QUALIFICATION HANDBOOK

City & Guilds Level 3 Diplomas in Furniture Restoration, Installation, Design & Making, Furnishings and Wood Machining (5780)

April 2022 Version 2.5

City & Guilds

Qualification at a glance

Subject area	**Furniture, Furnishings and Wood machining**
City & Guilds number	5780
Age group approved	All
Assessment	Assignment/multiple choice
Fast track	Available
Support materials	Centre handbook
Registration and certification	Consult the Walled Garden/Online Catalogue for last dates

Title and level	GLH	TQT	City & Guilds number	Accreditation number
Level 3 Diploma in Furniture Design and Making	615	840	5780-30	600/1978/5
Level 3 Diploma in Furnishings - Mattress Making	n/a	n/a	5780-31	600/3200/5
Level 3 Diploma in Furnishings - Traditional Upholstery	723	960	5780-31	600/3197/9
Level 3 Diploma in Furnishings - Modern Upholstery	563	780	5780-31	600/3198/0
Level 3 Diploma in Wood Machining	478	600	5780-32	600/3206/6
Level 3 Diploma in Wood Machining - CNC Machines	417	550	5780-32	600/3205/4
Level 3 Diploma in Furniture Installation	326	440	5780-33	600/1977/3
Level 3 Diploma in Furniture Restoration	405	530	5780-34	600/2340/5

Version and date	Change detail	Section
2.0 Apr 2013	Corrected titling of pathway qualification (5780-31) and Units 301/315/318	**Structure/ Units**
2.1 March 2017	Centre devised guidance	**Assessment**
2.4 August 2017	Added TQT details Deleted QCF	**Qualification at a glance, Structure** **Throughout**
2.5 April 2022	TQT details updated	**Qualification at a glance, Structure**

Contents

1 Introduction

This document tells you what you need to do to deliver the qualifications:

Area	Description
Who are the qualifications for?	They are ideal for anyone who is working in, or wants to work, in the furniture, furnishings and wood machining industry.
What do the qualifications cover?	They allow candidates to learn, develop and practise the skills required for employment and/or career progression in the Furniture Making sector.
Are the qualifications part of a framework or initiative?	They serves as a technical certificate in the Furniture, Furnishings and Interiors framework Apprenticeship framework.
What opportunities for progression are there?	Candidates may be able to pursue any of the following opportunities for progression: • Continue to develop craft and technical skills and experience in Upholstery & Soft Furnishings and striving to "be the best" in their chosen occupational route and have pride in their work. • Participate in relevant in-house company training or external learning, where available and/or offered. • Broaden and develop their skill base by progression into other job roles within the Furniture industry – "horizontal progression". • Progress into higher level jobs within the Furniture industry such as Team Leader/Supervisor, or into other functional areas such as design, marketing, sales, planning, procurement, finance or warehouse and distribution. • Undertake a related Engineering Apprenticeship. • Undertake a Higher/Advanced Diploma in Manufacturing and Product Design, Construction and the Built Environment or the Creative and Media. • Undertake Assessor and Verifier qualifications. • Undertake further training in Management & Leadership, Lean Manufacturing or Business Improvement Techniques. • Progressing to an industry related undergraduate programme e.g. Engineering, Design or Business Studies. Entry may require additional training/learning.

Structures

To achieve the **5780-30 Level 3 Diploma in Furniture Design and Making**, learners must achieve **61** credits from the mandatory units and a minimum of **23** credits from the optional units.

Unit accreditation number	City & Guilds unit	Title	Credits
Mandatory			
D/503/2151	210	Health and safety within furniture and furnishing making environments	3
T/503/2222	229	Sustainability in the timber trade	3
F/503/2188	301	Assemble furniture components by hand	9
M/503/2168	313	Prototype design in furniture making	24
T/503/2172	315	Research and product design in furniture making	12
F/503/2191	319	Supervision in a furniture and furnishing making environment	10
Optional			
Y/503/2214	205	Attaching doors, drawers and fittings in furniture making	3
T/503/2219	209	Hand finishing methods in furniture making	14
D/503/2215	228	Spray finishing in furniture making	20
K/503/2220	230	Technical drawings and workshop geometry	7
M/503/0422	311	Produce drawings using CAD	9
J/503/2161	312	Production planning in furniture and furnishing making	18

To achieve the **5780-31 Level 3 Diploma in Furnishings – Mattress Making**, learners must achieve **70** credits from the mandatory units. Learners can achieve up to **33** credits from the elective units but they will not count towards achievement of the overall qualification.

Unit accreditation number	City & Guilds unit	Title	Credits
Mandatory			
F/503/2224	203	Design schemes in furnishings	14
D/503/2151	210	Health and safety within furniture and furnishing making environments	3
R/503/2230	221	Mattress quilting operations	8
D/503/2229	223	Modern mattress making	6

Unit accreditation number	City & Guilds unit	Title	Credits
J/503/2161	312	Production planning in furniture and furnishing making	18
F/503/2191	319	Supervision in a furniture and furnishing making environment	10
F/503/2207	321	Traditional mattress manufacture	11
Elective			
M/503/0422	311	Produce drawings using CAD	9
J/503/2208	314	Prototype design in modern upholstery	24

To achieve the **5780-31 Level 3 Diploma in Furnishings – Traditional Upholstery**, learners must achieve **96** credits from the mandatory units. Learners can achieve up to **33** credits from the elective units but they will not count towards achievement of the overall qualification.

Unit accreditation number	City & Guilds unit	Title	Credits
Mandatory			
F/503/2224	203	Design schemes in furnishings	14
D/503/2151	210	Health and safety within furniture and furnishing making environments	3
L/503/2209	231	Traditional furniture upholstery	22
J/503/2161	312	Production planning in furniture and furnishing making	18
T/503/2205	317	Restoration of traditional furniture upholstery	29
F/503/2191	319	Supervision in a furniture and furnishing making environment	10
Elective			
M/503/0422	311	Produce drawings using CAD	9
J/503/2208	314	Prototype design in modern upholstery	24

To achieve the **5780-31 Level 3 Diploma in Furnishings – Modern Upholstery**, learners must achieve **78** credits from the mandatory units. Learners can achieve up to **33** credits from the elective units but they will not count towards achievement of the overall qualification.

Unit accreditation number	City & Guilds unit	Title	Credits
Mandatory			
F/503/2224	203	Design schemes in furnishings	14
D/503/2151	210	Health and safety within furniture and furnishing making environments	3
K/503/2217	222	Modern furniture upholstery	13
J/503/2161	312	Production planning in furniture and furnishing making	18
A/503/2206	316	Research and product development for modern furniture upholstery	20
F/503/2191	319	Supervision in a furniture and furnishing making environment	10
Elective			
M/503/0422	311	Produce drawings using CAD	9
J/503/2208	314	Prototype design in modern upholstery	24

To achieve the **5780-32 Level 3 Diploma in Wood Machining**, learners must achieve **60** credits from the mandatory units.

Unit accreditation number	City & Guilds unit	Title	Credits
Mandatory			
D/503/2151	210	Health and safety within furniture and furnishing making environments	3
F/503/2238	214	Manufacturing wood-based components using powered tools	6
A/503/2237	216	Manufacturing wood-based components using sanding machines	6
T/503/2222	229	Sustainability in the timber trade	3
A/503/2240	305	Environmental management and waste management in woodmachining	6
J/503/2211	308	Manage the production of wood-based components using machines	15
J/503/2239	310	Manufacturing wood-based components using profiling machines	10
F/503/2210	322	Workflow management in woodmachining	11

To achieve the **5780-32 Level 3 Diploma in Wood Machining – CNC Machines**, learners must achieve **55** credits from the mandatory units.

Unit accreditation number	City & Guilds unit	Title	Credits
Mandatory			
D/503/2151	210	Health and safety within furniture and furnishing making environments	3
T/503/2236	211	Manufacturing wood-based components using CNC machines	6
T/503/2222	229	Sustainability in the timber trade	3
A/503/2240	305	Environmental management and waste management in woodmachining	6
L/503/2212	309	Manufacturing wood-based components using CNC machines	17
M/503/0422	311	Produce drawings using CAD	9
F/503/2210	322	Workflow management in woodmachining	11

To achieve the **5780-33 Level 3 Diploma in Furniture Installation**, learners must achieve **35** credits from the mandatory units and a minimum of **9** credits from the optional units.

Unit accreditation number	City & Guilds unit	Unit title	Credit value
Mandatory			
D/503/2151	210	Health and safety within furniture and furnishing making environments	3
T/503/2222	229	Sustainability in the timber trade	3
H/503/2197	304	Design work for fitted furniture installation	11
K/503/2203	318	Site survey for furniture installation	11
M/503/2204	320	Supervision of fitted furniture installation	7
Optional			
M/503/0422	311	Produce drawings using CAD	9
T/503/2172	315	Research and product development in furniture making	12

To achieve the **5780-34 Level 3 Diploma in Furniture Restoration**, learners must achieve **35** credits from the mandatory units and a minimum of **18** credits from the optional units.

Unit accreditation number	City & Guilds unit	Unit title	Credit value
Mandatory			
D/503/2151	210	Health and safety within furniture and furnishing making environments	3
H/503/2152	302	Assessment of furniture restoration	13
M/503/2154	307	Furniture restoration	19
Optional			
Y/503/2214	205	Attaching doors, drawers and fittings in furniture making	3
T/503/2219	209	Hand finishing methods in furniture making	14
F/503/2174	220	Timber technology in furniture making	6
Y/503/2200	232	Veneering methods in furniture making	3
F/503/2188	301	Assemble furniture components by hand	9
T/503/2155	303	Decorative veneering in furniture making	11
F/503/2157	306	Finishing methods in furniture restoration	18

Total Qualification Time

Total Qualification Time (TQT) is the total amount of time, in hours, expected to be spent by a Learner to achieve a qualification. It includes both guided learning hours (which are listed separately) and hours spent in preparation, study and assessment.

Title and level	GLH	TQT
Level 3 Diploma in Furniture Design and Making	615	840
Level 3 Diploma in Furnishings - Mattress Making	n/a	n/a
Level 3 Diploma in Furnishings - Traditional Upholstery	723	960
Level 3 Diploma in Furnishings - Modern Upholstery	563	780
Level 3 Diploma in Wood Machining	478	600
Level 3 Diploma in Wood Machining - CNC Machines	417	550

Level 3 Diploma in Furniture Installation	326	440
Level 3 Diploma in Furniture Restoration	405	530

The Level 3 Diploma in Furnishings - Mattress Making 600/3200/5 is no longer available.

2 Centre requirements

Approval

If your centre is approved to offer the qualification **the City & Guilds Making and Installing Furniture (5610)** you can apply for the new **Level 3 Furniture, Furnishings and Wood Machining** approval using the *Fast Track Approval Form*, available from the City & Guilds website.

Centres should use the fast track form if:

- there have been no changes to the way the qualifications are delivered, and
- they meet all of the approval criteria in the fast track form guidance notes.

Fast track approval is available for 12 months from the launch of the qualification. After 12 months, the Centre will have to go through the standard Qualification Approval Process. The centre is responsible for checking that fast track approval is still current at the time of application.

To offer these qualifications, new centres will need to gain both centre and qualification approval. Please refer to the *Centre Manual - Supporting Customer Excellence* for further information. Centre staff should familiarise themselves with the structure, content and assessment requirements of the qualification[s] before designing a course programme.

Resource requirements

Physical resources and site agreements

Centres can use specially designated areas within a centre to assess. The equipment, systems and machinery must meet industrial standards and be capable of being used under normal working conditions.

Centre staffing

Staff delivering these qualifications must be able to demonstrate that they meet the following occupational expertise requirements. They should:

- be occupationally competent or technically knowledgeable in the areas for which they are delivering training and/or have experience of providing training. This knowledge must be to the same level as the training being delivered
- hold the Level 2 Furniture, Furnishings and Wood Machining, or an equivalent qualification
- have recent relevant experience in the specific area they will be assessing
- have credible experience of providing training.

Centre staff may undertake more than one role, e.g. tutor and assessor or internal verifier, but cannot internally verify their own assessments.

Assessors and internal verifiers

Centre staff should hold, or be working towards, the relevant Assessor/Verifier (A/V) units for their role in delivering, assessing and verifying these qualifications, or meet the relevant experience requirements outlined above.

Assessor/Verifier (A/V) units are valued as qualifications for centre staff, but they are not currently a requirement for the qualifications.

Continuing Professional Development (CPD)

Centres must support their staff to ensure that they have current knowledge of the occupational area, that delivery, mentoring, training, assessment and verification is in line with best practice, and that it takes account of any national or legislative developments.

Centre staff are also expected to demonstrate their CPD achievement of at least 20 CPD points from the Institute of Books, each year.

Candidate entry requirements

City & Guilds does not set entry requirements for these qualifications. However, centres must ensure that candidates have the potential and opportunity to gain the qualifications successfully.

Age restrictions

There is no age restriction for this qualification unless this is a legal requirement of the process or the environment.

3 Delivering the qualification

Initial assessment and induction

An initial assessment of each candidate should be made before the start of their programme to identify:

- if the candidate has any specific training needs
- support and guidance they may need when working towards their qualifications
- any units they have already completed, or credit they have accumulated which is relevant to the qualifications
- the appropriate type and level of qualification.

We recommend that centres provide an induction programme so the candidate fully understands the requirements of the qualifications, their responsibilities as a candidate, and the responsibilities of the centre. This information can be recorded on a learning contract.

Support materials

The following resource is available for this qualification:

Description	How to access
Developing assignments – guidance for centres	**www.cityandguilds.com**

4 Assessment

This qualification is assessed by a combination of online multiple choice tests and centre and marked assignments covering practical skills and underpinning knowledge. The table below provides details on the assessment methods for each unit.

Unit	Unit title	Assessment method / where to obtain assessment materials
203	Design schemes in furnishings	Assignment, centre devised
205	Attaching doors, drawers and fittings in furniture making	Assignment, centre devised
209	Hand finishing methods in furniture making	Assignment, centre devised
210	Health and safety within furniture and furnishing making environments	Multiple choice, **www.cityandguilds.com/5780**
211	Manufacturing wood-based components using CNC machines	Assignment, centre devised
214	Manufacturing wood-based components using powered tools	Assignment, centre devised
216	Manufacturing wood-based components using sanding machines	Assignment, centre devised
220	Timber technology in furniture making	Assignment, centre devised
221	Mattress quilting operations	Assignment, centre devised
222	Modern furniture upholstery	Assignment, centre devised
223	Modern mattress making	Assignment, centre devised
228	Spray finishing in furniture making	Assignment, centre devised
229	Sustainability in the timber trade	Assignment, centre devised
230	Technical drawings and workshop geometry	Assignment, centre devised
231	Traditional furniture upholstery	Assignment, centre devised
232	Veneering methods in furniture making	Assignment, centre devised

Unit	Unit title	Assessment method / where to obtain assessment materials
301	Assemble furniture components	Assignment, centre devised
302	Assessment of furniture restoration	Assignment, centre devised
303	Decorative veneering in furniture making	Assignment, centre devised
304	Design work for fitted furniture installation	Assignment, centre devised
305	Environmental management and waste management in woodmachining	Assignment, centre devised
306	Finishing methods in furniture restoration	Assignment, centre devised
307	Furniture restoration	Assignment, centre devised
308	Manage the production of wood-based components using machines	Assignment, centre devised
309	Manufacturing wood-based components using CNC machines	Assignment, centre devised
310	Manufacturing wood-based components using profiling machines	Assignment, centre devised
311	Produce drawings using CAD	Assignment, centre devised
312	Production planning in furniture and furnishing making	Assignment, centre devised
313	Prototype design in furniture making	Assignment, centre devised
314	Prototype design in modern upholstery	Assignment, centre devised
315	Research and product design in furniture making	Assignment, centre devised
316	Research and product development for modern furniture upholstery	Assignment, centre devised
317	Restoration of traditional furniture upholstery	Assignment, centre devised
318	Site survey for furniture installation	Assignment, centre devised
319	Supervision in a furniture and furnishing making environment	Assignment, centre devised
320	Supervision of fitted furniture installation	Assignment, centre devised
321	Traditional mattress manufacture	Assignment, centre devised

Unit	Unit title	Assessment method / where to obtain assessment materials
322	Workflow management in woodmachining	Assignment, centre devised

Centre set and marked assessments

City & Guilds has provided separate guidance for writers of centre based assessments which should be read in conjunction with this document, entitled, ***'GM1 - Developing centre devised assessments –*** *guidance for centre based assessment writers'.*

A set of generic recording forms is also provided as follows:

- *Assessment tasks (AD1)*
- *Assessment grading criteria (AD2)*
- *Assessment sign off form (AD3)*
- *Evidence recording form (GF1)*
- *Assessment unit front and mark sheet (GF2)*
- *Assessment task front sheet (GF3)*
- *Assessment unit mark sheet (GF4)*
- *Assessment feedback and action plan form (GF5)*
- *Qualification assessment tracking form (GF6)*
- *Group assessment tracking form (GF7)*

A full explanation of the use of these forms can be found in the centre devised assessment writing guidance. All of this material is available to download from the City & Guilds website at ***http://www.cityandguilds.com/delivering-our-qualifications/centre-development/quality-assurance/quality-assurance-documents*** *.*

Approval process for centre set assignments

Centre set assignments must be approved by the external verifier before use. For each assignment, the *Assignment Sign Off Sheet* (AD3) must be completed and be made available to the EV for inspection.

Time constraints

The following must be applied to the assessment of this qualification:

- Candidates must finish their assessment within six months
- Assignments should take no longer than 8 hours. If they do, centres should consider why this is, and make sure that they are not trying to gather too much evidence.

Test specifications

The way the knowledge is covered by each test is laid out in the table below:

Test 1: Unit 210
Duration: 60 minutes

Outcome	Number of questions	%
1. Know health and safety requirements in the workplace	29	72.5
2. Know how to identify hazards and risks in the workplace	11	27.5
Total	**40**	**100**

5 Units

Availability of units

The following units can also be obtained from the centre resources section of the City & Guilds website, and are also available on The Register of Regulated Qualifications: **http://register.ofqual.gov.uk/Unit**

Structure of units

These units each have the following:

- City & Guilds unit number
- Title
- Unit Accreditation Number (UAN)
- Level
- Credit value
- Recommended Guided Learning Hours (GLH)
- Endorsement by a sector or other appropriate body
- Unit aim(s)
- Learning outcomes which are comprised of a number of assessment criteria
- Range (where applicable)
- Notes for guidance (where applicable).

Unit 203 Design schemes in furnishings

UAN:	**F/503/2224**
Level:	Level 2
Credit value:	14
GLH:	90
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to provide the learner with the knowledge and skills to research, develop, evaluate, produce and present design schemes in furnishings. The skills covered by this unit include: researching design styles, choice of materials and the influence colour, setting, backdrop has on design schemes. Also includes the evaluation of design schemes and creation of specifications to support media.

Learning outcome
The learner will: 1. know how to create design schemes in furnishings
Assessment criteria
The learner can: 1.1 describe the **aims** of design schemes 1.2 describe **information** required to create design schemes 1.3 describe different formats of **design schemes** 1.4 outline **processes** of developing design schemes 1.5 explain the importance of researching **products** 1.6 describe **techniques** to meet design scheme objectives 1.7 describe **factors** affecting material choice 1.8 outline how to record data to support **evaluation** decisions 1.9 explain the information that should be included in **specifications**.

Range
Aims Purpose, durability, comfort, appearance, budgetary limits **Information** Size, colour, texture, style, setting, lighting, contrast **Design schemes** Mood boards, mock-ups, samples, test pieces, small scale realisation techniques

Processes
Discussion, create shape, colour combinations, material choice, recording, measuring, sketching, adjusting, evaluating, pinning, trimming

Products
Use of materials, current designs, product trends, shapes, styles

Techniques
Preparing, forming, joining, assembling, manipulating, editing, finishing

Factors
Colour, contrast, texture (softness, hardness), cost, availability, function, durability

Evaluation
Performance, function, ease of use, user/audience response

Specifications
Units of measurement, conventions, terms used, formats, material, colour

Learning outcome
The learner will: 2. be able to create design schemes
Assessment criteria
The learner can: 2.1 research products for **design schemes** 2.2 create design schemes 2.3 evaluate design scheme 2.4 produce specifications from design schemes.

Range
Design schemes Mood board, samples, sketches

Unit 205 Attaching doors, drawers and fittings in furniture making

UAN:	**Y/503/2214**
Level:	Level 2
Credit value:	3
GLH:	20
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	To be able to attach various types of fittings, drawers and doors used within the furniture industry and have an understanding of the faults that can occur during this part of the process. This unit will also deal with manufacturer's instructions and safe working practices when attaching fittings.

Learning outcome
The learner will: 1. know how to fit doors, drawers and attach fittings in furniture making
Assessment criteria
The learner can: 1.1 describe the purpose of technical specification 1.2 list **terms** used in technical specifications 1.3 describe functions and uses of **tools and equipment** 1.4 describe handling characteristics of **materials** 1.5 describe **faults** that may lead to rejection of doors or drawers 1.6 describe methods for attaching drawers and doors 1.7 describe functions of **fittings** 1.8 describe how to resolve **fitting faults** 1.9 describe **methods** for attaching fittings 1.10 explain how to quality check 1.11 describe consequences of not carrying out quality checks 1.12 describe **safe working practice**

Range
Terms Jobs sheet, drawings, components list, tolerance of +/- 0.5mm **Tools and equipment** Sander, scraper, drills, staple gun, pin gun, screw gun, cramps, Marking gauge, tape measure

Materials
Natural timber and wood composites

Faults
Incorrect positioning of panels, alignment, appearance of wood, warping, quality

Fittings
Hinges, mouldings, handles, runners, stops, locks, castors, catches, brackets, action mechanisms, pre-cut glassware

Fitting faults
Re-alignment, return to originator

Methods
Doors and drawers: hinges, runners, handles
Fittings: screwing, pinning, bolting, cam and dowel

Safe working practice
Manufacturers' instructions, legal requirements (Control Of Substances Hazardous to Health COSHH, Provision and Use of Work Equipment Regulations PUWER, Health And Safety At Work Act HASAWA, Personal Protective Equipment PPE)

Learning outcome
The learner will: 2. be able to fit doors, drawers and attach fittings in furniture making
Assessment criteria
The learner can: 2.1 maintain a tidy work area 2.2 organise tools and equipment for effective working 2.3 demonstrate resolving faults 2.4 position **fittings** 2.5 attach fittings 2.6 fit doors and drawers 2.7 demonstrate quality checking methods.

Range
Fittings Hinges, mouldings, handles, runners, stops

Unit 209 Hand finishing methods in furniture making

UAN:	**T/503/2219**
Level:	Level 2
Credit value:	14
GLH:	120
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to provide the learner with the knowledge and practical skills to be able to prepare furniture and coating materials. This unit will cover preparing work pieces and materials, taking into account the faults that could arise and any application faults with materials. The unit give an awareness of health and safety legislation using data sheets for using and disposing of waste materials.

Learning outcome
The learner will: 1. understand the process of hand finishing furniture
Assessment criteria
The learner can: 1.1 explain the purpose of technical specification 1.2 list **terms** used in technical specifications 1.3 describe functions of **tools and equipment** 1.4 describe functions of **materials** 1.5 describe preparations for **surfaces** 1.6 describe types of **surface changes** 1.7 describe grades of abrasives 1.8 describe types of fillers and stoppers 1.9 describe how to deal with **application faults** 1.10 describe quality checking measures 1.11 describe the **finishing process** 1.12 identify **drying times** 1.13 describe **safe working practice** 1.14 explain the importance of disposing of waste.

Range
Terms Viscosity, colour, formulation, natural, forced, diagrams, colour cards

Tools and equipment

Cloths, brushes, rags, pads, sponges, tak rags, scrapers, sanding blocks, filler knives, steel wool, masking tape, abrasive pads, Sanding equipment, rubbers

Materials

Modern stains, Pre-formulated traditional stains, Sealers, two-pack sealers, primers, shellac sealers, French polishing lacquers, oil, water or mixed solvents, de-greasing agents, cleaning solvents, waxes, stoppers, burnishing creams, bleach, abrasive powders

Surfaces

Solid wood, veneered, flat panels, curved work, Sub assembly or assembly, wood composite

Surface changes

Holes, scratches, chips, dents, cracks, blisters, blemishes

Application faults

Uneven applications, poor wetting, blotching, marking of the surface, drips, runs, streaks, mismatched shading, poor surface finish

Finishing process

Preparation, staining, sealing, final coating

Drying times

Curing, working time, recoating time

Safe working practice

Manufacturers' instructions, legal requirements (Control Of Substances Hazardous to Health COSHH, Provision and Use of Work Equipment Regulations PUWER, Health And Safety At Work Act HASAWA, Personal Protective Equipment (PPE)

Learning outcome

The learner will:

2. be able to hand finish furniture

Assessment criteria

The learner can:

2.1 maintain a tidy work area
2.2 organise tools and equipment for effective working
2.3 demonstrate quality checking methods
2.4 prepare surfaces for finishing
2.5 carry out **hand finishing** process.

Range

Hand finishing

Stains, basecoats, primers, final coats

Unit 210 Health and safety within furniture and furnishing making environments

UAN:	**D/503/2151**
Level:	Level 2
Credit value:	3
GLH:	18
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	This unit introduces learners to best working practice and the legal responsibilities they have in the workplace. Learners will develop understanding of hazards and how to reduce risks in the workplace. They will understand how to evaluate the severity of risks.

Learning outcome
The learner will: 1. know health and safety requirements in the workplace
Assessment criteria
The learner can: 1.1 state health and safety responsibilities of the individual 1.2 identify relevant **workplace instructions** 1.3 identify **working practices** in a furniture/interiors related workplace with the potential to cause harm 1.4 identify the importance of reporting differences between suppliers, manufacturers or workplace instructions 1.5 describe **safe working practice** in a furniture/interiors related workplace.

Range
Workplace instructions Manufacturers' instructions, legal requirements (Control Of Substances Hazardous to Health COSHH, Provision and Use of Work Equipment Regulations PUWER, Health And Safety At Work Act HASAWA) **Working practice** Use of: machinery, tools, equipments, substances manual handling, storage, housekeeping

Safe working practice
Use of PPE, risk assessments, observe safe operating procedures, legal requirements

Learning outcome
The learner will: 2. know how to identify hazards and risks in the workplace
Assessment criteria
The learner can: 2.1 describe **hazards** which may be present in a furniture/interiors related workplace 2.2 explain the importance of remaining alert to the presence of hazards 2.3 explain the importance of dealing with hazards promptly 2.4 describe **risks** which may occur in a furniture/interiors related workplace 2.5 describe the employee's **responsibilities** for controlling risks 2.6 describe **risk assessments** 2.7 explain **individual involvement** of employees in risk assessments.

Range
Hazards Activity, area **Risks** Activity, area **Responsibilities** Duty of care, correct personal conduct, observing working practices, legal requirements **Risk assessments** Formal record, document location **Individual involvement** Conduct risk inspection before each task (informal), respond to formal risk assessment

Unit 211 Manufacturing wood-based components using CNC machines

UAN:	**T/503/2236**
Level:	Level 2
Credit value:	6
GLH:	57
Relationship to NOS:	This unit is affiliated to unit 254 Producing wood and wood-based products computer numerically controlled/numerically controlled (CNC/NC) machinery in the workplace of the Level 2 NVQ Diplomas in Furniture, Interiors and Wood Machining (5782-[10-26])
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to develop the knowledge, understanding and skills, required to set up and operate a range of computer numerical controlled machines to produce computer numerical controlled machine profiles on wood-based components within the relevant sector of industry.

Learning outcome
The learner will: 1. understand the process of setting up and operating computer numerical controlled machines to produce a range of profiles on wood-based components
Assessment criteria
The learner can: 1.1 describe **specifications** used to produce a range of profiles on wood-based components 1.2 describe **characteristics** of **wood-based materials** that affect selection 1.3 explain how to store wood-based materials 1.4 describe the function of **computer numerical controlled machines** 1.5 identify types of **tooling** 1.6 describe the setting up **operations** of computer numerical controlled machines 1.7 describe how wood-based materials are **secured** throughout the machining process

1.8	list a range of **computer numerical controlled machine profiles** and identify the most suitable computer numerical controlled machine for each
1.9	identify relevant **health and safety guidelines**
1.10	identify **problems** in the computer numerical controlled process
1.11	describe how waste material is cleared and disposed of
1.12	outline **maintenance schedules**
1.13	explain program storage methods
1.14	describe modes and functions of keyboards
1.15	describe how to maintain computer numerical controlled machines.

Range

Specifications
Drawings, specifications, schedules, cutting lists, risk assessments, manufacturers' information, tolerances

Characteristics
Shakes, knots, waney edge, sap, cupping, bowing, springing, twisting, splitting, fungal staining, fungal and insect attack, moisture content, kilning defects, case hardening, timber conversion, working properties

Wood-based materials
Hardwood, softwood, manufactured board

Computer numerical controlled machines
CNC router, CNC lathe, CNC saw

Tooling
Router cutters, drill bits, saw blades

Operations
Isolation, start up and shut down of machine, handling, fitting and adjustment of tooling, inputting programs, program proving, securing component, fitting and adjustment of tooling, LEV

Secured
Vacuum table, clamps, jigs

Computer numerical controlled machine profiles
Straight, contoured, bored holes, sawn profiles

Health and safety guidelines
Manufacturers' instructions, Health and Safety at Work Act (HASWA), Provision and Use of Work Equipment Regs (PUWER), Manual Handling Operations Regs, Control of Substances Hazardous to Health Regs (COSHH), Control of Noise at Work Regs, Electricity at Work Regs, Personal Protective Equipment Regs (PPE) and related Approved Codes of Practice (ACOP)

Problems

Machine malfunction, component moves off fixing during processing, wood-based component reveals or develops undesirable characteristic during processing

Maintenance schedules

Visual inspection, routine maintenance, lubrication schedule, servicing schedule timetable

Learning outcome
The learner will: 2. be able to operate the computer numerical controlled machine safely whilst producing profiles on wood based components to specifications
Assessment criteria
The learner can: 2.1 extract data from specifications 2.2 select computer numerical controlled machine to meet specifications 2.3 carry out setting up operations to meet specifications 2.4 follow **safe practices** when feeding wood-based components through the computer numerical controlled machine 2.5 feed wood-based components through computer numerical controlled machines at correct speed to obtain the desired surface finish 2.6 produce CNC profiles on wood-based materials 2.7 load and unload components onto work table 2.8 rectify problems as and when they occur 2.9 maintain a tidy work area, organise tools and equipment for effective working 2.10 comply with the relevant health and safety guidelines.

Range
Safe practices Stay outside computer numerical controlled machine enclosure, proximity of body to movable worktable

Unit 211 Manufacturing wood-based components using CNC machines

Supporting information

Unit range

Learner must use at least one CNC machine and produce a selection of CNC profiles listed in the range.

Guidance

Learners at this level are required to operate the machine but are not required to programme the machine.

AC 1.2: Tutors should be aware of timber technology with reference to the characteristics of wood based materials.

AC1.15: Maintenance here refers to cleaning, lubrication, storage not sharpening.

Unit 214 Manufacturing wood-based components using powered tools

UAN:	**F/503/2238**
Level:	Level 2
Credit value:	6
GLH:	54
Relationship to NOS:	This unit is affiliated to unit 230 Maintain tools and equipment used in furniture making and installation & Unit 215 Make and assemble wooden components of hand crafted furniture of the Level 2 NVQ Diplomas in Furniture, Interiors and Wood Machining (5782-[10-26]).
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to develop the knowledge, understanding and skills required to produce wood-based components using powered tools within the relevant sector of industry.

Learning outcome
The learner will: 1. understand the process of setting up and operating powered tools to carry out a range of profiles on wood-based components
Assessment criteria
The learner can: 1.1 describe **specifications** used to produce a range of profiles on wood-based components 1.2 describe **characteristics** of **wood-based materials** that affect selection 1.3 describe storage of wood-based materials 1.4 describe the function of **powered tools** 1.5 identify types of powered tools 1.6 describe **power sources** 1.7 describe types of **consumables** 1.8 describe the setting up **operations** of powered tools 1.9 describe component **dimensional control devices** 1.10 describe how wood-based materials are **supported** throughout the manufacturing process 1.11 list a range of **profiles** and identify the most suitable powered tools for each

1.12 identify relevant **health and safety guidelines**
1.13 identify **problems** in the manufacturing process
1.14 describe how waste material is cleared and disposed of
1.15 outline **maintenance schedules**
1.16 describe how to maintain powered tools.

Range

Specifications
Drawings, specifications, schedules, cutting lists, risk assessments, manufacturers' information, tolerances

Characteristics
Shakes, knots, waney edge, sap, cupping, bowing, springing, twisting, splitting, fungal staining, fungal and insect attack, moisture content, kilning defects, case hardening, timber conversion, working properties

Wood-based materials
Hardwood, softwood, manufactured board

Powered tools
Electrical, battery operated and air-powered: drill, screw driver, router, sander, jigsaw, portable circular saw, biscuit/loose tongue jointer, power planer, fretsaw, hot air gun, staple gun, angle grinder with wood cutting attachment. bench grinder, drill press, portable local exhaust ventilation (LEV)

Power sources
Mains electricity at 240V, mains electricity stepped down by using a transformer which reduces the voltage to 110V, electricity supplied at 110V (used on all sites and in workshops), electricity supplied by battery to cordless power tools (9–15V) which can be recharged, compressed air tools

Consumables
Drill bits, router cutters, abrasive belt/discs, jigsaw blades, circular saw blades, chop/pull over saw, biscuit/loose tongue jointer cutters and biscuit/loose tongues, power planer knives, fretsaw blades, LEV filter bags

Operations
Isolation, start up and shut down of powered tool, handling, fitting and fixing of consumables, adjustment of tooling and equipment, guards, LEV, use of dimensional control devices

Dimensional control devices
Fences, guides, jigs, auxiliary tables and bed piece, shop made devices

Supported
Bench vice/dogs, clamps & cramps, extension tables, support rollers, trestles, supporting personnel

Profiles

Holes, profiles, contours, sanded finishes, slots

Health and safety guidelines

Manufacturers' instructions, Health and Safety at Work Act (HASWA), Provision and Use of Work Equipment Regs (PUWER), Manual Handling Operations Regs, Control of Substances Hazardous to Health Regs (COSHH), Control of Noise at Work Regs, Electricity at Work Regs, Personal Protective Equipment Regs (PPE) and related Approved Codes of Practice (ACOP)

Problems

Powered tool malfunction, wood-based component reveals or develops undesirable characteristic during processing, component moves off fixing during processing

Maintenance schedules

Visual inspection, routine maintenance, lubrication schedule, servicing schedule timetable

Learning outcome

The learner will:

2. be able to operate powered tools safely whilst producing profiles on wood based components to specifications

Assessment criteria

The learner can:

2.1 extract data from specifications
2.2 select powered tools to meet specifications
2.3 carry out setting up operations to meet specifications
2.4 demonstrate **safe practices** when using powered tools to modify wood-based components
2.5 feed powered tools through wood-based components at correct speed to obtain the desired surface finish
2.6 produce profiles on wood-based materials
2.7 rectify problems as and when they occur
2.8 maintain a tidy work area, organise tools and equipment for effective working
2.9 comply with the relevant health and safety guidelines.

Range

Safe practices

Use of feed and dimensional control devices, position of hands and body in respect of proximity to cutting agent

Unit 214 Manufacturing wood-based components using powered tools

Supporting information

Unit range

Learner must use at least six powered tools, one from each machine group to produce all of the profiles listed in the range.

Guidance

AC 1.2: Tutors should be aware of timber technology with reference to the characteristics of wood based materials.

AC 1.15: Maintenance here refers to cleaning, lubrication of moving parts and cutting agent.

Unit 216 Manufacturing wood-based components using sanding machines

UAN:	**A/503/2237**
Level:	Level 2
Credit value:	6
GLH:	54
Relationship to NOS:	This unit is affiliated to unit 264 producing sanded wood and wood-based products in the workplace of the Level 2 NVQ Diplomas in Furniture, Interiors and Wood Machining (5782-[10-26]).
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to develop the knowledge, understanding and skills, required to set up and operate a range of sanding machines to produce sanded wood-based components within the relevant sector of industry.

Learning outcome
The learner will: 1. understand the process of setting up and operating sanding machines to produce a range of sanded profiles on wood-based components
Assessment criteria
The learner can: 1.1 describe **specifications** used to produce a range of sanded profiles on wood-based components 1.2 describe **characteristics** of **wood-based materials** that affect selection 1.3 explain how to store wood-based materials 1.4 describe the function of **sanding machines** 1.5 describe different types and grades of **abrasives** 1.6 describe the setting up **operations** of sanding machines 1.7 describe component **feed and dimensional control devices** 1.8 describe how wood-based materials are **supported** throughout the machining process 1.9 list a range of **sanded profiles** and identify the most suitable sanding machines for each 1.10 identify relevant **health and safety guidelines**

1.11 identify **problems** in the sanding process
1.12 describe how waste material is cleared and disposed of
1.13 outline **maintenance schedules**
1.14 describe how to maintain abrasive mediums.

Range

Specifications
Drawings, specifications, schedules, cutting lists, risk assessments, manufacturers' information, tolerances

Characteristics
Shakes, knots, waney edge, sap, cupping, bowing, springing, twisting, splitting, fungal staining, fungal and insect attack, moisture content, kilning defects, case hardening, timber conversion, working properties

Wood-based materials
Hardwood, softwood, manufactured board

Sanding machines
Linisher/disc/bobbin machine, overhead narrow belt sander, wide belt sander, drum sander

Abrasives
Types: belt, disc

Operations
Isolation, start up and shut down of machine, fixing and adjustment of abrasive, tooling and equipment, guards, LEV, use of feed and dimensional control devices

Feed and dimensional control devices
Power feed, sliding table, jigs, auxiliary tables, bed piece, shop made devices

Supported
Extension tables, support rollers, supporting personnel

Sanded profiles
Flat panel, narrow edge, concave, convex

Health and safety guidelines
Manufacturers' instructions, Health and Safety at Work Act (HSWA), Provision and Use of Work Equipment Regs (PUWER), Manual Handling Operations Regs, Control of Substances Hazardous to Health Regs (COSHH), Control of Noise at Work Regs, Electricity at Work Regs, Personal Protective Equipment Regs (PPE) and related Approved Codes of Practice (ACOP)

Problems

Machine malfunction, belt comes off, disc becomes detached, clogging, tearing and shredding of abrasive medium, burning, snaking, glazing, wood-based component reveals or develops undesirable characteristic during processing

Maintenance schedules

Visual inspection, routine maintenance, lubrication schedule, servicing schedule timetable

Learning outcome

The learner will:

2. be able to operate the sanding machine safely whilst producing sanded profiles on wood based components to specifications

Assessment criteria

The learner can:

2.1 extract data from specifications
2.2 select sanding machines to meet specifications
2.3 carry out setting up operations to meet specifications
2.4 demonstrate **safe practices** when hand feeding wood-based components through the sanding machines
2.5 feed wood-based components through sanding machines at correct speed to obtain the desired surface finish
2.6 produce sanded profiles on wood-based materials
2.7 rectify problems as and when they occur
2.8 maintain a tidy work area, organise tools and equipment for effective working
2.9 comply with the relevant health and safety guidelines.

Range

Safe practices

Use of feed and dimensional control devices, position of hands and body in respect of proximity to sanding medium and in the event of component 'kick-back'

Unit 216 Manufacturing wood-based components using sanding machines

Supporting information

Unit range

Learner must use a disc sander, bobbin sander and belt sander and produce all of the sanded profiles listed in the range.

Guidance

AC 1.2: Tutors should be aware of timber technology with reference to the characteristics of wood based materials.

AC 1.15: Maintenance here refers to cleaning of abrasive medium.

Unit 220 Timber technology in furniture making

UAN:	**F/503/2174**
Level:	Level 2
Credit value:	6
GLH:	50
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	This unit requires learners to identify the characteristics and uses of solid wood and wood based products. The unit looks at the structure, working properties, appearance, stability, colour, grain patterns, drying method and storage of different wood types. Learners will identify sources of solid wood and investigate potential implications of selecting materials for different types of wood.

Learning outcome
The learner will: 1. understand the material technology of solid wood
Assessment criteria
The learner can: 1.1 identify **characteristics** of **solid timber** 1.2 describe types of solid timber used in the furniture industry 1.3 describe **reasons** for using for different types of solid timber 1.4 describe potential **defects** in solid timber 1.5 describe **problems** that may occur when working with hardwood 1.6 describe **storage requirements** for solid timber 1.7 describe solid wood **sustainability** 1.8 identify **commercial sizes** of solid timber 1.9 describe **sources** of commercially sized solid timber 1.10 explain how different **surface finishes** react with solid timber 1.11 describe **safe working practice.**

Range
Characteristics Structure, working properties, appearance, stability, colour, grain patterns, kiln dried, air dried, staining, , finishing, limitations

Solid timber

Softwood: douglas fur, pine, hemlock

Hardwood: beech, ash, oak, mahogany, birch, maple, sycamore, teak

Reasons

Exterior use, interior use, compression strength, tensile strength, durability, insect resistance

Defects

Cupping, twisting, bowing, shakes, dead knots, live knots, cracks, splits, grain defects, case hardening, insect infestation

Problems

Corrosion of fittings, staining to fittings, damage to tools, skin irritation, respiratory issues

Storage requirements

Clean, dry, well ventilated, kept flat, separated, covered

Sustainability

Source, ethical, recycling, waste disposal

Commercial sizes

Millimetres, metres, cubic metres

Sources

Specialist suppliers, abroad, home grown materials, sustainable

Surface finishes

Stains, lacquers, varnishes, oils, paints, exterior wood preservatives, natural, pressure impregnated

Safe working practice

Manufacturers' instructions, legal requirements (Control Of Substances Hazardous to Health COSHH, Provision and Use of Work Equipment Regulations PUWER, Health And Safety At Work Act HASAWA, Personal Protective Equipment PPE)

Learning outcome
The learner will: 2. understand the material technology of timber based products
Assessment criteria
The learner can: 2.1 identify **characteristics** of **timber based products** 2.2 describe types of timber based products used in the furniture industry 2.3 describe **reasons** for using for different types of timber based products 2.4 describe potential **defects** in timber based products

2.5	describe **problems** that may occur when working with timber based products
2.6	describe **storage requirements** for timber based products
2.7	describe wood based product sustainability
2.8	identify **commercial sizes** of timber based products
2.9	explain how different **surface finishes** react with timber based products
2.10	describe manufacturing techniques of timber based products.

Range

Characteristics

Working properties, appearance, stability, colour, grain patterns, structure, finishing, limitations

Timber based products

Plywood, chipboard, MDF

Reasons

Interior use, durability, insect resistance, heat resistance, water resistance, stability, ease of application, cost, available

Defects

Pressing faults, veneering faults

Problems

Damage to tools, skin irritation, respiratory issues, carcinogenic, holding properties of fixings

Storage requirements

Clean, dry, well ventilation, kept flat, separated, indoors

Commercial sizes

Millimetres, metres, sheet sizes

Surface finishes

Stains, lacquers, varnishes, oils, paints, natural

Unit 221 Mattress quilting operations

UAN:	**R/503/2230**
Level:	Level 2
Credit value:	8
GLH:	75
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to provide the learner with the knowledge and skills to prepare and produce quilting for mattresses using machines. The skills covered by this unit include: preparing the work area and equipment, selecting materials and using machinery to carry out quilting operations.

Learning outcome
The learner will: 1. know how to prepare mattress quilting equipment
Assessment criteria
The learner can: 1.1 describe the purpose of technical specifications 1.2 list **terms** used in technical specifications 1.3 describe handling characteristics of **materials** 1.4 describe purposes of materials 1.5 explain how to protect mattresses from damage during quilting preparation 1.6 describe how to **prepare** for quilting 1.7 describe the **function** of equipment used in quilting process 1.8 describe **faults** that may occur during quilting preparation 1.9 identify **safe working practice** in mattress preparation 1.10 describe **safety functions** on quilting machines.

Range
Terms Material, quilting dimensions, pattern, type, weight and size of filling, layer sequence, quality to be achieved, tolerance, visual appearance **Materials** Fabric, foam, tick, backing, backing thread, cotton, felt, wool, coir pad **Prepare** Machine start-up, quality check

Function
One and two headed

Faults
Tools and equipment faults, quality, application, positioning

Safe working practice
PPE, legal requirements, Approved Code of Practice (ACOP), Health and Safety At Work Act (HASAWA), Control of Substances Hazardous to Health (COSHH), Risk Assessments

Safety functions
Interlocking guards, emergency stop, foot guard

Learning outcome
The learner will: 2. know how to quilt mattresses
Assessment criteria
The learner can: 2.1 describe the **quilting process** 2.2 state when to use different **methods** for quilting mattresses 2.3 explain how to **monitor** the quilting operation 2.4 describe the importance of minimising waste 2.5 describe **faults** that may be encountered during quilting 2.6 explain **processes** for dealing with faults 2.7 describe **quality checking** measures.

Range

Quilting process
Operation of equipment, machine shut-down, sequence of processing

Methods
Panels, borders, rolls, deep quilting

Monitor
Touch, feel, visual

Faults
Material defects, application, positioning, colour/pattern mismatching, non functional equipment, tensioning, shape and size, stitching errors, re-threading, re-needling

Processes
Reject, replace, rectify, report, work around material defects

Quality checking
Visual, measurement

Learning outcome
The learner will: 3. be able to quilt mattresses
Assessment criteria
The learner can: 3.1 maintain a tidy work area 3.2 organise tools, equipment and materials 3.3 select appropriate protection for items while working 3.4 operate quilting machines 3.5 carry out quality checks.

Unit 222 Modern furniture upholstery

UAN:	**K/503/2217**
Level:	Level 2
Credit value:	13
GLH:	130
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to provide the learner with the knowledge and skills to prepare and produce items of modern upholstery. The skills covered by this unit include: preparing the frame, application of suspensions and filling materials, positioning and securing upholstery covers, positioning and securing trimmings and finishings, fastening bottom cloth firmly and accurately.

Learning outcome
The learner will: 1. understand how to prepare items of modern upholstery
Assessment criteria
The learner can: 1.1 describe the purpose of technical specifications 1.2 list **terms** used in technical specifications 1.3 describe functions of **tools and equipment** used in modern upholstery 1.4 state **indicators** that determine equipment fault 1.5 explain how to overcome equipment faults 1.6 describe **purposes** of **support materials** 1.7 outline handling characteristics of support materials 1.8 state indicators that determine **support material faults** 1.9 describe how to protect **items** from damage 1.10 identify **safe working practice** when using tools and equipment in modern upholstery.

Range
Terms Material type, quality level, tolerance, visual appearance **Tools and equipment** Hammers, staple gun, frame gun, spring gun, staple remover, knives, shears, scalpels, stretching device

Indicators
Non-functional

Purposes
Structure, shape, comfort

Support materials
Suspensions , springs, elasticated webbing, support materials (webbing, foam, wadding, rubberised hair, insulation pad), edgings

Support material faults
Damage, incomplete

Items
Modern furniture, contract furniture, office furniture

Safe working practice
PPE, legal requirements, Approved Code of Practice (ACOP)

Learning outcome

The learner will:
2. understand how to fit material and finish items of modern upholstery

Assessment criteria

The learner can:
2.1 describe handling characteristics of **upholstery covers**
2.2 describe different **methods** of securing upholstery covers
2.3 describe types of **problems** that may occur during fitting upholstery covers to items
2.4 describe the importance of minimising waste
2.5 explain the purpose of using a bottom cloth
2.6 list **fittings** used in modern upholstery
2.7 describe handling characteristics of **trimmings and finishings**
2.8 explain methods of securing trimmings and finishings
2.9 describe problems that may occur during fitting of trimmings and finishings
2.10 describe **processes** for dealing with problems
2.11 describe **quality checks** for completed items.

Range

Upholstery covers
Patterned/striped, plain pile, vinyl, stretch fabrics, flat weave fabrics, natural hide, velvet

Methods
Stapling, temporary tacks, tacks, centring, 'v'-cut, 'Y'-cut, measuring, hand stitching, adhesives

Problems
Material defects, colour/pattern mismatching, non functional equipment, tensioning, shape and size, stitching errors

Fittings
Castors, bun feet, legs, glides, mechanical actions

Trimmings and finishings
Braide, piping, fringe, polished wood borders

Processes
Reject, replace, rectify, report, work around material defects

Quality checks
Visual, measurement

Learning outcome
The learner will: 3. be able to produce items of modern upholstery
Assessment criteria
The learner can: 3.1 maintain a tidy work area 3.2 organise tools, equipment and materials 3.3 check materials meet technical specification 3.4 select appropriate protection for the item while working 3.5 produce items of modern upholstery 3.6 demonstrate quality checks.

Unit 223 Modern mattress making

UAN:	**D/503/2229**
Level:	Level 2
Credit value:	6
GLH:	60
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to provide the learner with the knowledge and skills to prepare and produce mattresses. The skills covered by this unit include: preparing the mattress assembly, application of suspensions and filling materials to form the shape, positioning and securing top covers, tufting/finishing, tape edging.

Learning outcome
The learner will: 1. know how to prepare mattresses for assembly
Assessment criteria
The learner can: 1.1 describe the purpose of technical specifications 1.2 list **terms** used in technical specifications 1.3 describe handling characteristics of **support materials** 1.4 describe purposes of different support materials 1.5 describe **methods** used in mattress preparation 1.6 describe **functions** of different tools used in mattress preparation 1.7 describe **faults** that may occur during mattress preparation 1.8 identify **safe working practice** during mattress preparation.

Range
Terms Material to be used, quality, tolerance, dimensions, visual appearance, filling type, item type **Support materials** Foam, springs, foam encapsulated suspension units, fillings, panels, pads, single fillings, multi fillings/layered fillings **Methods** Stapling, hog-ringing, gluing, side blind, top stitching, roll stitching

Function
Hog ring gun, glue gun, staple gun

Faults
Tools and equipment, quality, application, positioning

Safe working practice
PPE, legal requirements, Approved Code of Practice (ACOP), Health and Safety At Work Act (HASAWA), Control of Substances Hazardous to Health (COSHH), Risk Assessments

Learning outcome
The learner will: 2. know how to assemble mattresses
Assessment criteria
The learner can: 2.1 describe handling characteristics of **finishing materials** 2.2 describe **functions** of different tools used in finishing mattresses 2.3 describe **methods** for assembling mattresses 2.4 describe **faults** that may occur during assembly process 2.5 describe the importance of minimising waste 2.6 describe **processes** for dealing with problems 2.7 describe **quality checking measures**.

Range

Finishing materials
Top fabric, twine, pre-formed tufts, thread, tape edging, filler cord

Function
Tufting machine, tape edging

Methods
Mattress positioning, vertical application, alignment, tape edging, tufting

Faults
Material defects, colour/pattern mismatching, non functional equipment, tensioning, shape, size, stitching errors, broken thread, broken needle

Processes
Reject, replace, rectify, report, work around material defects

Quality checking measures
Visual, measurement

Learning outcome
The learner will: 3. be able to produce mattresses
Assessment criteria
The learner can: 3.1 maintain a tidy work area 3.2 organise tools, equipment and materials 3.3 check materials meet technical specification 3.4 select appropriate protection for the item while working 3.5 produce mattresses 3.6 demonstrate tape edging 3.7 demonstrate tufting 3.8 demonstrate quality checks.

Unit 228 Spray finishing in furniture making

UAN:	**D/503/2215**
Level:	Level 2
Credit value:	20
GLH:	180
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to provide the learner with the knowledge and practical skills to spray finish furniture. This unit will cover preparing work pieces and materials, taking into account surface faults and any application faults with materials. The unit will also cover Health & Safety legislation using technical specifications and the disposing of waste materials.

Learning outcome
The learner will: 1. know the process of preparing to spray finish furniture
Assessment criteria
The learner can: 1.1 describe the purpose of technical specifications 1.2 list **terms** used in technical specification 1.3 describe functions of **tools and equipment** used in spray finishing 1.4 describe functions of **materials** used in spray finishing 1.5 describe different grades of **abrasives** 1.6 explain uses of fillers and stoppers 1.7 explain different preparations for **surfaces** 1.8 describe **surface faults** in timbers 1.9 describe **safe working practice.**

Range
Terms Viscosity, colour, formulation, natural, forced, precat, AC, PU, curing, data sheets **Tools and equipment** Spray guns, spray booth, drying ovens, brushes, rags/cloths, pads, sponges, tak rags, scrapers, sanding blocks, filler knives, masking tape

Materials

Stains, sealers, primers, shellac, oil, water or mixed solvents, de-greasing agents, cleaning solvents, waxes, stoppers, burnishing creams, bleach

Abrasives

Sandpapers, steel wool, sanding blocks, pads

Surfaces

Solid wood, veneered, flat panels, curved work, sub-assembly or assembly, wood composite

Surface faults

Scratches, chips, dents, cracks, blisters, blemishes

Safe working practice

Manufacturers' instructions, legal requirements (Control Of Substances Hazardous to Health COSHH, Provision and Use of Work Equipment Regulations PUWER, Health And Safety At Work Act HASAWA, Personal Protective Equipment PPE)

Learning outcome
The learner will: 2. know the process of spray finishing furniture
Assessment criteria
The learner can: 2.1 describe **application faults** 2.2 describe how to deal with **faults** that occur 2.3 describe quality checking measures 2.4 describe the **finishing process** of furniture 2.5 identify different drying times 2.6 explain the importance of safely disposing waste.

Range
Application faults Blooming, blotching, runs, streaks, orange peel, fish eye, poor wetting, uneven application, Nibs, holes **Faults** Surface, application **Finishing process** Preparation, staining, sealing, final coating

Learning outcome
The learner will: 3. be able to spray finish furniture
Assessment criteria
The learner can: 3.1 maintain a tidy work area 3.2 organise tools and equipment for effective working 3.3 carry out spray finishing to **components** 3.4 demonstrate quality checking methods.

Range
Components Flat panels, curved work, sub-assembly or assembly

Unit 229 Sustainability in the timber trade

UAN:	**T/503/2222**
Level:	Level 2
Credit value:	3
GLH:	12
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to provide the learner with an understanding of environmental impacts of the timber trade and endangered timbers. The unit required learners to understand waste management techniques and cost implications.

Learning outcome
The learner will: 1. understand how the timber trade impacts on the environment
Assessment criteria
The learner can: 1.1 explain the term sustainability 1.2 describe environmental **impacts** of the timber trade 1.3 describe man-made **causes** of deforestation 1.4 identify **endangered** timber species 1.5 describe roles of **organisations** promoting sustainable sourced timber 1.6 describe how to research **sources** of timber and timber based products 1.7 explain **reasons** to provide products made from sustainable sourced materials.

Range
Impacts Environmental degradation, carbon release & capture, deforestation, carbon footprint **Causes** Food production, population pressure, high value timbers, illegal logging **Endangered** Convention on International Trade in Endangered Species

Organisation
Forestry Stewardship Council, Programme for the Endorsement Forest Certification Scheme, pressure groups

Sources
Plantation grown, naturally grown, exotic timbers, domestically grown

Reasons
Market demand, government legislation

Learning outcome
The learner will: 2. understand waste management within the timber trade
Assessment criteria
The learner can: 2.1 describe **waste** in processing trees to finished products 2.2 describe waste within workshops 2.3 explain ways of **minimising** waste within the manufacturing process 2.4 explain the term recycling 2.5 describe ways which **materials** can be recycled 2.6 identify cost implications of not recycling 2.7 explain how to **safely dispose** of waste.

Range
Waste Wood chippings, saw dust, off cuts, timber based products, adhesives, finishes **Minimising** Timber sizes, nesting, production process, recycling **Materials** Timber, timber based products, finishes, adhesives **Safely dispose** Burning, pelleting, brickettes, COSHH

Unit 230 Technical drawings and workshop geometry

UAN:	**K/503/2220**
Level:	Level 2
Credit value:	7
GLH:	40
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of the unit to provide the learner with knowledge and practical skills to both produce and read a range of protections used in technical drawings and to transfer these skills to the a workshop environment. Skills covered in this unit include developing drawing skills, drawing orthographic, oblique and isometric drawings using a range of drawing equipment. Learners will produce cutting lists from technical drawings. Learners will carry out workshop geometry. This unit will require learners to communicate ideas via drawings.

Learning outcome
The learner will: 1. know how to create technical drawings and practice workshop geometry
Assessment criteria
The learner can: 1.1 identify **equipment** used in technical drawings 1.2 identify **measurements** used in technical drawings 1.3 describe the use of **scales** in technical drawing 1.4 describe **projections** used in technical drawing 1.5 describe **lines** types for technical drawing 1.6 describe the purpose of rods 1.7 describe workshop geometry **techniques** 1.8 identify drawing **conventions** for abbreviations 1.9 explain how to prepare a **cutting list** using technical drawings.

Range
Equipment Drawing boards, t squares, pens, pencils, compass, set squares, protractor, rubber, paper, computers, French curve, rulers, scale ruler

Measurements
Millimetres, metres

Scales
1:1, 1:2, 1:5

Projections
Orthographic, isometric, oblique, perspective

Lines
Construction, dimension, hidden detail, section lines, hatching, centre line

Techniques
Ellipse, drawing and bisecting shapes, enlarging, tangent, templates

Conventions
Current European guidelines

Cutting list
Length, width & thickness and for soft furnishings, foam size, top cover

Learning outcome
The learner will: 2. be able create technical drawings and practice workshop geometry
Assessment criteria
The learner can: 2.1 create technical drawings 2.2 use scales in technical drawings 2.3 use **projections** in technical drawings 2.4 use lines in technical drawings 2.5 set out rods 2.6 carry out workshop geometry **techniques** 2.7 use drawing **conventions** for abbreviations 2.8 prepare cutting lists from technical drawings.

Range
Projections Orthographic, isometric, oblique, perspective **Techniques** Ellipse, drawing and bisecting shapes, enlarging, tangent, templates **Conventions** Current European guidelines

Unit 231 Traditional furniture upholstery

UAN:	**L/503/2209**
Level:	Level 2
Credit value:	22
GLH:	200
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to provide the learner with the knowledge and skills to prepare and produce items of traditional upholstery. The skills covered by this unit include: preparing the frame, application of suspensions and filling materials to form the shape, positioning and securing upholstery covers, hand cutting skills, positioning and securing trimmings and finishings, fastening bottom cloth firmly and accurately and expands skills in relation to deep buttoning and building foundations by hand.

Learning outcome
The learner will: 1. understand how to prepare upholstery foundations
Assessment criteria
The learner can: 1.1 describe the purpose of technical specifications 1.2 list **terms** used in technical specifications 1.3 describe what the furnishing regulations require for traditional **support materials** 1.4 explain the importance of checking the **condition** of the frame 1.5 explain purposes of different support materials 1.6 describe **processes** used to construct suspension systems 1.7 describe different **methods** of securing traditional support materials 1.8 outline handling characteristics of support material 1.9 describe the importance of constructing foundations for deep buttoning 1.10 identify **indicators** of faults when applying support materials 1.11 identify **safe working practice** when using support materials in traditional upholstery.

Range
Terms Material, quality, tolerance, dimensions, visual appearance, filling type, item type (scroll arm, squab cushions – simple/complex shape) **Support materials** Suspensions (double and single cone springs, stretch and non stretch webbing, serpentine springs, spring units), fillings (hair, fibres, felts, wadding, feather/down, polyurethane foam, latex, polyester), under cover **Condition** Joint stability, infestation, wood irregularities **Processes** Spacing, alignment, lashing, lacing, tensioning, spring edge **Methods** Stitching, tacking, stapling, stretching **Indicators** Quality, application, positioning **Safe working practice** PPE, legal requirements, Approved Code of Practice (ACOP), Health and Safety At Work Act (HASAWA), Control of Substances Hazardous to Health (COSHH), Risk Assessments

Learning outcome
The learner will: 2. understand how to fit material and finish items of traditional upholstery
Assessment criteria
The learner can: 2.1 describe handling characteristics of **upholstery covers** 2.2 describe **functions** of different tools used in traditional upholstery 2.3 describe different **methods** of securing upholstery covers 2.4 describe **problems** that may occur during fitting upholstery covers 2.5 describe the importance of minimising waste 2.6 explain the purpose of using a bottom cloth 2.7 describe handling characteristics of **trimmings and finishings** 2.8 explain different methods of securing trimmings and finishings 2.9 describe problems that may occur during fitting of trimmings and finishings 2.10 describe **processes** for dealing with problems 2.11 describe **quality checks** for completed items.

Range
Upholstery covers Patterned/striped, plain pile, vinyl, stretch fabrics, flat weave fabrics, natural hide, velvet **Functions** Hammers, staple guns, staple remover, knives, shears, scalpels, stretching device, needles, skewers **Methods** Stapling, temporary tacks, tacks, centring, 'v'-cut, 'Y'-cut, measuring, hand stitching, deep buttoning **Problems** Material defects, colour/pattern mismatching, non functional equipment, tensioning, shape and size, stitching errors, button positioning **Trimmings and finishings** Braide, piping, fringe, polished wood borders, castors, bun feet, legs, studs **Processes** Reject, replace, rectify, report, work around material defects **Quality checks** Visual, measurement

Learning outcome
The learner will: 3. be able to produce items of traditional upholstery
Assessment criteria
The learner can: 3.1 maintain a tidy work area 3.2 organise tools, equipment and materials 3.3 check that materials meet specifications 3.4 select appropriate protection for items while working 3.5 tie in **springs** by hand 3.6 create sprung edges 3.7 build **foundations** of traditional upholstery support materials 3.8 produce **items** of traditional upholstery 3.9 carry out deep buttoning techniques 3.10 demonstrate quality checks.

Range
Springs Double and single cone **Foundation** Hair, fibres, felt, wadding **Item** Armchair

Unit 232 Veneering methods in furniture making

UAN:	**Y/503/2200**
Level:	Level 2
Credit value:	3
GLH:	22
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to provide the learner with the knowledge and practical skills to be able to veneer furniture using various methods. This unit will cover preparing, cutting and veneering methods and gives an awareness of health and safety legislation in particular when using adhesive.

Learning outcome
The learner will: 1. understand the process of preparing, tailoring and laying veneers
Assessment criteria
The learner can: 1.1 describe the purpose of technical specifications 1.2 list **terms** used in technical specifications 1.3 describe **conditions** for handling and storing veneers 1.4 describe **veneering methods** 1.5 describe functions of different **tools and equipment** used to veneer 1.6 describe the **process** for matching the quality of different veneers 1.7 describe the **characteristics** of different types of wood used to tailor veneers 1.8 describe the consequences of inaccurate measuring and cutting of joints 1.9 describe how to **prepare** surfaces for veneering 1.10 describe different uses of **adhesives** 1.11 identify **safe working practices** for adhesives 1.12 describe how to deal with **faults** that can occur during veneering 1.13 identify correct Personal Protective Equipment (PPE) for adhesives and equipment being used.

Range
Terms Inlays, veneers, groundwork, straight, slip laid, leaf laid, book match, edge veneering, cross banding, sheet veneers, decorative veneers **Conditions** Flattening, damping, temperature, humidity and ventilation **Veneering methods** Hand laying, manually operated pressing, dry fitting, use of adhesives. **Tools and equipment** Veneering hammers, heated and unheated presses, heated cauls, adhesive rollers, edge clamps, veneer pins, heated adhesive pots, brushes and glue sticks, flat irons and sand bags. veneering saws and knives, planes, measuring devices, veneering tape, set squares, protractors, guillotine **Process** Grain fineness, orientation, colour, hue, decoration, light refraction characteristics **Characteristics** Hardwood, softwood **Prepare** Manmade board, solid wood, porous, **Adhesives** Polyvinyl acetate, urea or phenol formaldehyde, animal based glues, and resorcinol, contact **Safe working practice** Manufacturers' instructions and COSHH regulations, waste disposal, data sheets **Faults** Misalignment, mismatching, discolouration, marking or blistering, glue penetration, jointing, flaws

Learning outcome
The learner will: 2. be able to prepare and tailor veneers
Assessment criteria
The learner can: 2.1 maintain a tidy work area 2.2 organise tools, equipment and materials 2.3 measure and mark veneers 2.4 cut veneers 2.5 tailor veneer **joints**.

Range
Joints Taping, stitching

Learning outcome
The learner will: 3. be able to lay veneers onto groundwork
Assessment criteria
The learner can: 3.1 prepare groundwork for **veneering methods** 3.2 carry out veneering methods 3.3 demonstrate how to deal with veneer faults 3.4 select Personal Protective Equipment.

Range
Veneering methods Hand laying, manually operated pressing, dry fitting, use of adhesives

Unit 301 Assemble furniture components

UAN:	**F/503/2188**
Level:	Level 3
Credit value:	9
GLH:	80
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to provide the learner with the knowledge and skills to assemble complex handcrafted furniture. The skills covered by the unit include: leading others, preparation of tools, equipment and materials, assembly of complex hand crafted furniture with components that require matching up decoration and curved surfaces. The knowledge acquired by the learner will enable them to take responsibility for initiating and completing tasks and the key processes involved of assemble that applies to professional practice within bespoke furniture making. It is envisaged that learners complete this unit are experienced in furniture making as this is a specialised unit that builds upon that knowledge.

Learning outcome
The learner will: 1. know how to assemble complex furniture components
Assessment criteria
The learner can: 1.1 describe **terms** used in technical specifications 1.2 explain **preparation methods** of furniture assembly 1.3 explain the furniture **assembly process** 1.4 describe **techniques** of assembling complex shaped furniture 1.5 describe types of **specialist clamps** 1.6 explain how to protect furniture components from damage during assembly 1.7 explain the process for selecting **adhesives** 1.8 describe **quality** checking measures 1.9 explain the **role** of others in furniture assembly 1.10 describe **leading** others during assembly 1.11 describe how to deal with **faults** that occur 1.12 describe **safe working practice.**

Range
Terms True, square, pressures, alignment, shelf life, preparation, reconstitution, tack, creep, pot life, lamination, formers, curved work, vacuum forming **Preparation methods** Referencing, planning, quality checks, jig making, formers **Assembly process** Dry run, quality check, assemble **Techniques** Bow fronted, serpentine, coopering, compound angles, laminating **Specialist clamps** Band, mitre, frame, edge, vacuum pressing, workshop devices, radio frequency (RF) presses, windmill **Adhesives** Hot, cold, synthetic, natural **Role** Support, manual labour, supporting quality checks **Leading** Direction, supervision, instruction, clear communication **Faults** Misalignment, mismatching, discolouration, marking, jointing flaws **Safe Working practice** PPE, legal requirements, Health and Safety at work act (HASAWA), control of substances hazardous to health (COSHH), Risk assessments working practice

Learning outcome
The learner will: 2. be able to assemble complex furniture components
Assessment criteria
The learner can: 2.1 maintain a tidy work area 2.2 organise tools and equipment for effective working 2.3 design jigs for assembly 2.4 carry out preparation process for furniture assembly 2.5 carry out **techniques** to assemble complex shaped furniture 2.6 demonstrate use of specialist cramps 2.7 demonstrate quality checking 2.8 select personal protective equipment 2.9 demonstrate safe working practice.

Range
Techniques Laminating, compound angles

Unit 302 Assessment of furniture restoration

UAN:	**H/503/2152**
Level:	Level 3
Credit value:	13
GLH:	70
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to provide the learner with the knowledge and skills to evaluate a restoration project and to specify the direction of restoration. The skills covered by the unit include: condition report writing, analysis of the historical context, restoration option sheets, action plans and client communication. The knowledge acquired by the learner will enable them to take responsibility for initiating and completing tasks and the key processes involved of decision making that applies to professional practice within the assessment of furniture restoration. It is envisaged that learners that complete this unit are experienced in furniture making as this is a specialised unit that builds upon that knowledge.

Learning outcome
The learner will: 1. understand how to carry out furniture restoration assessments
Assessment criteria
The learner can: 1.1 describe **terms** used in furniture restoration 1.2 explain the importance of **record keeping** 1.3 describe the **principles** of furniture restoration 1.4 identify furniture restoration **bodies** 1.5 explain **measures** to avoid further damage 1.6 explain the importance of undertaking historical research 1.7 describe **sources** of information 1.8 describe **data** required from historical research 1.9 define **processes** of restoration assessment 1.10 explain **factors** of action planning 1.11 justify courses of action

1.12 describe **tools and equipment** used during furniture restoration assessment
1.13 describe **safe working practice**
1.14 describe **client characteristics**
1.15 explain **professional approaches** to delivering restoration assessment results.

Range

Terms
Restore, conserve, repair, replicate

Record keeping
Before/after photo log, client communication, condition report, option sheets, action plan

Principles
Like for like, ethical, sympathetic, research

Bodies
BAFRA, ICON

Measures
Conservation, degeneration, after care

Sources
Primary: other people, professional trade organisations, museums
Secondary: historical records, internet, books

Data
Age, design, period, construction and finish details, material

Processes
Historical research, condition report, option sheets, action plan

Factors
Quality, costs, material, ethics, time estimates, strength, integrity, visual

Characteristics
Deliver on time, beyond expectations, listen to clients, respond to complaints, restoration ethics

Tools and equipment
Measuring tapes/rules/ metal detectors / dismantling tools – reverse clamps, syringe, hand tools, scratch stocks

Safe working practice
PPE, legal requirements, Health and Safety at work act (HASAWA), control of substances hazardous to health (COSHH), Risk assessments

Client characteristics
Private, trade

Professional approaches
Sympathetic, knowledgeable, offering options, solution driven

Learning outcome
The learner will: 2. be able to assess the condition of an item of furniture
Assessment criteria
The learner can: 2.1 carry our measures to avoid further deterioration in items of furniture 2.2 carry out historical research on items of furniture 2.3 carry out furniture restoration **assessments** 2.4 carry out **record keeping** 2.5 create action plans for furniture restoration 2.6 communicate options to clients.

Range
Assessment Surface repair, structural repair, repair to finish **Record keeping** Before/after photo log, client communication, condition report, option sheets, action plan

Unit 302 Assessment of furniture restoration

Supporting information

Evidence requirements

Restoration commissions may be small scale (e.g. a small stool or chest) or large scale (e.g. because of the number of items to be restored, or because of the condition of the item, or because of the rarity/value of the item).

Information sources would include primary sources - other people, professional/trade organisations. Or secondary sources - documents (e.g. historical records, manufacturer's specifications), Information sources may be accessed directly or electronically. Information may have been collected and collated by another person as part of research into the restoration. In the context of this unit, the important dimension is that the information is used to support valid and effective decision-making.

Unit range

Learner must use at least 1 CNC machine and produce a selection of CNC profiles listed in the range.

Guidance

Client

Clients for a restoration may be private or corporate (e.g. via a gallery) or antique dealers.

Degradation

The level of deterioration in the structure and fabric of an item of furniture. Degradation can be mechanical (e.g. joint loosening), physical (e.g. fracture, ripping), biological (e.g. infestation) and/or chemical (e.g. pollutants).

Restoration

The return of an item of older, traditional or antique furniture to its original condition.

Unit 303 Decorative veneering in furniture making

UAN:	**T/503/2155**
Level:	Level 3
Credit value:	11
GLH:	105
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to provide the learner with the knowledge and skills to select, prepare and lay decorative and specialist veneer sheets. The skills covered by the unit include: the selection of decorative veneer cuts, producing marquetry and parquetry designs and laying onto groundwork. The knowledge acquired by the learner will enable them to take responsibility for initiating and completing tasks and the key processes involved of decision making that applies to professional practice within the selecting, preparing and laying of decorative veneer for furniture making. It is envisaged that learners that complete this unit are experienced in veneering methods in furniture making as this is a specialised unit that builds upon that knowledge.

Learning outcome
The learner will: 1. know how to produce decorative veneers
Assessment criteria
The learner can: 1.1 describe **terms** used in technical specifications of decorative veneers 1.2 explain a history of marquetry 1.3 explain a history of parquetry 1.4 describe **characteristics** for selecting decorative veneers 1.5 explain **methods** of transferring decorative design to veneers 1.6 describe **tools and equipment** for decorative veneering 1.7 describe **types** of specialist decorative veneers 1.8 explain **processes** for decorative veneering 1.9 describe **adhesives** for laying decorative veneers 1.10 explain how to deal with decorative veneer **faults** 1.11 explain **safe working practices** that affect decorative veneering.

Range
Terms Marquetry, parquetry, burr, curl, inlays, oyster, fiddleback, ripple, groundwork, buhl work, manufactured decorative veneers **Characteristics** Grain appearance, fineness, orientation, colour, hue, decoration, light refraction, matching, sand shading **Methods** Drawing design layouts, instruments, transfer of design, tracing, perforating machine, window, fretcutting techniques and laying **Tools and equipment** Pressure blocks, knives, scalpels, presses, fretsaw, veneer saw, donkey, treadle, paper, sand, guillotine, veneer tapes **Types** Timber based: curls, ripples, oysters, fiddle back, burr, Non-timber based: metal, ivory, brass, silver, rare stones, tortoiseshell, shell, mother-of-pearl, plastic resin substitutes, fillets **Processes** Design, mark out, cut, tailor, lay **Adhesives** Hot, cold, synthetic, natural **Faults** Misalignment, mismatching, discolouration, marking or blistering, glue penetration, jointing, flaws **Safe Working practice** PPE, legal requirements, Health and Safety at work act (HASAWA), control of substances hazardous to health (COSHH), Risk assessments working practice

Learning outcome
The learner will: 2. be able to produce decorative veneers
Assessment criteria
The learner can: 2.1 design **decorative veneers** 2.2 carry out decorative veneer selection 2.3 transfer decorative veneer designs 2.4 cut decorative veneers 2.5 carry out decorative veneering 2.6 demonstrate fault finding 2.7 select personal protective equipment 2.8 demonstrate safe working practice.

Range
Decorative veneer Marquetry, parquetry

Unit 303 Decorative veneering in furniture making

Supporting information

Evidence requirements

The joints and methods used in making hand-crafted veneers would include the making of decorative panels, book matched, pictorial and geometric sheets and stringed sheets. These are influenced by the design required, which will be stated in the specifications. Joints must be accurately matched for grain orientation, colour and hue (sand shading), decoration and light refraction qualities.

Assignment – a marquetry and parquetry panel. Assignment of historical research.

Guidance

Veneers used in making hand-crafted furniture are made of natural timber. Typical timbers would include softwood and hardwoods, walnut, oak, ash, sycamore, mahogany, cherry and maple.

Other materials may also be used, such as mother-of-pearl, tortoiseshell, brass, silver nickel, parquetry, marquetry, rare stones, oyster veneer, plastic substitutes.

Unit 304 Design work for fitted furniture installation

UAN:	**H/503/2197**
Level:	Level 3
Credit value:	11
GLH:	76
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The unit explores communication and customer service skills both to support learners to meet client requirements. The unit also covers key health and safety issues that may impact the design process. This unit puts into practice the design process for installation and give learners the opportunity to develop skills in design realisation, monitoring and evaluating the design process. The unit will support learners who specialise in fitting furniture and furnishings including window treatments.

Learning outcome
The learner will: 1. know how to communicate during the design process for fitted furniture installation
Assessment criteria
The learner can: 1.1 describe the importance of **good customer service** 1.2 describe methods of **communication** 1.3 identify **key personnel** required to communicate with during the **design process** 1.4 describe effective negotiation techniques 1.5 explain the importance of clarifying the design process to key personnel 1.6 explain how to present a design evaluation 1.7 describe **data** required from the design process.

Range
Good customer service Deliver on promises, keeping the customer updated, exceeding expectations, listen to customers, respond to complaints, be helpful at all times, well trained staff, tailor services to the individual, knowing and understanding customer requirements, flexibility, leadership, task orientation, strong work ethic

Communication
Verbal, written pictorial and/or electronic, negotiation techniques, preparation, sensitivity, listening skills, compromise, commitment, principles, confirmation of agreement

Key personnel
Designer, client, suppliers, installers

Design process
Evaluation, collecting of data relevant for a furniture installation, Prototypes, 2D and 3D models, mock-ups, samples, test pieces, realisation, visualisation, electronic

Data
Client requirements, site requirements, measurements, style of design, location, access, timings

Learning outcome
The learner will: 2. understand the design process for fitted furniture installation
Assessment criteria
The learner can: 2.1 explain how to **respond** client brief for installation 2.2 describe **locations** where design process for installations may be required 2.3 describe **requirements** from installations 2.4 describe how to plan **resources** needed to meet design objectives 2.5 describe **formats** for recording data to support the design process 2.6 explain the importance of agreeing aims of the design process with **key personnel** 2.7 explain how to carry out **design evaluations** 2.8 describe **monitoring processes** during design evaluations 2.9 explain **realisation techniques** to meet design objectives 2.10 describe **tools and equipment** used in the design process 2.11 identify **safe working practice** during the design process 2.12 explain health and safety requirements that impact **design process decisions**.

Range
Respond Budget, location, reality of requirements, advice, resources **Locations** Kitchens, shops, bathrooms, offices, bedrooms, domestic, commercial, public **Requirements** Fitted furniture, furnishings, window treatments

Resources

Off the shelf, bespoke, installer, service engineer

Formats

Measurement recording systems, drawings, specification, site plans, paperwork, client requirements, millimetres, metres, verbal, written, pictorial, electronic, plan-view, perspective, schedule

Key personnel

Designer, client, suppliers, installers

Design evaluations

Design objectives, specifications, client requirements, technical constraints of final design realisation, performance, function, ease of use, user/audience response media, materials, associated tools, equipment, techniques, processes used in producing furniture design, prototypes, materials, technology, designs, products

Monitoring processes

Check against brief: beginning, middle, end verbal checks with client, during installation

Realisation techniques

Small scale realisation techniques cover preparing, forming, joining, assembling, manipulating, editing and finishing the prototype ready for evaluation

Tools and equipment

Measuring tapes/rules/ sticks, electronic devices, stud/metal detectors, sprit level, laser level, plumb line, cameras

Safe working practice

PPE, legal requirements, Approved Code of Practice (ACOP), Health and Safety At Work Act (HASAWA), Control of Substances Hazardous to Health (COSHH), Risk Assessments, Site requirements

Design process decisions

Site of appliances, service installations, waste disposal, substances used, location, hygiene, surfaces, ventilation

Learning outcome
The learner will: 3. be able to carry out the design process for fitted furniture installation
Assessment criteria
The learner can: 3.1 select measuring tools and equipment 3.2 carry out design processes for **locations** 3.3 monitor design processes 3.4 carry out evaluations of design processes 3.5 communicate the results of evaluations 3.6 demonstrate how data is recorded.

Range
Locations Kitchen, office, bedroom

Unit 305 Environmental management and waste management in woodmachining

UAN:	**A/503/2240**
Level:	Level 3
Credit value:	6
GLH:	35
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to develop the knowledge and understanding required to recognise how the manufacturing of wood-based components can impact negatively on the environment and how to provide solutions on reducing the impact through the efficient management of waste generated from the woodmachining process.

Learning outcome
The learner will: 1. understand the risks to the environment that could arise during the production of wood-based components
Assessment criteria
The learner can: 1.1 identify the **issues** relating to materials, products and equipment used in the production of wood-based components which could cause harm to the environment 1.2 identify the **global and local environmental effects** which can occur as a result of production of wood-based components 1.3 define **hazards** and **risks** in the production of wood-based components 1.4 explain the importance of risk assessments in the identification of hazards to the environment.

Range
Issues Consumption of raw materials: nature of the material, source, deforestation, use of exotic hard woods, packaging and associated wastage rate Process efficiency: efficient utilisation of raw materials, energy and water Air emissions: control of releases to air such as solvents, dust, noise and odour

Waste management: elimination, minimisation, reuse, recycling, recovery and disposal of solid wastes with associated controls

Wastewater: minimisation and control of liquid wastes ranging from vehicle wash down water to solvent waste

Ground and groundwater: protection of ground to avoid land contamination

End-of-life: consideration of the design and manufacture of an item to facilitate its reuse, recycling and recovery at the end of its useful life

Equipment: maintenance of vehicles, inefficient extraction equipment, using the correct machine for the job

Global and local environmental effects

Global warming, acid rain, ozone depletion, summer time smog, winter time smog, noise, smell, transport issues

Hazards

A hazard is something with the potential to cause harm (this can include articles, substances, plant or machines, methods of work, the working environment and other aspects of work management)

Risks

A risk is the likelihood of potential harm from a hazard being realised

Learning outcome
The learner will: 2. know how to minimise risks to the environment that could arise during the production of wood-based components
Assessment criteria
The learner can: 2.1 describe the **legislation** relating to environmental matters when producing wood-based components 2.2 identify manufacturers and workplace instructions for the safe use and storage of materials, products and equipment 2.3 identify **driving forces** which encourage good environmental practices 2.4 explain the benefits to the environment of using wood-based products from sustainable sources 2.5 explain the benefits of **sustainable development**.

Range
Legislation Health and Safety at Work Act (HASAWA), Control of Substances Hazardous to Health (COSHH) The Environment Protection Act, Pollution Prevention and Control Act, Clean Air Act, Water Resources Act, Climate Change Levy (Registration and Miscellaneous Provisions) Regulations and related Approved Codes of Practice (ACOP) noise regulations, risk assessments **Driving forces** Legal e.g. penalties for non compliance with legislation, financial e.g. disposal of waste products, market, social e.g. impact on local

community, welfare of workforce

Sustainable development

Increase service efficiency, reduce material intensity, optimise material selection, increase the useful lifetime of embodied resources, increase energy efficiency, reduce release of toxic fumes during production

Learning outcome
The learner will: 3. know how to manage the waste produced during the production of wood-based components
Assessment criteria
The learner can: 3.1 describe **types of waste** that is generated by the woodworking sector 3.2 outline the **key features of the legislation** relating to waste 3.3 outline how 'trade effluent' should be managed under **specific key legislation** 3.4 identify ways of managing **energy** consumed in operations such as machinery operation, compressed air generation, heating and lighting 3.5 identify ways of **managing transport** 3.6 explain the key features of the **waste management hierarchy** 3.7 outline the **benefits** to the organisation of controlling waste.

Range
Types of waste Raw materials e.g. dust, chips, off cuts Energy e.g. removing unnecessary processes, effective use of transport **Key features of legislation** Environmental Protection Act 1990 Part II: Duty of Care:- The chain of individuals involved in the life-cycle of waste, on-site considerations as to how waste is to be stored, labelled, security Transfer considerations as to the transfer of responsibility of waste once it have been passed on Hazardous Waste (England & Wales) Regulations:- waste thinners, empty and obsolete solvent based tins, waste oil and oil/water interceptor residues, fluorescent tubes from lighting and cathode ray tube computer screens Producer Responsibility Obligations Regulations:- cardboard, bubble wrap and tape on goods out, transit packaging on imported goods in, e.g. plastic sheets, metal banding and disposable wooden crates Packaging (Essential Requirement) Regulations:- packaging volume and weight limited, packaging must be designed and produced so as to permit its reuse or recovery, packaging must be manufactured so that noxious and other hazardous substances are minimised with heavy metal concentrations within specified limits. Waste Electrical and Electronic Equipment (Producer Responsibility) Fitted electrical appliances along with their wood based products e.g. kitchen companies selling fitted electrical appliances, furniture with lights

in such as cabinets or electric re-liner mechanisms

Specific key legislation

Water Resources Act Regulations, Landfill Tax Regulations, Water Industry Act, Water Industry Act, Contaminated Land Regulations, Control of Pollution (Oil Storage) (England) Regulations

Energy

Electricity, gas, heating oil and wood fuel

Managing transport

Route planning: as many customers as possible are served by a single vehicle

Return loads: raw materials be collected on the way back or could transport be undertaken for another company

Fuel efficiency training: monitor fuel consumption against driver performance

Maintain vehicles: run efficiently

Waste management hierarchy

Eliminate, minimise, recycle, reuse, treat / incinerate, disposal

Benefits

Cost efficient, legal: avoidance of penalties for non compliance with legislation, protection of company image

Unit 305 Environmental management and waste management in woodmachining

Supporting information

Unit range

Learner must use at least one CNC machine and produce a selection of CNC profiles listed in the range.

Guidance

It is expected that the learner will have completed unit Y29 Manufacturing wood-based components using profiling machines which focuses predominately on producing profiles on 'straight work'. This unit builds on unit Y29 and introduces curved work which is carried out on a vertical spindle moulder using a 'ring fence'. This is regarded as a hazardous process due to the change of grain direction on the curved wood based component which can cause 'kickback'.

AC 1.2: Tutors should be aware of timber technology with reference to the characteristics of wood based materials.

AC 1.14: Maintenance here refers to cleaning, lubrication, storage not sharpening.

Unit 306 Finishing methods in furniture restoration

UAN:	**F/503/2157**
Level:	Level 3
Credit value:	18
GLH:	160
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to provide the learner with the knowledge and skills to apply finishes to items which have under gone restoration, following a finishing plan. Learners will understand the irregular nature of restoration and demonstrate how to respond to differing requirements both from the client and the piece. The skills covered by the unit include: cleaning, stripping, finishes, stains, bleaches, colour matching, painting out, photo logbook. The knowledge acquired by the learner will enable them to take responsibility for initiating and completing tasks and the key processes involved of decision making that applies to professional practice within furniture restoration of wooden and specialist components. It is envisaged that learners that complete this unit are experienced in wood finishing & furniture restoration as this is a specialised unit that builds upon that knowledge. The unit is recommended to be taken in conjunction with unit Assessment of furniture restoration & Furniture restoration.

Learning outcome
The learner will: 1. understand how to carry out finishing methods in furniture restoration
Assessment criteria
The learner can: 1.1 describe **terms** used in finishing when restoring furniture 1.2 describe uses of **finishes** in restoration 1.3 describe uses of **stains** in restoration 1.4 describe uses of pigments 1.5 describe effects of **bleaches** on application 1.6 describe potential consequences of cleaning **methods** 1.7 describe **factors** for selecting finishes in restoration

1.8 explain measures to avoid damage to colour
1.9 explain problems when painting patches on reflective timber
1.10 describe techniques to restore **specialist finishes** in furniture restoration
1.11 explain colour matching
1.12 explain distressing **techniques**
1.13 describe techniques for finishing metal components
1.14 describe the content of finishing plans
1.15 describe finishing **tools and equipment** used during furniture restoration
1.16 describe information to **record** during furniture restoration
1.17 describe **safe working practices**.

Range

Terms
Colour, patina, reflectivity, stain, pigments, solvents, finishes, bleaching, cleaning, stripping, reversible, matt, gloss, distressing

Finishes
Shellac, waxes, oils, varnish, lacquers

Stains
Natural, water, spirit, oil, aniline, chemical

Bleaches
Oxalic acid, sodium hydroxide & hydroxide peroxide, Chlorine, nitric acid

Methods
Water, soap, turpentine, metholated sprits, strippers, cloth, wire wool, burnishing creams

Factors
Reversible, patina, historical use, durability, colour, reflectivity

Specialist finishes
Painted surfaces, Lacquer, Japanned, gold leaf

Techniques
Buffing, aging, lacquering

Tools and equipment
Cloths, Mops, brushes, steel wool, rubbers, wax fillers, mutton cloth, burnishers

Record
Stains, finishes used, action plan, photo log

Safe working practice
PPE, legal requirements, Health and Safety at work act (HASAWA) control of substances hazardous to health (COSHH), risk assessment

Learning outcome
The learner will: 2. be able to carry out finishing methods in furniture restoration
Assessment criteria
The learner can: 2.1 maintain a tidy work area 2.2 organise tools, equipment, stains and finishes 2.3 carry out **preparation** for finishing furniture restoration 2.4 carry out **finishing methods** in furniture restoration 2.5 carry out distressing of finishes 2.6 evaluate finishing 2.7 carry out cleaning finishing on metal components 2.8 demonstrate **record keeping** 2.9 demonstrate safe working practices.

Range
Preparation Surfaces, finishes **Finishing methods** Bleaching, chemical staining, staining, French polishing, wax, oil, colour matching, painting out **Record keeping** Stains, finishes used, action plan, photo log

Unit 306 Finishing methods in furniture restoration

Supporting information

Evidence requirements

Restoration commissions may be small scale (e.g. a small stool or chest) or large scale (e.g. because of the number of items to be restored, or because of the condition of the item, or because of the rarity/value of the item).

Unit 307 Furniture restoration

UAN:	**M/503/2154**
Level:	Level 3
Credit value:	19
GLH:	165
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to provide the learner with the knowledge and skills to complete restoration following an action plan. Learners will understand the irregular nature of restoration and demonstrate how to respond to differing requirements both from the client and the piece. The skills covered by the unit include: dismantling, restoration, conservation, replica making, reassembly, photo logbook and client communication. The knowledge acquired by the learner will enable them to take responsibility for initiating and completing tasks and the key processes involved of decision making that applies to professional practice within furniture restoration of wooden and specialist components. It is envisaged that learners that complete this unit are experienced in furniture making as this is a specialised unit that builds upon that knowledge. The unit is recommended to be taken in conjunction with unit Assessment of furniture restoration, Finishing methods in furniture restoration.

Learning outcome
The learner will: 1. understand how to carry out furniture restoration
Assessment criteria
The learner can: 1.1 describe **terms** used in furniture restoration 1.2 explain the importance of referring to agreed option sheets 1.3 describe **record keeping** for dismantling furniture 1.4 explain how to **dismantle** furniture during furniture restoration 1.5 explain the diverse nature of **materials** in furniture making 1.6 describe techniques to restore **specialist components** in furniture restoration 1.7 describe **measures** to avoid further damage

1.8 describe restoration workshop **layout**
1.9 explain the importance of following **restoration principles**
1.10 describe **restoration options**
1.11 describe **repairs** during furniture restoration
1.12 describe **reassembly methods**
1.13 explain uses of **tools and equipment** during furniture restoration
1.14 explain **professional approaches** to delivering restoration results
1.15 describe **client characteristics**
1.16 describe **safe working practice.**

Range

Terms
Restore, conserve, repair, replicate

Record keeping
Referencing , photo log, timesheet, cost analysis against estimate, action plan

Dismantle
Screws, nails, joints, mouldings, referencing

Materials
Timber based, metals, plastics, rush, cane work, upholstery, gold leaf, ivory, mother of pearl, bone, leather, ormolu, papier mache

Specialist components
Locks, leather, glass, gilt

Measures
Conservation, woodworm treatment, after care advice, damp treatments

Layout
Breakers, benches, platform, finishing area, special process area, storage, resources store

Restoration principles
Like for like, ethical, sympathetic, historical research

Restoration options
Dismantle, replace, conserve, restore, reassembly

Repairs
Surface, structural, door, drawer, moving parts, mouldings, veneers

Reassembly methods
Clamps, jigs, workshop aids

Tools and equipment

Measuring equipment, metal detectors, reverse clamps, syringe, hand tools, scratchstocks, screw borer removers, blow torch, soldering iron, bespoke tools

Professional approaches

Sympathetic, knowledgeable, offering options, solution driven, keeping client updated

Client characteristics

Private, trade, collections

Safe working practice

PPE, legal requirements, Health and Safety at work act (HASAWA), control of substances hazardous to health (COSHH), Risk assessments

Learning outcome
The learner will: 2. be able to carry out furniture restoration
Assessment criteria
The learner can: 2.1 maintain a tidy work area 2.2 organise tools and equipment for effective working 2.3 carry out measures to avoid further deterioration to furniture 2.4 carry out dismantling of furniture 2.5 carry out **repairs** to furniture during restoration 2.6 carry out repairs to specialist components 2.7 carry out reassembly of furniture 2.8 demonstrate **record keeping** 2.9 communicate options to clients.

Range
Repairs Surface, structural, door, drawer, mouldings, veneers **Record keeping** Referencing , photo log, timesheet, cost analysis against estimate, action plan

Unit 307 Furniture restoration

Supporting information

Evidence requirements

Restoration commissions may be small scale (e.g. a small stool or chest) or large scale (e.g. because of the number of items to be restored, or because of the condition of the item, or because of the rarity/value of the item).

Unit range

Learner must use at least one CNC machine and produce a selection of CNC profiles listed in the range.

Guidance

Client

Clients for a restoration may be private or corporate (e.g. via a gallery) or antique dealers.

Degradation

The level of deterioration in the structure and fabric of an item of furniture. Degradation can be mechanical (e.g. joint loosening), physical (e.g. fracture, ripping), biological (e.g. infestation) and/or chemical (e.g. pollutants).

Restoration

The return of an item of older, traditional or antique furniture to its original condition.

Unit 308 Manage the production of wood-based components using machines

UAN:	**J/503/2211**
Level:	Level 3
Credit value:	15
GLH:	130
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to develop the knowledge, understanding and skills, required to organise the set up and operation of a range of wood processing machines to produce wood-based components within the relevant sector of industry. Also to introduce learners to the organisational skills which will support them in overseeing the set up and operation of a range of wood processing machines in the production of wood-based components.

Learning outcome
The learner will: 1. understand the process of organising the setup and operation of machines to produce wood-based components
Assessment criteria
The learner can: 1.1 describe **specifications** used to produce **profiles** on wood- based components 1.2 describe **characteristics** of **wood-based materials** that affect selection 1.3 explain how to store wood-based materials 1.4 describe the function of **machines** 1.5 identify types of tooling used on the machines and describe their application 1.6 describe the setting up **operations** of machines 1.7 describe how wood-based materials are **supported** throughout the machining process 1.8 list a range of profiles and identify the most suitable tooling machine for each 1.9 identify relevant **health and safety guidelines** 1.10 describe the purpose of a risk assessment

1.11 describe how to resolve **problems** that can occur during the organisation, setup and operation of machines to produce wood-based components

1.12 describe how waste material is cleared and disposed of

1.13 explain the importance of **maintenance schedules**

1.14 describe how to **maintain machines** and tooling.

Range

Specifications

Drawings, specifications, schedules, cutting lists, risk assessments, manufacturers' information, tolerances

Profiles

Sawn, planed, profiled, jointed, bored, sanded

Characteristics

Shakes, knots, waney edge, sap, cupping, bowing, springing, twisting, splitting, fungal staining, fungal and insect attack, moisture content, kilning defects, case hardening, timber conversion, working properties

Wood-based materials

Hardwood, softwood, manufactured board

Machines

Sawing, planing, profiling, jointing, sanding, CNC machines

Operations

Isolation, start up and shut down of machine, handling, fitting and adjustment of tooling and equipment, guards, LEV, use and manufacture of feed and dimensional control devices

Supported

Trestles, conveyors, extension tables, support rollers, supporting personnel

Health and safety guidelines

Manufacturers' instructions, Health and Safety at Work Act (HASWA), Provision and Use of Work Equipment Regs (PUWER), Manual Handling Operations Regs, Control of Substances Hazardous to Health Regs (COSHH), Control of Noise at Work Regs, Electricity at Work Regs, Personal Protective Equipment Regs (PPE) and related Approved Codes of Practice (ACOP)

Problems

Set up and operation: machine malfunction, wood-based component reveals or develops undesirable characteristic during processing,

Component feed organisation: staffing issues, delivery issues, machine down time

Maintenance schedules

Visual inspection, routine maintenance, lubrication schedule, servicing schedule timetable

Maintain machines

Cleaning, lubrication, oiling, clearing resin build up, planned preventative measures

Learning outcome
The learner will: 2. be able to organise the setup and operation of machines in the production of wood based components to meet specifications
Assessment criteria
The learner can: 2.1 organise the setup and operation of machines in the production of wood based components 2.2 produce and extract data from specifications 2.3 select machines to meet specifications and optimise performance 2.4 carry out a risk assessment 2.5 carry out setting up operations to meet specifications 2.6 demonstrate **safe practices** when hand feeding wood-based components through machines 2.7 feed wood-based components through machines at controlled pace to obtain the desired surface finish 2.8 produce profiles on wood-based materials 2.9 resolve problems as and when they occur 2.10 maintain a tidy work area, organise tools and equipment for effective working 2.11 comply with the relevant health and safety guidelines.

Range
Safe practices Use of feed and dimensional control devices, position of hands and body in respect of proximity to moving tooling and components in the event of component 'kick-back'

Learning outcome
The learner will: 3. understand how to manage teams and individuals in production of wood based components
Assessment criteria
The learner can: 3.1 describe how to produce **work plans** in conjunction with team members 3.2 describe the importance of effective communication when explaining work plans 3.3 outline the importance of reviewing work plans regularly 3.4 explain the importance of providing **team members** with the **opportunity** to contribute to the planning and organisation of their work

3.5	identify the types of **organisational constraints** which influence production planning
3.6	describe how to develop realistic and achievable work plans for team members
3.7	identify methods of producing a productive working environment
3.8	describe how to give **feedback** to team members to meet **situations**
3.9	describe job roles and responsibilities in **organisations** within the woodworking sector.

Range

Work plans

Short term, medium term, to meet team objectives, to meet individual objectives

Team members

Colleagues for whom you have line responsibility, management

Opportunity

One-to –one, team meetings, tool box talks

Organisational constraints

Resource availability, time allocations, team members abilities, organisational policies, organisational objective, health and safety legalisation

Feedback

Spoken, written, positive, negative

Situations

During normal day to day activities, when required to maintain motivation, morale and effectiveness, during formal appraisals, disciplining, team meetings and briefings, during confidential discussions at work

Organisations

Small, medium, large

Unit 308 Manage the production of wood-based components using machines

Supporting information

Guidance

It is expected that the learner will have completed the mandatory and optional units from Level 2 NVQ Diploma in Wood Machining - Furniture 5782-26, 500/8481/1 as this unit builds on level 2 and introduces the learner to organisational skills which will support them in overseeing the set up and operation of a range of wood processing machines to produce wood-based components.

AC 1.2: Tutors should be aware of timber technology with reference to the characteristics of wood based materials.

AC 1.14: Maintenance here refers to cleaning, lubrication, storage not sharpening.

Unit 309 Manufacturing wood-based components using CNC machines

UAN:	**L/503/2212**
Level:	Level 3
Credit value:	17
GLH:	130
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to develop the knowledge, understanding and skills, required to set up and operate a range of computer numerical controlled machines to produce computer numerical controlled machine profiles on wood-based components within the relevant sector of industry.

Learning outcome
The learner will: 1. understand the process of programming, setting up, and operating computer numerical controlled machines to produce a range of profiles on wood-based components
Assessment criteria
The learner can: 1.1 describe **specifications** used to produce a range of profiles on wood-based components 1.2 describe **characteristics** of **wood-based materials** that affect selection 1.3 explain how to store wood-based materials 1.4 describe the function of **computer numerical controlled machines** 1.5 describe **methods** of scripting a part programme 1.6 explain how to input data into computer numerical controlled machines 1.7 explain how to programme prove 1.8 identify types of **tooling** and their application 1.9 describe the setting up **operations** of computer numerical controlled machines 1.10 describe how wood-based materials are **secured** throughout the machining process 1.11 list a range of **computer numerical controlled machine profiles** and identify the most suitable CNC for each

1.12 identify relevant **health and safety guidelines**
1.13 describe the purpose of a risk assessment
1.14 describe how to resolve **problems** in the computer numerical controlled process
1.15 describe how waste material is cleared and disposed of
1.16 explain program storage and retrieval methods for electronic data
1.17 describe methods of inputting data into the machine control
1.18 explain the importance of **maintenance schedules**
1.19 describe how to **maintain computer numerical controlled machines**.

Range

Specifications
Drawings, specifications, schedules, cutting lists, risk assessments, manufacturers' information, tolerances

Characteristics
Shakes, knots, waney edge, sap, cupping, bowing, springing, twisting, splitting, fungal staining, fungal and insect attack, moisture content, kilning defects, case hardening, timber conversion, working properties

Wood-based materials
Hardwood, softwood, manufactured board

Computer numerical controlled machines
CNC router, CNC lathe, CNC saw

Methods
Manually writing part programs using standard coding system ('G' and 'M' codes), use of dedicated software CAD/CAM (Computer Aided Design/Computer Aided Manufacturer

Tooling
Router cutters, drill bits, saw blades

Operations
Isolation, start up and shut down of machine, handling, fitting and adjustment of tooling, writing part programs, inputting programs, program proving, securing component, fitting and adjustment of tooling, guarding, LEV

Secured
Vacuum table, clamps, jigs

Computer numerical controlled machine profiles
Straight, contoured, bored holes, sawn profiles

Health and safety guidelines
Manufacturers' instructions, Health and Safety at Work Act (HASWA), Provision and Use of Work Equipment Regs (PUWER), Manual Handling Operations Regs, Control of Substances Hazardous to Health Regs

(COSHH), Control of Noise at Work Regs, Electricity at Work Regs, Personal Protective Equipment Regs (PPE) and related Approved Codes of Practice (ACOP)

Problems

Machine malfunction, program proving error report, component moves off fixing during processing, wood-based component reveals or develops undesirable characteristic during processing

Maintenance schedules

Visual inspection, routine maintenance, lubrication schedule, servicing schedule timetable

Maintain CNC machines and tooling

Cleaning, lubrication, oiling, clearing resin build up, planned preventative measures

Learning outcome
The learner will: 2. be able to operate the computer numerical controlled machine safely whilst producing profiles on wood based components to specifications
Assessment criteria
The learner can: 2.1 extract data from specifications 2.2 select computer numerical controlled machines to meet specifications 2.3 write a part programme from specifications 2.4 carry out a risk assessment 2.5 carry out setting up operations to meet specifications 2.6 demonstrate **safe practices** when feeding wood-based components through the computer numerical controlled machines 2.7 feed wood-based components through computer numerical controlled machines at correct speed to obtain the desired surface finish 2.8 produce CNC profiles on wood-based materials 2.9 load and unload components onto work table 2.10 resolve problems as and when they occur 2.11 maintain a tidy work area, organise tools and equipment for effective working 2.12 comply with the relevant health and safety guidelines.

Range
Safe practices Stay outside computer numerical controlled machine enclosure, proximity of body to movable worktable

Unit 309 Manufacturing wood-based components using CNC machines

Supporting information

Unit range

Learner must use at least one CNC machine and produce a selection of CNC profiles listed in the range.

Guidance

It is expected that the learner will have completed unit Y31 Manufacturing wood-based components using computer numerical controlled machines which focuses predominately on using data which has been produced by someone else. This unit builds on unit Y29 and introduces the learner to the process of writing part programs either manually or by machine specific software.

AC 1.2: Tutors should be aware of timber technology with reference to the characteristics of wood based materials.

AC 1.18: Maintenance here refers to cleaning, lubrication, storage not sharpening.

Unit 310 Manufacturing wood-based components using profiling machines

UAN:	**J/503/2239**
Level:	Level 3
Credit value:	10
GLH:	90
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to develop the knowledge, understanding and skills, required to set up and operate a range of profiling machines to produce curved profiles on wood-based components within the relevant sector of industry.

Learning outcome
The learner will: 1. understand the process of setting up and operating profiling machines to produce a range of curved profiles on wood-based components
Assessment criteria
The learner can: 1.1 describe **specifications** used to produce complex profiles on wood-based components 1.2 describe **characteristics** of **wood-based materials** that affect selection 1.3 explain how to store wood-based materials 1.4 describe the function of **profiling machines** 1.5 identify types of **profile cutters** and their application 1.6 describe the design of profile cutters 1.7 describe the setting up **operations** of profiling machines 1.8 explain the application of component **feed and dimensional control devices** 1.9 describe how wood-based materials are **supported** throughout the machining process 1.10 list a range of **curved profiles** and identify the most suitable profile cutter and profiling machines for each 1.11 identify relevant **health and safety guidelines** 1.12 describe the purpose of a risk assessment 1.13 describe how to resolve **problems** that can occur in the profiling process

1.14 describe how waste material is cleared and disposed of
1.15 explain the importance of **maintenance schedules**
1.16 describe how to **maintain profile machines and cutters**.

Range

Specifications
Drawings, specifications, schedules, cutting lists, risk assessments, manufacturers' information, tolerances

Characteristics
Shakes, knots, waney edge, sap, cupping, bowing, springing, twisting, splitting, fungal staining, fungal and insect attack, moisture content, kilning defects, case hardening, timber conversion, working properties

Wood-based materials
Hardwood, softwood, manufactured board

Profiling machines
Vertical spindle moulding machine (shaped work) routing machines (shaped work)

Profile cutters
Solid profile block, rebate block, wobble saw, flat plate groove saw, adjustable groove head, variable angle bevelling blocks, limited cutter projection tooling, router cutters

Operations
Isolation, start up and shut down of machine, handling, fitting and adjustment of profile cutters, tooling and equipment, guards, LEV, use and manufacture of feed and dimensional control devices

Feed and dimensional control devices
Push sticks, ring-fence, pressure pads, jigs, auxiliary tables, bed piece, shop made devices

Supported
Extension tables, support rollers, supporting personnel

Curved profiles
Grooving curved component, rebating curved component, bevelling curved component, contour moulding curved component, stopped profiles on curved component

Health and safety guidelines
Manufacturers' instructions, Health and Safety at Work Act (HASWA), Provision and Use of Work Equipment Regs (PUWER), Manual Handling Operations Regs, Control of Substances Hazardous to Health Regs (COSHH), Control of Noise at Work Regs, Electricity at Work Regs, Personal Protective Equipment Regs (PPE) and related Approved Codes of Practice (ACOP)

Problems

Machine malfunction, wood-based component reveals or develops undesirable characteristic during processing

Maintenance schedules

Visual inspection, routine maintenance, lubrication schedule, servicing schedule timetable

Maintain profiling machines and profile cutters

Cleaning, lubrication, oiling, clearing resin build up, planned preventative measures

Learning outcome
The learner will: 2. be able to operate the profiling machine safely whilst producing curved profiles on wood based components to specifications
Assessment criteria
The learner can: 2.1 produce and extract data from specifications 2.2 select profiling machines to meet specifications 2.3 carry out a risk assessment 2.4 carry out setting up operations to meet specifications 2.5 demonstrate **safe practices** when hand feeding wood-based components through profiling machines 2.6 feed wood-based components through profiling machines at controlled pace to obtain the desired surface finish 2.7 produce curved profiles on wood-based materials 2.8 resolve problems as and when they occur 2.9 maintain a tidy work area, organise tools and equipment for effective working 2.10 comply with the relevant health and safety guidelines.

Range
Safe practices Use of feed and dimensional control devices, position of hands and body in respect of proximity to profile cutter and moving component in the event of component 'kick-back'

Unit 310 Manufacturing wood-based components using profiling machines

Supporting information

Unit range

Learner must use at least one CNC machine and produce a selection of CNC profiles listed in the range.

Guidance

It is expected that the learner will have completed unit Y29 Manufacturing wood-based components using profiling machines which focuses predominately on producing profiles on 'straight work'. This unit builds on unit Y29 and introduces curved work which is carried out on a vertical spindle moulder using a 'ring fence'. This is regarded as a hazardous process due to the change of grain direction on the curved wood based component which can cause 'kickback'.

AC 1.2: Tutors should be aware of timber technology with reference to the characteristics of wood based materials.

AC 1.14: Maintenance here refers to cleaning, lubrication, storage not sharpening.

Unit 311 Produce drawings using CAD

UAN:	**M/503/0422**
Level:	Level 3
Credit value:	9
GLH:	80
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	This unit enables the candidate to develop the skills and knowledge in computer aided design (CAD), in terms of producing 2D and 3D drawings, including the use of 3D modelling methods. Although most of the commands referred to are generic and would apply to all CAD systems, some terms may be specific to one particular application (e.g. AutoCAD). Where this is the case an equivalent alternative application commands may be appropriate.

Learning outcome
The learner will: 1. be able to set-up to produce cad drawings
Assessment criteria
The learner can: 1.1 explain the function of hardware components used for CAD which are unique to CAD 1.2 explain the function of data input devices used in CAD 1.3 explain the function of data output devices used in CAD 1.4 explain CAD software requirements 1.5 evaluate methods of data storage and make recommendations for their use 1.6 explain the reasons for backup files and saving drawings at regular intervals 1.7 describe the role of drawings in communicating technical information 1.8 critically compare CAD systems with manual draughting methods 1.9 explain the purpose of prototype drawings and how they are used 1.10 set drawing aids 1.11 create layers 1.12 set drawing limits to suit component dimensions 1.13 set suitable drawing parameters 1.14 use main menu drawing commands to produce a variety of different shapes

1.15 create, save and load a range of library drawings.

Learning outcome
The learner will: 2. be able to produce 2d cad drawings
Assessment criteria
The learner can: 2.1 set drawing parameters on the CAD system 2.2 explain the reasons for using structured layers and how they are created 2.3 explain the function of the commands used in producing 2D CAD drawings 2.4 produce 2D CAD drawings that contain essential technical information 2.5 apply standard conventions to 2D CAD drawings 2.6 differentiate between absolute, relative (incremental) and polar co-ordinate systems 2.7 differentiate between world and user co-ordinate systems 2.8 review and revise 2D CAD drawings by editing and manipulating graphical data 2.9 produce text on 2D CAD drawings 2.10 import and position library items onto 2D CAD drawings 2.11 apply conventions relating to dimensioning to 2D CAD drawings 2.12 apply the conventions for cross-hatching areas to 2D CAD drawings 2.13 save drawings using appropriate file names 2.14 load and edit existing drawings 2.15 evaluate the process of producing a 2D CAD drawing and recommend improvements to the process.

Learning outcome
The learner will: 3. be able to produce 3d cad drawings
Assessment criteria
The learner can: 3.1 explain the role of detail and assembly drawings 3.2 critically compare the 3D CAD drawing visual representation methods available 3.3 explain the function of the commands used in producing 3D CAD drawings 3.4 produce 3D CAD drawings that contain essential technical information 3.5 review and revise 3D CAD drawings by editing and manipulating graphical data 3.6 apply the shading and rendering to 3D CAD drawings 3.7 save drawings using appropriate file names 3.8 load and edit existing drawings.

Learning outcome
The learner will: 4. be able to produce hard copies of cad drawings
Assessment criteria
The learner can: 4.1 print/plot hard copies of different sized CAD drawings 4.2 print/plot hard copies of modified CAD drawings 4.3 critically compare types of printer/plotter available 4.4 import drawings into presentation software for demonstration purposes 4.5 transfer CAD data to a computer-aided manufacturing Computer Aided Manufacturing (CAM) system.

Unit 312 Production planning in furniture and furnishing making

UAN:	**J/503/2161**
Level:	Level 3
Credit value:	18
GLH:	85
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to provide the learner with the knowledge and skills to produce production plans and carry out a supervisory role. The skills covered by the unit include: clarifying information, costing, material for procurement, evaluating and supervising others. The knowledge acquired by the learner will enable them to take responsibility for initiating and completing tasks and the key processes involved in developing a production planning. It is envisaged that learners that complete this unit are experienced in making furniture or furnishings as this unit builds upon previous knowledge of production requirements.

Learning outcome
The learner will: 1. understand how to plan for production
Assessment criteria
The learner can: 1.1 describe **processes** for developing production plans 1.2 describe **production planning methods** 1.3 explain advantages of production planning methods 1.4 explain disadvantages of production planning methods 1.5 describe **methods** for planning procurement of materials 1.6 explain **costs** of productions 1.7 explain roles of **key personnel** in production 1.8 describe **record keeping** for production 1.9 explain the importance of method statements 1.10 describe the content of risk assessments 1.11 describe **evaluation** of production processes 1.12 describe **stock control methods.**

Range
Processes Work plans, costing, waste management, production times, route plans **Production planning methods** Bespoke, batch, mass-production, just in time (JIT), cell production, material process steering (MPS), material resource planning (MRP) **Methods** Cutting list, nominal cutting lists, timber volume, material efficiency selection of materials, fixtures and fittings, sundries **Costs** Development costs, materials, labour, overheads (direct, indirect), taxes, delivery, fitting, wastage **Key personnel** Designer, development technician, pre-production, production manager, staff, procurement **Record keeping** Financial control, material usage, labour costs, client communication, work plans, batch details **Evaluation** Efficiency, methods, waste management, safety **Stock control methods** KAIBAN, TPS, bin card, work-in-progress

Learning outcome
The learner will: 2. understand how to manage teams and individuals in production
Assessment criteria
The learner can: 2.1 describe how to produce **work plans** in conjunction with team members 2.2 describe the importance of effective communication with teams 2.3 explain the importance of **reviewing** work plans regularly with teams 2.4 describe types of **organisational constraints** which influence production planning 2.5 describe **supervisory** responsibilities 2.6 describe how to give **feedback** to team members 2.7 explain supervisory **health and safety** responsibilities 2.8 explain how to resolve health and safety issues 2.9 describe job roles within production **organisations**.

Range
Work plans Team targets, individual targets, short term, medium term **Reviewing** Progress, identifying delays, assembly methods, quality **Organisational constraints** Resource availability, time allocation, team members skills, health & safety legalisation **Supervisory responsibilities** Machines, personnel, materials **Feedback** Spoken, written, positive, negative **Health and safety** Industry/sector specific legislation, regulations, guidelines, code of practice relating to carrying out work, for self and others **Organisations** Small, medium, large

Learning outcome
The learner will: 3. be able to plan for production
Assessment criteria
The learner can: 3.1 produce production plans 3.2 procure materials for production 3.3 carry out costing for production 3.4 carry out **record keeping** 3.5 produce method statements 3.6 carry out risk assessments 3.7 evaluate production processes.

Range
Record keeping Financial control, material usage, labour costs, client communication, work plans, batch details

Learning outcome
The learner will: 4. be able to supervise teams and individuals in production
Assessment criteria
The learner can: 4.1 produce **work plans** in conjunction with team members 4.2 communicate effectively with teams 4.3 review work plans with teams 4.4 carry out **supervisory responsibilities** 4.5 give **feedback** to team members.

Range
Work plans Team targets, individual targets, short term, medium term **Supervisory responsibilities** Machines, personnel, materials **Feedback** Spoken, written, positive, negative

Unit 313 Prototype design in furniture making

UAN:	**M/503/2168**
Level:	Level 3
Credit value:	24
GLH:	220
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to provide the learner with the knowledge and skills to develop prototypes using design ideas. Learners will evaluate prototypes and develop a production process. The skills covered by the unit include: clarifying information, research, analysing, evaluating, technical drawing, jig making and costing. The knowledge acquired by the learner will enable them to take responsibility for initiating and completing tasks and the key processes involved in developing an item of furniture. It is envisaged that learners that complete this unit are experienced in furniture making, wood machining and technical drawing.

Learning outcome
The learner will: 1. understand how to respond to design ideas
Assessment criteria
The learner can: 1.1 describe **design prototypes** 1.2 describe **reasons** for design prototypes 1.3 identify **key personnel** that create design ideas 1.4 explain **aims** of design prototypes 1.5 describe **stages** of design prototype production 1.6 describe **information** required to start creating design prototypes 1.7 explain the importance of **product knowledge** 1.8 describe **techniques** to meet design objectives 1.9 explain how to **evaluate** prototypes 1.10 describe **technical constraints** on prototypes 1.11 explain the importance of compliance to patents, copyright and intellectual property issues

1.12 describe when **negotiation techniques** may be required
1.13 describe effective negotiation techniques
1.14 describe **data** to be recorded.

Range

Design prototype
2D and 3D models, mock-ups, samples, test pieces, small scale realisation techniques

Reasons
Problem solving, construction, section sizes, jointing, scheme of work, jigs required, derive technical specifications

Key personnel
Client, designer

Aims
Meet design ideas, purpose, durability, strength, aesthetics, budgetary limits

Stages
Design ideas, sketch, basic specification, working drawing, product development, modifications, pre-production, production

Information
Component dimensions, functionality, fittings, fixtures, finish, timescales, materials

Product knowledge
Use of materials, production methods, copyright, intellectual property rights

Techniques
Preparing, forming, jointing, shaping, assembling, finishing

Evaluate
Fit for purpose, match design idea, functional, ongoing

Technical constraints
Manufacturing methods, performance of materials, availability of materials

Negotiation techniques
Preparation, sensitivity, listening skills, compromise, commitment, principles, confirmation of agreement

Data
Scheme of work, production process, timescale, costs

Learning outcome
The learner will: 2. know how to create design prototypes
Assessment criteria
The learner can: 2.1 describe **information** required on working drawings 2.2 explain **processes** for developing design prototypes 2.3 identity material **characteristics** that inform component choice 2.4 describe **purposes** of jigs and templates 2.5 describe the process of **evaluating jigs and templates** 2.6 describe the importance of risk assessing jigs 2.7 explain how to **evaluate** design prototypes 2.8 describe functions of **tools and equipment** used in design prototype development 2.9 describe uses of development **materials** 2.10 explain the importance of quality checks 2.11 describe **information** included on template labelling 2.12 explain information that should be included in **technical specifications** 2.13 explain how to calculate cost of component parts 2.14 describe **safe working practice.**

Range
Information Component sizes, materials, finish, jointing, tolerances, sections, profiles, fixtures and fittings **Processes** Discussion, create shape, create templates, adjusting, evaluating, create technical specifications **Characteristics** Stability, strength, durability, visual **Purpose** Safety, speed, consistency **Evaluating jigs and templates** Wear, Safety, speed, consistency **Evaluate** Performance, function, ease of use, client response **Tools and equipment** Hand tools, power tools, machines

Materials
Grade of filling, support system type, wood type, metals, fabric, sundries, plastics, cardboard, kiln dried, air dried, man-made board, hide

Information
Abbreviations, centre lines, reference points, model name, date created, created by initials, version

Technical specifications
Units of measurement, conventions, terms used, formats, cutting list, nesting, tolerance

Safe working practice
PPE, legal requirements, Approved Code of Practice (ACOP), Health and Safety At Work Act (HASAWA), Control of Substances Hazardous to Health (COSHH), Risk Assessments, Provision and use of work equipment (PUWER)

Learning outcome
The learner will: 3. be able to create design prototypes in furniture making
Assessment criteria
The learner can: 3.1 maintain a tidy work area 3.2 organise tools and equipment for effective working 3.3 select materials for developing prototypes 3.4 develop jigs 3.5 carry out a risk assessments on jigs 3.6 evaluate jigs 3.7 create design prototypes 3.8 evaluate design prototypes 3.9 record data 3.10 produce technical specifications of design prototypes.

Unit 314 Prototype design in modern upholstery

UAN:	**J/503/2208**
Level:	Level 3
Credit value:	24
GLH:	200
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to provide the learner with the knowledge and skills to produce, evaluate and presenting design prototypes for upholstered furniture. The unit introduces learners to negotiation techniques to support communicating with designers and non-designers. The skills covered by this unit include: choice of materials and the influence that ergonomics and anthropometrics have on the functionality of furniture, development techniques in producing prototypes. Also includes the evaluation of design prototypes at various stages including frame stand-up and finished piece.

Learning outcome
The learner will: 1. understand how to respond to design ideas
Assessment criteria
The learner can: 1.1 identify key personnel that create design ideas 1.2 explain **aims** of design prototypes 1.3 outline the **stages** of design prototype timeline 1.4 describe **information** required to start creating design prototypes 1.5 describe **design prototype**s 1.6 explain the importance of **product knowledge** 1.7 describe **techniques** to meet design objectives 1.8 explain how to **evaluate** prototypes 1.9 describe **technical constraints** on prototypes 1.10 explain the importance of compliance to patents, copyright and intellectual property issues 1.11 describe when negotiation techniques may be required 1.12 describe effective **negotiation techniques**.

Range
Aims Meet design ideas, purpose, durability, comfort, appearance, budgetary limits **Stages** Design ideas, sketch, basic specification, working drawing, product development, 'stand up', modifications, pre-production, production **Information** Finished size, level of comfort, functionality, rake of back, length of seat, height of seat, height of arms, distance between arms **Design prototype** 2D and 3D models, mock-ups, samples, test pieces, small scale realisation techniques **Product knowledge** Use of materials, current designs, product trends, shapes, styles, copyright, intellectual property rights **Techniques** Preparing, forming, joining, assembling, manipulating, editing, finishing **Evaluate** Fit for purpose, match design brief, functional, ongoing **Technical constraints** Manufacturing methods, performance of materials, availability of materials **Negotiation techniques** Preparation, sensitivity, listening skills, compromise, commitment, principles, confirmation of agreement

Learning outcome
The learner will: 2. know how to create design prototypes
Assessment criteria
The learner can: 2.1 explain **techniques** used in frame design 2.2 describe uses of common piece parts 2.3 describe purposes of **materials** 2.4 explain **factors** affecting material choice 2.5 explain **processes** for developing design prototypes 2.6 explain how to **evaluate** design prototypes 2.7 describe functions of **tools and equipment** used in design prototype development

2.8 describe uses of **development materials**
2.9 describe **tolerance** levels of component parts
2.10 explain the importance of quality checking templates
2.11 describe **information** included on template labelling
2.12 explain the importance of compliance with furniture **standards**
2.13 explain information that should be included in **technical specifications**
2.14 explain how to calculate cost of component parts
2.15 describe **safe working practice.**

Range

Techniques
Anthropometrics, ergonomics, working drawing, rake, jointing, material, shape, common piece parts

Materials
Grade of filling, support system type, wood type, metals, fabric, sundries, plastics, cardboard, kiln dried, air dried, man-made board, hide

Factors
Cost, durability, firmness, softness, complex shape, time restraints, availability

Processes
Discussion, create shape, create templates, development fabric, recording, measuring, drawing, adjusting, evaluating, pinning, trimming, create technical specifications

Evaluate
Performance, function, ease of use, user/audience response

Tools and equipment
Foam cutter, screw gun, jig saw, scissors, ruler, set square, measuring tape, protractor, staple gun, staple lifter, hammer, buttoning needle, sewing machine, overlocker

Development materials
Striped, perspex, calico

Tolerance
Stretch and non stretch fabric, natural hide, shape, dimension

Information
Abbreviations, pattern lines, centre lines, notches, model name, date created, version

Standards
Furniture and furnishings (fire safety) regulations, British Standard, CE

Technical specifications

Units of measurement, conventions, terms used, formats, cutting list, cutting plans, frame drawings

Safe working practice

PPE, legal requirements, Approved Code of Practice (ACOP), Health and Safety At Work Act (HASAWA), Control of Substances Hazardous to Health (COSHH), Risk Assessments, Provision and use of work equipment (PUWER)

Learning outcome
The learner will: 3. be able to create design prototypes for modern upholstery
Assessment criteria
The learner can: 3.1 produce frame drawings using design briefs 3.2 create design prototypes for items of modern upholstery 3.3 evaluate design prototypes 3.4 produce technical specifications of design prototypes 3.5 calculate cost of component parts.

Unit 315 Research and product design in furniture making

UAN:	**T/503/2172**
Level:	Level 3
Credit value:	12
GLH:	80
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to provide the learner with the knowledge and skills to work through a design cycle and to evaluate a design against a brief and research. The skills covered by the unit include: clarifying information, research, analysing, evaluating and drawing. The knowledge acquired by the learner will enable them to take responsibility for initiating and completing tasks and the key processes involved in designing furniture.

Learning outcome
The learner will: 1. understand how to respond to design briefs
Assessment criteria
The learner can: 1.1 explain the use of designs 1.2 explain **design brief** objectives 1.3 describe stages of the **design process** 1.4 explain how to predict **viability** of designs 1.5 explain the importance of **product knowledge** 1.6 identify **periods of design** 1.7 explain importance of thorough evaluation of research 1.8 explain how to prepare **visual interpretations** of designs 1.9 describe how designs can impact **visual features** of products 1.10 explain how to work out golden sections 1.11 describe **applications** of golden sections 1.12 describe how to **communicate** design proposals 1.13 explain how **final designs** will be used 1.14 describe **factors** to evaluate during design processes 1.15 describe **recording techniques**.

Range
Design brief Function, durability, strength, aesthetics, budgetary limits, batch production, one-off **Design process** Discussion, design brief, initial drawings, material research, market research, ergonomics, development, evaluation, final ideas, presentation **Viability** Manufacturing methods, new materials, production costs **Product knowledge** Current designs, product trends, styles, sustainability, copyright, intellectual property rights, characteristics of materials **Periods of design** 1850 to present **Visual interpretation** Sketches, presentation drawings, working drawings, models, samples, CAD drawing, multimedia presentation, graphic artwork, 3D displays (models, samples and prototypes), renderings **Visual features** Height, mechanisms, shape, position of fixtures and fittings, ergonomics **Applications** Drawers, ratio **Communicate** Perspective drawings, renderings, plan view, CAD, verbal description, written description, photos, research, roles and responsibilities **Final design** Realised, produced, installed, replicated **Factors** Function, ergonomics, aesthetics, cost, production time, process **Recording techniques** Minutes, notes, follow up letters, action plans, visual recording

Learning outcome
The learner will: 2. be able to respond to design briefs
Assessment criteria
The learner can: 2.1 maintain a tidy work area 2.2 organise tools and equipment for effective working 2.3 research design briefs 2.4 carry out **design processes** 2.5 use **golden sections** in furniture designs 2.6 present final designs 2.7 evaluate design processes.

Range
Design process Discussion, design brief, initial drawings, material research, market research, ergonomics, development, evaluation **Golden section** Ratio, drawer grading

Unit 316 Research and product development for modern furniture upholstery

UAN:	**A/503/2206**
Level:	Level 3
Credit value:	20
GLH:	160
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to provide the learner with the knowledge and skills to research, evaluate, produce and present design ideas for upholstered furniture. The skills covered by this unit include: researching new materials, new manufacturing techniques and the influence that ergonomics and anthropometrics have on the functionality of furniture. Also includes the evaluation of design briefs using qualitative and quantitative research techniques to produce drawings in different forms of media. Learners will gain presentation skills required to take designs forward into the development stage.

Learning outcome
The learner will: 1. understand how to respond to design briefs
Assessment criteria
The learner can: 1.1 explain the use of designs 1.2 explain **design brief** objectives 1.3 describe stages of the **design process** 1.4 explain how to predict **viability** of designs 1.5 explain the importance of **product knowledge** 1.6 explain importance of thorough evaluation of research 1.7 explain how to prepare **visual interpretations** of designs 1.8 describe how designs can impact **visual features** of products 1.9 describe how to **communicate** design proposals 1.10 explain how to make **recommendations** in support of design options 1.11 explain how **final designs** will be used 1.12 describe **recording techniques**.

Range
Design brief Function, durability, strength, aesthetics, budgetary limits, environmental conditions, batch production, one-off **Design process** Discussion, design brief, initial drawings, analyse existing piece parts, material research, market research, ergonomics, anthropometrics, presentation, development **Viability** Manufacturing methods, new materials, production costs **Product knowledge** Fabrics, fillings, suspension systems, current designs, product trends, shapes, styles, sustainability, copyright, intellectual property rights **Visual interpretation** Sketches, presentation drawings, working drawings, models, samples, CAD drawing, multimedia presentation, graphic artwork, 3D displays (models, samples and prototypes), mood board **Visual features** Fabrics, fillings, height, distance between arms, mechanisms, shape, show wood, position of controls, ergonomics **Communicate** Isometrics drawings, plan view, CAD, verbal description, written description, frame standup, photos, research, roles and responsibilities **Recommendations** Manufacturing methods, costs, availability of products, aesthetics, market demand **Final design** Realised, produced, installed, replicated **Recording techniques** Minutes, notes, follow up letters, action plans, audio/visual recording

Learning outcome
The learner will: 2. understand how to evaluate design ideas against briefs
Assessment criteria
The learner can: 2.1 explain how to evaluate **design ideas** against brief 2.2 describe **quantitative** evaluation techniques 2.3 describe **qualitative** evaluation techniques 2.4 describe current British and European **performance standards** 2.5 describe **technical constraints** on research and product design.

Range
Design ideas Fitness for purpose, aesthetic qualities, ergonomics, anthropometrics **Quantitative** Measuring, weighing, performance testing, fitting **Qualitative** Focus groups, surveys, self evaluation **Performance standards** Research organisations, durability, performance of fabrics and foam, dimensional standards **Technical constraints** Manufacturing methods, performance of materials, availability of materials

Learning outcome
The learner will: 3. be able to produce design ideas for modern upholstery
Assessment criteria
The learner can: 3.1 carry out research to inform design ideas 3.2 produce design ideas 3.3 produce design visuals 3.4 communicate design ideas 3.5 evaluate design ideas.

Unit 317 Restoration of traditional furniture upholstery

UAN:	**T/503/2205**
Level:	Level 3
Credit value:	29
GLH:	250
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to provide the learner with the knowledge and skills to research, evaluate, produce and present restoration ideas for traditional upholstered furniture. The unit also looks at situations where replication may be required. The skills covered by this unit include: researching traditional materials, traditional manufacturing techniques and the influence that designers and period furniture had on the development of furniture. Also includes the evaluation of reproducing traditional materials via modern manufacturing methods to maintain authenticity of the piece.

Learning outcome
The learner will: 1. know how to research traditional furniture upholstery
Assessment criteria
The learner can: 1.1 explain the importance of following upholstery **restoration principles** 1.2 describe **situations** where upholstery reproduction occurs 1.3 describe **sources** that can provide valid information 1.4 explain the importance of understanding **original production techniques** 1.5 explain the importance of understanding uses of **original materials** 1.6 describe **historical techniques** for furniture production that are still in use today 1.7 describe **historical materials** for furniture production that are still in use today 1.8 explain **situations** where use of modern materials and techniques will substitute traditional methods

1.9	describe the importance of **recording** solutions to problems
1.10	describe information that should be recorded
1.11	describe **problems** likely to be associated with restoring traditionally upholstered furniture
1.12	explain importance of thorough **evaluation** of research.

Range

Restoration principles

Like for like, ethical, sympathetic, historical research

Situations

Replication, market demand, continuing traditional methods, period dramas

Sources

Primary (other people, professional/trade organisations), secondary (historical records, period furniture, designers, manufacturers specifications, internet)

Original production techniques

Performance, construction (iron back and wooden frame), design, application sequence, foundations

Original materials

Fillings, fabrics (silk, tapestry), suspension systems, supports, foundations

Historical techniques

Deep buttoning (square, diamond, coach buttoning), Vandyke join, scroll arm, sprung edge

Historical materials

Horse hair, coir fibre, mocca cane, jute webbing, sprung units, fabrics (velvet, silk, cotton, cambric)

Situations

Furniture fire safety regulations, materials unavailable

Recording

Research notes, supplier information, sources, referencing , photo log, timesheet, action plan

Problems

Infestation, broken frame, discontinued material

Evaluation

Quality, cost, availability, reliability, reproduction

Learning outcome
The learner will: 2. know how to restore items of traditional furniture upholstery
Assessment criteria
The learner can: 2.1 explain the importance of seeking client agreement when creating action plans 2.2 describe supplies needed for common upholstery **restoration** commissions 2.3 explain **specification** content for restoring traditional furniture 2.4 describe **record keeping** for dismantling furniture 2.5 explain how to **dismantle** furniture during upholstery restoration 2.6 explain the diverse nature of **materials** in upholstery 2.7 describe **measures** to avoid further damage 2.8 describe **repairs** during upholstery restoration 2.9 describe reassembly methods 2.10 explain uses of **tools and equipment** during upholstery restoration 2.11 explain **professional approaches** to delivering restoration results 2.12 describe **client characteristics** 2.13 describe **safe working practice.**

Range
Restoration Traditional, antique, rarity, value **Specification** Quality criteria to be met, budgetary limits, timescale for the work, materials required, techniques to be used **Record keeping** Referencing , photo log, timesheet, cost analysis against estimate, action plan **Dismantle** Sequence, referencing **Materials** Natural, man-made, synthetic **Measures** Infestations, conservation, aftercare advice **Repairs** Frame repairs, replicating, cleaning, re-fill, replace, re-stitch **Tools and equipment** Needles, hammer, tacks, twine, spring twine, web strainer

Professional approaches

Sympathetic, knowledgeable, offering options, solution driven, keeping client updated

Client characteristics

Private, corporate (gallery, period drama), antique dealer

Safe working practice

PPE, legal requirements, Health and Safety at work act (HASAWA), control of substances hazardous to health (COSHH), Risk assessments

Learning outcome
The learner will: 3. be able to restore items of traditional furniture upholstery
Assessment criteria
The learner can: 3.1 identify sources of information 3.2 communicate with clients to understand specifications 3.3 research items of traditional furniture upholstery 3.4 develop understanding of original techniques and materials used 3.5 create restoration action plans 3.6 carry out restoration to items of traditional furniture upholstery 3.7 record restoration information.

Unit 318 Site survey for furniture installation

UAN:	**K/503/2203**
Level:	Level 3
Credit value:	11
GLH:	89
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	This unit introduces learners to the importance of communicating effectively during site surveys with key personnel. The unit explores data and recording methods, taking measurements and interpreting findings into surveys. The unit looks at industry standard construction floor plan symbols and covers key health and safety for site work.

Learning outcome
The learner will: 1. know how to communicate during a site survey for furniture installation
Assessment criteria
The learner can: 1.1 describe **characteristics** of good customer service 1.2 describe effective **negotiation techniques** 1.3 identify **key personnel** on site 1.4 explain the importance of clarifying the role **site surveys** to key personnel 1.5 describe **data** required from the site survey.

Range
Characteristics Deliver on promises, keeping the customer updated, exceeding expectations, listen to customers, respond to complaints, be helpful at all times, well trained staff, tailor services to the individual, knowing and understanding customer requirements, flexibility, leadership, task orientation, strong work ethic **Negotiation techniques** Preparation, sensitivity, listening skills, compromise, commitment, principles, confirmation of agreement

Key personnel

Designer, client, fitter, site manger, colleagues

.

Site survey

Carcasses, frameworks, assembled units, shutters, blinds, window treatments, upholstered items, polished items

Data

Electrical, water, gas, ventilation, communication wires, backgrounds, dimensions, plumb level, square, hazardous substances

Learning outcome

The learner will:

2. know how to survey a location

Assessment criteria

The learner can:

2.1 describe **tools and equipment** used during site surveys
2.2 describe how to care for measuring tools and equipment
2.3 describe **formats** of recording data
2.4 state **features** of locations that determine critical points of measurements
2.5 describe how **background** affects the points of measurement
2.6 describe how to determine the type of background
2.7 state industry standard construction **architectural symbols**
2.8 explain the importance of recording background condition
2.9 describe **characteristics** of location that may affect installations
2.10 explain why recording locations of services are relevant to a site survey
2.11 describe the importance of quality checks
2.12 identify **safe working practice** during site surveys
2.13 describe health and safety information that may affect an installation.

Range

Tools and equipment

Measuring tapes/rules/ sticks, electronic devices, stud/metal detectors, sprit level, laser level, plumb line

Format

Measurement recording systems, drawings, specification, site plans, paperwork, customer requirements, millimetres, metres, verbal, written, pictorial, electronic, plan-view, perspective

Features

Level, square, true, plumb

Background

Brick, concrete, wood, steel, plasterboard and cavity

Architectural symbols
Wall construction, windows, doors, electrical, water, gas, ventilation, heating

Characteristics
Site security, access, storage, deliveries

Safe working practice
PPE, legal requirements, Approved Code of Practice (ACOP), Health and Safety At Work Act (HASAWA), Control of Substances Hazardous to Health (COSHH), Risk Assessments, Site requirements

Learning outcome
The learner will: 3. be able to survey a location
Assessment criteria
The learner can: 3.1 select measuring tools and equipment 3.2 demonstrate how data is recorded 3.3 complete site surveys 3.4 record industry standard construction **architectural symbols** to industry practice 3.5 demonstrate quality checking measures.

Range
Architectural symbols Wall construction, windows, doors, electrical, water, gas, ventilation, heating

Unit 319 Supervision in a furniture and furnishing making environment

UAN:	**F/503/2191**
Level:	Level 3
Credit value:	10
GLH:	80
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	This unit explores supervising in a furniture and furnishing making environment, giving candidates the tools to successfully performance manage team members and to supervise and run operations. The unit looks at leadership styles, communication techniques and ways to motivate staff. The unit also looks at stock control and scheduling workloads. The unit reinforces previous health and safety knowledge and builds upon this in a supervisory context.

Learning outcome
The learner will: 1. understand how to mentor staff in a furniture and furnishing making environment
Assessment criteria
The learner can: 1.1 describe **styles** of leadership 1.2 describe **factors** which contribute to good working relationships 1.3 describe **how** colleagues can assist one another 1.4 describe how to check understanding of information provided to staff 1.5 describe the importance of providing effective **advice** 1.6 explain the **importance** of teamwork 1.7 explain how to recognise **individual team member's strengths** 1.8 describe how to identify training needs 1.9 describe how to create training matrices 1.10 describe **supervisory responsibilities** 1.11 describe **methods** of encouraging team members 1.12 describe **difficulties** that may arise when supervising staff.

Range
Styles Autocratic, democratic, delegative **Factors** Positive behaviour, quick and effective response to feedback, patience, sense of humour, pleasant manner, self organisation, eye contact, respect for self and others and a willingness to co-operate, positive leadership skills **How** Advice, assistance, support, constructive feedback, sharing experience and ideas **Advice** Accurate, current and meets health and safety requirements **Importance** Portray organisation in a positive way, effective and efficient delivery of services for customers and staff, safety, staff morale, encourages loyalty, improves performance, achieving targets **Individual team member's strengths** 1:1s, observation, discussion **Supervisory responsibilities** Machines, personnel, materials **Methods** Praise, support, guidance **Difficulties** Conflict, poor performance, resource shortages

Learning outcome
The learner will: 2. understand how to supervise operations in a furniture and furnishing making environment
Assessment criteria
The learner can: 2.1 describe how to schedule workloads for team 2.2 describe the importance of involving team members in planning team objectives 2.3 describe **production planning methods** 2.4 describe how to monitor effectiveness of operations 2.5 describe methods of supporting team members in identifying problems 2.6 identify **stock control methods** 2.7 identify opportunities for **changes** to manufacturing operations 2.8 describe health and safety responsibilities 2.9 describe how to resolve health and safety issues.

Range
Production planning methods Bespoke, batch, mass-production, just in time (JIT), cell production, material process steering (MPS), material resource planning (MRP) **Stock control methods** KAIBAN, TPS, bin card, work-in-progress **Changes** New manufacturing requirements, adaptations to equipment or processes, new materials

Unit 320 Supervision of fitted furniture installation

UAN:	**M/503/2204**
Level:	Level 3
Credit value:	7
GLH:	51
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The unit explores communication and customer service skills to support learners to meet client requirements. The unit also covers key health and safety responsibilities required during supervision. Learners will learn how to liaise with external contractors to ensure to ensure effective coordination of installation. This unit requires learners to schedule installations; explore supervising responsibilities and quality check an installation during and on completion. Learners will look at the outcomes that make a quality installation and the documentation that could be used to record faults and taking corrective action. It is envisaged that learners that complete this unit are experienced installers as this is a supervisory unit that builds upon that knowledge and experience. The unit will support learners who specialise in fitting furniture and furnishings including window treatments.

Learning outcome
The learner will: 1. understand how to liaise with external contractors in fitted furniture installation
Assessment criteria
The learner can: 1.1 explain how to **communicate effectively** 1.2 describe effective **negotiation techniques** 1.3 describe **behaviour** that supports working onsite 1.4 identify **external contractors** required to meet client requirements 1.5 explain **effective coordination** of external contractors.

Range
Communicate effectively Eye contact, friendliness, body language, tone, communication, responding to language barriers **Negotiation techniques** Preparation, sensitivity, listening skills, compromise, commitment, principles, confirmation of agreement **Behaviour** Deliver on promises, keeping the customer updated, exceeding expectations, listen to customers, respond to complaints, be helpful at all times, tailor services to the individual, knowing and understanding customer requirements, flexibility, strong work ethic **External contractors** Electrician, gas, plumber, ventilation, decorator, refrigeration, window fitters, designers, polishers, installers, project manager **Effective coordination** Communication, scheduling, Gantt charts, project plans, process plans, cost effective use of contractor time

Learning outcome
The learner will: 2. know supervisory responsibilities for fitted furniture installation
Assessment criteria
The learner can: 2.1 describe **supervisory responsibilities** 2.2 describe **difficulties** that may arise when supervising fitted furniture installation 2.3 identify **key personnel** required to communicate with during installation 2.4 explain how to schedule workloads for installers 2.5 describe **health and safety responsibilities** 2.6 explain how to resolve health and safety issues 2.7 explain how to **monitor** fitted furniture installation 2.8 describe **formats** for recording data to support the installation process 2.9 explain the importance of quality checks on fittings prior to installation 2.10 describe **quality check evaluations** during installation 2.11 describe **outcome qualities** from furniture installation 2.12 describe **faults** in installation 2.13 explain **responsibilities** for rectifying faults in installation.

Range
Supervisory responsibilities Monitor fitted furniture installation, liaise with external contractors, liaise with clients, quality check, liaise with suppliers **Difficulties** Conflict (suppliers, external contractors, clients), poor performance of fitted furniture staff, resource shortages **Key personnel** External contractors, suppliers, clients, staff, designers **Health and safety responsibilities** Industry/sector specific legislation, regulations, guidelines, code of practice relating to carrying out work, for self and others, risk assessments **Monitor** Regular updates, visual checks, communicating with client, external contractors and installers **Formats** Measurement recording systems, drawings, specification, site plans, paperwork, client requirements, millimetres, metres, verbal, written, pictorial, electronic, plan-view, perspective, schedule **Quality check evaluations** Visual, touch, square, level, meets client specification, quality control form, signing off sheet, time sheet, customer satisfaction form, snagging list **Outcome qualities** Specifications, client requirements, realisation, performance, function, organisation, customer, location, dimensions, construction, finishing, quality of placement, time schedule met **Faults** Material, tools, equipment, components, services, appliances, location, fittings, fixings **Responsibilities** Recognise, rectify, record, replace

Learning outcome
The learner will: 3. be able to supervise fitted furniture installation
Assessment criteria
The learner can: 3.1 liaise with key personnel 3.2 schedule workload for installation 3.3 carry out supervision of furniture installation 3.4 complete **quality check evaluations** 3.5 rectify faults in installation 3.6 demonstrate how data is recorded.

Range
Quality check evaluations Customer satisfaction form, snagging list

Unit 321 Traditional mattress manufacture

UAN:	**F/503/2207**
Level:	Level 3
Credit value:	11
GLH:	105
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to provide the learner with the knowledge and skills to prepare and produce traditional mattresses. The learner is required to conduct historical research to understand traditional techniques and materials. The skills covered by this unit include: preparing the mattress assembly, application of suspensions and filling materials to form the shape, positioning and securing top covers, tufting/finishing, tape edging. It is envisaged that learners that complete this unit are experienced in mattress making as this is a specialised unit that builds upon that knowledge.

Learning outcome
The learner will: 1. understand the history of traditional mattress production
Assessment criteria
The learner can: 1.1 identify materials used in different **historical periods** 1.2 explain the importance of understanding traditional mattress **production techniques** 1.3 explain the importance of understanding **uses** of traditional materials 1.4 describe **traditional techniques** for mattress production that are still in use today 1.5 describe **traditional materials** for mattress production that are still in use today 1.6 explain market demand for traditional mattress production.

Range
Historical periods 16th Century to 20th Century **Production techniques** Performance, construction (wooden frame), design, application sequence, foundations **Uses** Fillings, suspension systems, supports, foundations **Traditional techniques** Firm edge, sprung units, hand stitching, hand tufting, foundations, tape edging **Traditional materials** Lambs wool, organic wool, cotton felt, cashmere, mohair, silk, hand teased hair, long stranded hair pad, wool felt, polyester fibre, waxed cambric, hessian, coir fibre, coco lock fibre, pocketed springs, panels, thread

Learning outcome
The learner will: 2. understand how to prepare traditional mattresses for assembly
Assessment criteria
The learner can: 2.1 describe the purpose of technical specifications 2.2 list **terms** used in technical specifications 2.3 explain handling characteristics of **support materials** 2.4 explain purposes of different support materials 2.5 describe **methods** used in mattress production 2.6 describe sequences for building foundations 2.7 describe functions of different **tools and equipment** used in mattress preparation 2.8 describe **faults** that may occur during mattress preparation 2.9 identify **safe working practice** when using materials in mattress preparation.

Range
Terms Material, quality to be achieved, tolerance, dimensions, visual appearance, filling type, item type **Support materials** Lambs wool, organic wool, cotton felt, cashmere, mohair, silk, hand teased hair, long stranded hair pad, wool felt, polyester fibre, waxed cambric, hessian, coir fibre, coco lock fibre, pocketed springs, panels, thread **Methods** Building foundation, securing foundation (side blind top or roll stitching)

Tools and equipment
Packing needle, stitching needle, thread, tufting needle, regulator
Faults
Tools and equipment, quality, application, positioning, tape edging

Safe working practice
PPE, legal requirements, Approved Code of Practice (ACOP), Health and Safety At Work Act (HASAWA), Control of Substances Hazardous to Health (COSHH), Risk Assessments

Learning outcome
The learner will: 3. understand how to produce traditional mattresses
Assessment criteria
The learner can: 3.1 describe handling characteristics of **finishing materials** 3.2 describe sequences for assembling mattresses by hand 3.3 describe **methods** for hand finishing mattresses 3.4 describe **faults** that may occur during assembly processes 3.5 describe the importance of minimising waste 3.6 describe **processes** for dealing with problems 3.7 describe **quality checking measures**.

Range
Finishing materials Damask tick, twine and hand fitted woollen tufts, thread, tape edging, filler cord **Methods** Mattress positioning, vertical application, alignment, tape edging, hand stitching, hand tufting **Faults** Material defects, colour/pattern mismatching, non functional equipment, tensioning, shape, size, stitching errors, broken thread, broken needle **Processes** Reject, replace, rectify, report, work around material defects **Quality checking measures** Visual, measurement

Learning outcome
The learner will: 4. be able to produce traditional mattresses
Assessment criteria
The learner can: 4.1 carry out historical research on traditional mattress production 4.2 maintain a tidy work area 4.3 organise tools, equipment and materials 4.4 carry out building mattress foundations by hand 4.5 produce traditional mattresses 4.6 carry out quality checks.

Unit 322 Workflow management in woodmachining

UAN:	**F/503/2210**
Level:	Level 3
Credit value:	11
GLH:	85
Endorsement by a sector or other appropriate body:	This unit is endorsed by ProSkills.
Aim:	The aim of this unit is to develop the knowledge, understanding and skills, required to manage the workflow of wood-based components through the manufacturing process within the woodworking sector. This involves the smooth 'workflow' of the raw material in the production of wood-based components. The management and supervision of people involved in production and recognised manufacturing systems.

Learning outcome
The learner will: 1. understand how to plan the workflow of wood-based materials in the production of wood-based components
Assessment criteria
The learner can: 1.1 describe **sources of information** used to plan the workflow of wood-based components through the manufacturing process 1.2 outline the types of **payment systems** on production planning and its effect on production 1.3 describe the main elements of a **cost sheet** 1.4 describe the methods used to prepare **estimates** 1.5 describe **arithmetical processes** to work out measurements, time scales and costs 1.6 describe the **factors** governing the planning of production in the machine shop 1.7 describe the various **production systems** 1.8 outline the advantages and disadvantages of just in time production 1.9 describe methods of **storage** 1.10 describe **office procedures** with regard to information handling and storage.

Range
Sources of information Specifications, risk assessments, manufacturers' information, cutting lists, job sheets, time sheets, reports **Payment systems** One off payment, stage payments, timework, piecework, payment by results (PBR) measured day work (MDW) **Cost sheet** Labour, materials, operating costs, direct and indirect costs **Estimates** Estimating from:- historical data, specifications, schedules, material supply, allowances for internal and external factors, methods of revision, correction and up-dating **Arithmetical processes** Applied to unit costing, calculations for the economical use of materials and time **Factors** Man power, skill levels, processes, machinery and equipment, resources, time scales, allied trades and industries **Production systems** One off unit production, batch unit production, mass unit production **Storage** Wood-based materials, tooling, grinding wheels, sanding belts, jigs and saddles, stacking components **Office procedures** Jobs in progress - trays on a desk, filing of documents – filing cabinets, clipboards - job sheets notice board – visual progress charts, shelves – trade catalogues, binders, messages and internal post – pigeon holes, drawings – plan chest, forms – drawers, confidential reports – locked drawer or cupboard

Learning outcome
The learner will: 2. understand the movement through a workshop of wood-based materials in the production of wood-based components
Assessment criteria
The learner can: 2.1 state the factors that influence the layout of a workshop to facilitate the workflow of wood-based materials through the production process 2.2 explain principles of **materials handling**

2.3	identify the types of **handling devices**
2.4	describe the factors affecting the workload of departments on the **input and output** of wood-based materials and wood-based components
2.5	describe how planned preventive maintenance can reduce machine down time
2.6	explain the importance of **maintenance schedules** with regards to workflow management
2.7	outline the various means used for waste extraction and disposal
2.8	describe the benefits of good housekeeping on the workflow of productivity
2.9	describe the **legal requirements** for safety in workshops and explain how to implement them into the workflow management process.

Range

Materials handling

Movement through the workshop of:- raw material, finished product, components and work in progress, sub assemblies, job cards/sheets and other systems of paper work

Handling devices

Trolleys, hand operated trucks, power operated trucks, slides, conveyors, vacuum holding

Input and output

Input cycles, machining cycles, output dispersal, either serving or serviced by the machine shop, prioritising workload

Maintenance schedules

Visual inspection, routine maintenance, lubrication schedule, servicing schedule timetable

Legal requirements

Health and Safety at Work Act (HASWA), Provision and Use of Work Equipment Regs (PUWER), Manual Handling Operations Regs, Control of Substances Hazardous to Health Regs (COSHH), Control of Noise at Work Regs, Electricity at Work Regs, Personal Protective Equipment Regs (PPE) and related Approved Codes of Practice (ACOP)

Learning outcome
The learner will: 3. understand the impact of working relationships and production techniques on workflow
Assessment criteria
The learner can: 3.1 describe the relationship between **work study** techniques and production planning 3.2 describe job roles and responsibilities in **organisations** within the woodworking sector 3.3 describe the importance of maintaining good relationships between trades and industries allied to the wood machining industry 3.4 outline legislation that relates to **working conditions and industrial relations**.

Range
Work study Time and motion, human factors, critical analyses and new method development, principles of work measurement **Organisations** Small, medium, large **Working conditions and industrial relations** HASAW, employment legislation Contracts, terms and conditions, sickness , grievance procedures

Appendix 1 Relationships to other qualifications

Literacy, language, numeracy and ICT skills development

These qualifications can develop skills that can be used in the following qualifications:

- Functional Skills (England) – see **www.cityandguilds.com/functionalskills**
- Essential Skills (Northern Ireland) – see **www.cityandguilds.com/essentialskillsni**
- Essential Skills Wales – see **www.cityandguilds.com/esw**.

Appendix 2 Sources of general information

The following documents contain essential information for centres delivering City & Guilds qualifications. They should be referred to in conjunction with this handbook. To download the documents and to find other useful documents, go to the **Centres and Training Providers homepage** on **www.cityandguilds.com**.

Centre Manual - Supporting Customer Excellence contains detailed information about the processes which must be followed and requirements which must be met for a centre to achieve 'approved centre' status, or to offer a particular qualification, as well as updates and good practice exemplars for City & Guilds assessment and policy issues. Specifically, the document includes sections on:

- The centre and qualification approval process
- Assessment, internal quality assurance and examination roles at the centre
- Registration and certification of candidates
- Non-compliance
- Complaints and appeals
- Equal opportunities
- Data protection
- Management systems
- Maintaining records
- Assessment
- Internal quality assurance
- External quality assurance.

Our Quality Assurance Requirements encompasses all of the relevant requirements of key regulatory documents such as:

- SQA Awarding Body Criteria (2007)
- NVQ Code of Practice (2006)

and sets out the criteria that centres should adhere to pre and post centre and qualification approval.

Access to Assessment & Qualifications provides full details of the arrangements that may be made to facilitate access to assessments and qualifications for candidates who are eligible for adjustments in assessment.

The **centre homepage** section of the City & Guilds website also contains useful information such on such things as:

- **Walled Garden:** how to register and certificate candidates on line
- **Events**: dates and information on the latest Centre events
- **Online assessment**: how to register for e-assessments.

Useful contacts

UK learners **General qualification information**	**T: +44 (0)844 543 0033** **E: learnersupport@cityandguilds.com**
International learners General qualification information	T: +44 (0)844 543 0033 F: +44 (0)20 7294 2413 E: **intcg@cityandguilds.com**
Centres Exam entries, Certificates, Registrations/enrolment, Invoices, Missing or late exam materials, Nominal roll reports, Results	T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413 E: **centresupport@cityandguilds.com**
Single subject qualifications Exam entries, Results, Certification, Missing or late exam materials, Incorrect exam papers, Forms request (BB, results entry), Exam date and time change	T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413 F: +44 (0)20 7294 2404 (BB forms) E: **singlesubjects@cityandguilds.com**
International awards Results, Entries, Enrolments, Invoices, Missing or late exam materials, Nominal roll reports	T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413 E: **intops@cityandguilds.com**
Walled Garden Re-issue of password or username, Technical problems, Entries, Results, e-assessments, Navigation, User/menu option, Problems	T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413 E: **walledgarden@cityandguilds.com**
Employer Employer solutions, Mapping, Accreditation, Development Skills, Consultancy	T: +44 (0)121 503 8993 E: **business@cityandguilds.com**
Publications Logbooks, Centre documents, Forms, Free literature	T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413

About City & Guilds

As the UK's leading vocational education organisation, City & Guilds is leading the talent revolution by inspiring people to unlock their potential and develop their skills. We offer over 500 qualifications across 28 industries through 8500 centres worldwide and award around two million certificates every year. City & Guilds is recognised and respected by employers across the world as a sign of quality and exceptional training.

City & Guilds Group

The City & Guilds Group operates from three major hubs: London (servicing Europe, the Caribbean and Americas), Johannesburg (servicing Africa), and Singapore (servicing Asia, Australia and New Zealand). The Group also includes the Institute of Leadership & Management (management and leadership qualifications), City & Guilds Land Based Services (land-based qualifications), the Centre for Skills Development (CSD works to improve the policy and practice of vocational education and training worldwide) and Learning Assistant (an online e-portfolio).

Published by City & Guilds, a registered charity established to promote education and training

City & Guilds
5-6 Giltspur Street
London UK EC1A 9DD
T +44 (0)844 543 0000
F +44 (0)20 7294 2413
www.cityandguilds.com

HB-03-5780