. The course assessment is graded A–D on the basis of the total mark for all course assessment components.

### **Grade description for C**

For the award of grade C, candidates will typically have demonstrated successful performance in relation to the skills, knowledge and understanding for the course.

### **Grade description for A**

For the award of grade A, candidates will typically have demonstrated a consistently high level of performance in relation to the skills, knowledge and understanding for the course.

# Equality and inclusion

This course is designed to be as fair and as accessible as possible with no unnecessary barriers to learning or assessment.

For guidance on assessment arrangements for disabled candidates and/or those with additional support needs, please follow the link to the assessment arrangements web page: [www.sqa.org.uk/assessmentarrangements](http://www.sqa.org.uk/assessmentarrangements).

# Further information

The following reference documents provide useful information and background.

- ◆ [National 5 Practical Woodworking subject page](#)
- ◆ [Assessment arrangements web page](#)
- ◆ [Building the Curriculum 3–5](#)
- ◆ [Design Principles for National Courses](#)
- ◆ [Guide to Assessment](#)
- ◆ [SCQF Framework and SCQF level descriptors](#)
- ◆ [SCQF Handbook](#)
- ◆ [SQA Skills Framework: Skills for Learning, Skills for Life and Skills for Work](#)
- ◆ [Coursework Authenticity: A Guide for Teachers and Lecturers](#)
- ◆ [Educational Research Reports](#)
- ◆ [SQA Guidelines on e-assessment for Schools](#)
- ◆ [SQA e-assessment web page](#)

# Appendix: course support notes

## Introduction

These support notes are not mandatory. They provide advice and guidance to teachers and lecturers on approaches to delivering the course. They should be read in conjunction with this course specification and the specimen question paper and/or coursework.

The course is delivered over 160 hours of class time (as indicated by its SCQF level and points). This includes 40 hours for induction, extending the range of learning and teaching approaches, support, consolidation, and integration of learning, together with preparation for course assessment and the course assessment itself.

**Note:** this course is no longer auto-approved for delivery in centres. Centres that have not delivered in the three academic sessions prior to session 17–18 must seek approval to offer this qualification — full details of the approval process can be found at:

<http://www.sqa.org.uk/sqa/74661.6212.html>.

## Developing skills, knowledge and understanding

This section provides further advice and guidance about skills, knowledge and understanding that could be included in the course. Teachers and lecturers should refer to this course specification for the skills, knowledge and understanding for the course assessment. Course planners have considerable flexibility to select coherent contexts which will stimulate and challenge candidates, offering both breadth and depth.

The ‘approaches to learning and teaching’ section provides suggested experiences and activities that teachers and lecturers can build into their delivery, to develop the skills, knowledge and understanding of the course.

## Approaches to learning and teaching

National 5 Practical Woodworking, like all National Courses, has been developed to reflect Curriculum for Excellence values, purposes and principles. The approach to learning and teaching developed by individual centres should reflect these principles.

Learning in this course should be primarily practical, hands-on and experiential in nature.

Learning and teaching activities should be designed to stimulate candidates’ interest and to develop skills and knowledge to the required standard. Learning should be focused on practical activities so that skills are developed simultaneously with knowledge and understanding.

Candidates may demonstrate a range of preferences for learning. Teachers and lecturers should use a variety of strategies to deliver the course in a way that builds candidates’ competence and understanding. These could include demonstration, discussion, problem-solving, exploration and experimentation (particularly with materials).

In National 5 Practical Woodworking, whole-class demonstration and instruction is an important learning and teaching method. Practical demonstrations of woodworking techniques can be followed up by sessions with individual candidates or small groups and/or by close supervision and one-to-one assistance where required.

Where possible, visits to relevant local industrial/workshop environments should be undertaken. The use of video and online resources can also help to improve candidates' understanding.

Teachers and lecturers should employ co-operative and collaborative learning approaches to support and encourage candidates to achieve their full potential. Candidates engaged in this kind of learning capitalise on one another's resources and skills through sharing information, peer evaluation, and monitoring group work.

Group work is not assessed by SQA. However, it is a fundamental aspect of working in practical technologies and should be encouraged and developed by teachers and lecturers.

**Note:** group work **cannot** be used for course assessment purposes.

## Resources

Existing workshop equipment and classroom resources may be sufficient for delivering the course. Teachers and lecturers can also use digital resources to support knowledge consolidation.

Where possible, teachers and lecturers should source or produce models of completed work to enable candidates to visualise aspects of the course content. This may take the form of pre-built assemblies or work pieces that the candidates can use directly or in combination with the assemblies or items they create.

Visits to building sites, manufacturing joinery businesses, timber-framed house factories, sawmills and builders' merchants can be a valuable way for candidates to contextualise course content. Visits to local colleges to see the work being carried out by apprentices and/or students can also help candidates to identify future training/career pathways.

Online video clips of practical woodworking techniques are a valuable resource that can be used in class and for independent study. Informative short films of joinery work — eg the erection of timber frame houses and larger buildings — can also be found online.

## Health and safety

In this course, health and safety is paramount.

Each centre has statutory obligations as well as local advice on health and safety practices. Centres may also have policies and approaches to learning and teaching which support best practice in the workshop environment.

Candidates must be aware of the importance of responsible working and the need to ensure the safety of self and others at all times. Teachers and lecturers should take the opportunity to emphasise these responsibilities throughout the course.



When candidates begin each new topic, teachers and lecturers should give them a thorough introduction to the work required and to all aspects of safe working practices (this should include safe use of hand/machine/power tools, materials, finishes and workshop conduct). Videos or interactive computer programs can be used to introduce woodworking processes and safety aspects. These can also help candidates to relate the work of the course to the world of industry.

Teachers and lecturers can verify candidates' positive attitudes to safety, care and attention through observation of their working procedures and responsible use of tools. This can also be achieved through conversations, simple question and answer sessions and other demonstrations of safe working practices.

Proper tool care and recognition of the dangers of tool defects must be a recurrent theme in the course. Teachers and lecturers should encourage candidates to use a log book for detailing their understanding of and adherence to safe working practices.

## **Areas of study for candidates**

### **Subject knowledge**

Knowledge and understanding should not be taught in isolation from the practical aspects of the course. For example, when candidates are learning which tools and materials are associated with different jointing techniques, teachers and lecturers should encourage them to relate this knowledge to the practical work they are undertaking.

Candidates should be shown a completed example of each practical exercise to be undertaken so they can see the standard of work they are expected to produce. Orthographic and pictorial views can also help candidates to visualise items.

Candidates should be able to set up before a workshop session, select appropriate woodworking tools and materials, and tidy up after completion.

Candidates should learn the terminology associated with different tools and their uses before and during practical activities. Teachers and lecturers should help to reinforce candidates' knowledge and understanding of the names and uses of types of woodworking machine and power tools as well as their uses — turning, drilling, cutting, sanding, fixing.

Teachers and lecturers can use similar approaches to help candidates develop knowledge and understanding of the fixings and adhesives commonly associated with woodworking as well as the fitting and fixing of component parts. Examples of fixings should include nails, pins and wood screws as well as proprietary screws for manufactured board purposes.

It would be good practice for teachers and lecturers to introduce each of the power tools and machine tools separately and to plan practical sessions for their use. Alternatively, teachers and lecturers could introduce 'families' of similar tools and items of equipment.

## **Reading and interpreting drawings**

Teachers and lecturers should provide candidates with the opportunity to practise reading and interpreting orthographic and pictorial drawings and cutting lists. It is expected that drawings will use a variety of line types and conventions. Where British Standard conventions are used in drawings, teachers and lecturers should explain these to candidates.

Dimensioning should be mostly linear although it will be necessary to include diameters and radii appropriate to the item being made. Cutting lists of materials can be supplied, checked off by teachers and lecturers, and then reviewed against a finished product.

Teachers and lecturers can help candidates to develop drawing-reading skills by giving them clear drawings to compare with scale physical models of the items drawn. When candidates are familiar with the format and content of cutting lists, they can try preparing their own using templates.

## **Sustainability and recycling**

Whenever possible, teachers and lecturers should introduce sustainability concepts such as the sourcing and cost of materials, waste and cutting allowances, recycling and reuse. These concepts can be explored through workshop learning and teaching activities, site visits, and online resources. Teachers and lecturers should help candidates to understand what they can do as individuals and as a class to support sustainability.

## **Construct a range of woodworking joints**

Candidates should be able to produce a range of joint types. Candidates can cover all of these jointing techniques by producing test pieces rather than complete items. This will allow candidates to gain the confidence and skills required for working on a final product.

## **Assemble a flat-frame/carcass with four or more joints**

Candidates should be able to produce woodworking assemblies with four or more joints. One or two items could be produced to incorporate most of the required skills. Candidates should complete a log book as part of the activity.

At this stage, teachers and lecturers must demonstrate and closely supervise all stages of manufacture. They should emphasise accuracy and quality when manufacturing an item. If candidates produce a component that is not of an acceptable standard they should be given the chance to replace it.

## **Surface preparation and finish**

Candidates should demonstrate competence in preparing and finishing timbers and manufactured boards. Surface preparations will include planing, sanding, stopping, and these should be done to a suitable standard. Surface finishes will include staining, varnishing, oiling or application of wax finish, and be free of blemish.

Teachers and lecturers should give candidates the opportunity to try out different preparatory and finishing techniques. Candidates could practise various timber finishes separately as each has its own techniques and methods. Candidates should only apply finishing techniques to actual products once they have become proficient in these skills.

## **Assemble a woodworking product comprising four or more components with the aid of machine and power tools**

Candidates should be able to demonstrate competence in manufacturing a timber product comprising four or more components. Candidates should use one machine tool and two power tools to manufacture the product. The product does not need to be finished.

At this stage, teachers and lecturers must demonstrate and closely supervise all stages of manufacture. They should emphasise accuracy and quality when manufacturing an item. If candidates produce a component that is not of an acceptable standard they should be given the chance to replace it.

## **Suggested tasks for candidates**

Candidates should be able to complete the following tasks to help them develop the skills, knowledge and understanding required to complete the course assessments.

Prepare for flat-frame woodworking tasks by:

- ◆ selecting the appropriate woodworking tools, equipment and materials
- ◆ confirming that woodworking tools and equipment are in good condition and safe working order before, during and after use
- ◆ adjusting tools where necessary and following safe working practices
- ◆ using correct names and terminology when referring to woodworking tools, equipment, materials and processes

Construct a range of flat-frame woodwork joints by:

- ◆ preparing timber by planing, or similar, to within specified tolerance
- ◆ marking out joints to within specified tolerance
- ◆ constructing joints so that joint gaps do not exceed specified tolerance
- ◆ using tools and equipment safely and correctly

Assemble a flat-frame with four or more joints by:

- ◆ checking materials supplied against a cutting list
- ◆ marking out the component parts in accordance with working drawings and within specified tolerance
- ◆ constructing the component parts so that joint gaps and overall sizes are within specified tolerance
- ◆ working in accordance with recognised procedures and safe working practices
- ◆ carrying out good practice in terms of sustainability and recycling

Prepare for carcass construction woodworking tasks by:

- ◆ selecting the appropriate woodworking tools, equipment and materials
- ◆ confirming that woodworking tools and equipment are in good condition and safe working order before, during and after use
- ◆ adjusting tools where necessary and following safe working practices
- ◆ using correct names and terminology when referring to woodworking tools, equipment, materials and processes

Construct a range of woodwork joints used in carcass construction by:

- ◆ marking out joints to within specified tolerance
- ◆ constructing joints so that joint gaps do not exceed specified tolerance
- ◆ using tools and equipment safely and correctly

Assemble a carcass with four or more joints by:

- ◆ checking materials supplied against a cutting list
- ◆ marking out the component parts in accordance with working drawings and within specified tolerance
- ◆ assembling the component parts so that joint gaps and overall sizes are within specified tolerance
- ◆ working in accordance with recognised procedures and safe working practices
- ◆ carrying out good practice in terms of sustainability and recycling

Prepare for, and use, a range of practical woodworking machining and finishing techniques by:

- ◆ selecting the appropriate woodworking machine and power tools and woodworking equipment
- ◆ confirming that woodworking machine and power tools and woodworking equipment are in good condition and safe working order before, during and after use
- ◆ adjusting tools where necessary and following safe working practices
- ◆ carrying out machine and power tool operations with precision, safely and correctly, in correct sequence and to specified tolerances and standards
- ◆ using correct names and terminology when referring to woodworking tools, machines, equipment, materials, processes and finishes

Apply a range of finishes to timber and manufactured board by:

- ◆ selecting the appropriate materials and finishes
- ◆ preparing surfaces to a competent standard and that comply with manufacturers' instructions and good practice
- ◆ preparing and applying surface finishes that are free from significant blemish and that comply with manufacturers' instructions and good practice

Assemble a woodworking product comprising four or more components with the aid of machine and power tools by:

- ◆ checking materials supplied against a cutting list and working drawings
- ◆ marking out the component parts in accordance with working drawings and within specified tolerance
- ◆ assembling the component parts such that joint gaps and overall sizes are within specified tolerance
- ◆ working in accordance with recognised procedures and safe working practices
- ◆ carrying out good practice in terms of sustainability and recycling

## **Preparing for course assessment**

The course has in-built time which teachers and lecturers can use at their discretion to enable candidates prepare for course assessment. This time may be used near the start of the course and at various other points for consolidation and support.

Teachers and lecturers are free to consider how they will prepare candidates to undertake the course assessment in a way that ensures they will be as successful as possible.

For the question paper, time will be required for:

- ◆ revision and consolidation of learning
- ◆ question paper technique(s)
- ◆ familiarisation with past, specimen and sample question papers
- ◆ practice question paper(s) — eg prelim examination

For the practical activity, time will be required for:

- ◆ revision and consolidation of learning
- ◆ familiarisation with practical activity

## **Developing skills for learning, skills for life and skills for work**

Course planners should identify opportunities throughout the course for candidates to develop skills for learning, skills for life and skills for work.

Candidates should be aware of the skills they are developing and teachers and lecturers can provide advice on opportunities to practise and improve them.

SQA does not formally assess skills for learning, skills for life and skills for work.

There may also be opportunities to develop additional skills depending on approaches being used to deliver the course in each centre. This is for individual teachers and lecturers to manage.

Skill	How to develop
<b>2 Numeracy</b>	
2.2 Money, time and measurement	<ul style="list-style-type: none"> <li>◆ measuring and marking out materials in accordance with working drawings</li> <li>◆ interpreting and calculating dimensions and scale in drawings/diagrams/orthographic projections and applying them to work pieces</li> <li>◆ checking the accuracy of completed components and assemblies against drawings and cutting lists</li> <li>◆ manufacturing items to strict measurements of tolerances and accuracy</li> <li>◆ managing time to achieve set tasks and goals</li> <li>◆ discussing costs in the context of sustainability and recycling</li> </ul>
<b>4 Employability, enterprise and citizenship</b>	
4.3 Working with others	<ul style="list-style-type: none"> <li>◆ sharing tools, equipment and materials with others during workshop practice and working together to balance individual tasks and time</li> <li>◆ participating in group work</li> <li>◆ assisting other candidates to carry out tasks</li> </ul>
<b>5 Thinking skills</b>	
5.3 Applying	<ul style="list-style-type: none"> <li>◆ learning new techniques and processes and applying them in practical tasks</li> <li>◆ planning and organising tools, equipment and materials in preparation for a practical activity</li> <li>◆ applying practical skills to solve a problem in a drawing or specification</li> </ul>
5.5 Creating	<ul style="list-style-type: none"> <li>◆ creating assemblies based on drawings and diagrams and applying individual interpretation where necessary</li> </ul>

# Administrative information

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**Published:** August 2019 (version 2.1)

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## History of changes to course specification

Version	Description of change	Date
2.0	Course support notes added as appendix.	September 2017
2.1	Removed unnecessary detail on tolerances from the practical activity overview in the 'Course assessment' section.	August 2019

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