Unit 307: Manufacture curved joinery

Sample scheme of work

Please revise the following text to suit your requirements.

This sample scheme of work covers both classroom and workshop based learning for Unit 307. It is based on three hour sessions each having a 15 minute break half way through the session. The unit has 16 theory lessons covering manufacturing curved joinery, with a further theory/practical session concentrating on risk assessments. These are followed by 32 practical sessions enabling the learner's time to practice activities involved with manufacturing curved joinery. The unit is completed with a theory session enabling the learners to undertake a team test activity and the end of unit test. Within the practical activities there is scope to challenge and stretch learners.

This is an example only of a possible scheme of work and is based on theory and practical within an FE centre delivering the Level 3 Advanced Technical Diploma in Architectural Joinery. Unit 307 is designed as a stand-alone unit and should be used in conjunction with the standards set for the qualification to ensure full coverage of the learning requirements.

You can use the sample scheme of work as it is, adjust it or extract content to create a scheme of work to suit your delivery needs. It can also be adjusted by adding theory and practical workshops to support learners who have/need additional learning time.

Reference is made within the scheme of work to learning materials and other resources required for each session. A version of this scheme of work with **full supporting materials** is also available to purchase on **SmartScreen.co.uk**. Resources consist of physical equipment required, as well as any technologies needed. Where possible we have included blended learning activities that make good use of technology so as to help centres fulfil the minimum amount of digital teaching recommended by government.

Centres should also incorporate the following themes, where appropriate, as strands running through each of the sections within the qualification. Although they are not specifically referred to in the section content section, City & Guilds regards these as essential in the teaching of the qualification:

- health and safety considerations, in particular the need to impress upon learners the fact that they must preserve the health and safety of others as well as themselves
- functional skills (mathematics, English and ICT)
- extension tasks and differentiation, inclusion, entitlement and equality issues
- spiritual, moral, social and cultural issues
- environmental education and related European issues
- British Values
- values and behaviours
- use of information learning technology (ILT)
- Learners to prepare a few brief notes in small group discussions on the possible implications of not following health and safety regulations.

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Unit 307: Manufacture curved joinery

Sample scheme of work

Course/qualification: _____ **Tutor's name**: _____

Number of sessions: 50 **Delivery hours**: 150 **Venue**: _____ **Group**: _____

Aims	**To enable learners to:**
Enable the learners to: • Understand how to prepare and set out curved joinery • Be able to mark out curved joinery • Be able to manufacture curved joinery	• Prepare and set out curved joinery using: — information sources — types of equipment — production details — producing jigs, templates and formers — use a range of machines and power tools. • Mark out curved joinery using: — tools and equipment — select and use materials. • Be able to manufacture curved joinery: — methods of forming curved components — manufacturing joinery components — assembly and finishing methods.

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Session	Objectives/learning outcomes **The learner will:**	Activities and resources	Assessment
Theory activities **Session 1** (3 hours)	**Learning outcome 1: Prepare and set out curved joinery** **Topic 1.1: Information sources** • Understand the various types of documentation used identifying client need, design elements and manufacturing design.	**Activities:** • Introduce unit and outline work programme for completion of unit • Tutor to outline the main types of information sources associated with curved joinery including the following: — environmental policy - national and local (sourcing of materials and disposal of waste) — safe systems of work — scale drawings – hand drawn and CAD — specifications of work — Building Regulations — detailed sizes and shapes, profiles of existing work ,images/ photographs, templates and profiles. • Learners to complete Activity 1 by marking the statements on information sources available for the manufacturing of curved joinery as either true or false • Learners must be able to interpret working drawing and double check details before work commences • Learners to complete Activity 2 by identifying the information sources that they would need to use in order to draw a detailed full size rod for an arched door and frame that is to go in an old barn **Resources:** • Activity 1: A set of statements about information sources for learners to marks as either true or false • Activity 2: Learners to identify the information sources that they would	• Observation • Q&A • Activities

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Session	Objectives/learning outcomes **The learner will:**	Activities and resources	Assessment
		need to use in order to draw a detailed full size rod for an arched door and frame that is to go in an old barn • Link to building regulations**:** http://www.planningportal.gov.uk/buildingregulations/	
Theory activities **Session 2** (3 hours)	**Learning outcome 1: Prepare and set out curved joinery** **1.3** • Describe methods used to set out curved doors and frames: — different types of shaped doors and frames — how to produce setting out for segmental and gothic arches	**Activities:** • Recap on previous session • Tutor to outline types of arches typically found that joinery items have to fit. • Learners to be able to interpret drawings and specifications and identify different designs used in shaped doors and frames • Learners to complete Activity 3 by answering the questions on circles and arch shapes • Learners to be able to produce setting out details for segmental arches and complete Activity 4 • Learners to be able to produce setting out details for gothic arches and complete Activity 5 • Small group discussions on the requirements of curved setting out, the equipment and principles as learnt from activities, followed by whole group discussion **Resources:** • Activity 3: Diagram of a circle with the following parts included for learners to label: a) circumference; b) arc; c) quadrant; d) normal; e) diameter; f) sector; g) chord; h) radius; i) segment; j) tangent • Activity 4: Learners to a) Label the parts of a diagram of a segmental arch; b) Show and calculate the mathematical formula for a	• Observation • Q&A • Activities

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Session	Objectives/learning outcomes **The learner will:**	Activities and resources	Assessment
		segmental arch with a rise of 50mm and span of 950mm; c) To a scale suitable, draw and describe the stages for producing a segmental arch • Activity 5: Learners to a) identify the three common types of Gothic arch; b) draw and describe to a suitable scale the method used to produce a dropped gothic arch; c) Draw and describe to a suitable scale how to produce a lancet arch • Drawing equipment	
Theory activities **Session 3** (3 hours)	**Learning outcome 1: Prepare and set out curved joinery** **Topic 1.3: Production details** • Describe methods used to set out curved doors and frames: — different types of shaped doors and frames — how to produce setting out for semi-circular and elliptical and three centred arches	**Activities:** • Recap on previous session • Tutor to outline types of arches found in joinery items • Learners to be able to produce setting out details for semi-circular arches and complete Activity 6 • Learners to be able to produce setting out details for elliptical arches and complete Activity 7 • Small group discussions on the requirements of curved setting out, the equipment and principles as learnt from activities, followed by whole group discussion **Resources:** • Activity 6: Learners to draw to a suitable scale a semi-circular arch and describe the stages • Activity 7: Learners to draw to a suitable scale with descriptions of the method the pin and string method of producing an ellipse • Drawing equipment	• Observation • Q&A • Activities

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Session	Objectives/learning outcomes **The learner will:**	Activities and resources	Assessment
		• Video links to trammel jigs: – https://youtu.be/Hfw0yYur5S4 – https://youtu.be/O6sKeg-PaOU – https://youtu.be/KlJr1aqBXxA – https://youtu.be/-61bH15tJmw – https://youtu.be/NUR3LU2uE1c	
Theory activities **Session 4** **(3 hours)**	**Learning outcome 1: Prepare and set out curved joinery** **Topic 1.3: Production details** • Describe methods used to construct curved components for doors and frames: – Solid – Built up – laminated	**Activities:** • Recap on previous session • Tutor to outline how to select material and construct curved components including: – solid – built up – laminated. • Learners to complete Activity 8 on solid component construction • Learners to complete Activity 9 on built up component construction • Learners to complete Activity 10 on laminated component construction **Resources:** • Activity 8: Learners to a) identify three areas that should be taken into consideration when deciding upon which construction method to use for curved components; b) with the aid of sketches show how the grain show flow around a curved frame using solid construction with heading joints; c) with the aid of sketches identify how a solid curved	• Observation • Q&A • Activities

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Session	Objectives/learning outcomes **The learner will:**	Activities and resources	Assessment
		section is jointed using heading joints • Activity 9: Learners to a) describe the difference between solid and built-up construction methods used in curved construction; b) with the aid of sketches describe how the built-up construction method would look at the joint; c) state three advantages of using a built-up construction methods as opposed to solid construction methods • Activity 10: Learners to a) describe with the aid of sketches how laminated components are constructed when producing a curved door frame head; b) state 3 advantages and 3 disadvantages associated with laminated construction of curved components • Video link to laminating: https://youtu.be/H_WyI4PWrGE	
Theory activities **Session 5** **(3 hours)**	**Learning outcome 1: Prepare and set out curved joinery** **Topic 1.3: Production details** • Describe methods used to join curved to curved and curved to straight components for doors and frames: — Hammer head tenon — Loose tenons — Dovetail key — Bridle joint — Machine cut comb joint	**Activities:** • Recap on previous session • Tutor to outline different types of joints commonly used: — hammer head tenon — loose tenons — dovetail key — bridle joint — machine cut comb joint — draw bore and pin. • Learners to complete Activity 11 by identifying typical profiles to the top of shaped frames • Learners to complete Activity 12 by identifying hammer head tenon construction methods	• Observation • Q&A • Activities

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Session	Objectives/learning outcomes **The learner will:**	Activities and resources	Assessment
	— Draw bore and pin	• Learners to complete Activity 13 by identifying loose tenon construction methods **Resources:** • Activity 11: Learners to a) draw and label the following types of door: segmental, semi-circular, Gothic, Tudor; b) list three types of joint that can be used at the heading joint of a curved frame; c) identify the joint that is pulled together with small hardwood wedges; d) identify three advantages and three disadvantages of using hammer head joints • Activity 12: Learners to draw and label a hammer head detail where it will be used to join a straight section to a curved section • Activity 13: Draw and label a false/loose tenon joint to use at the junction of the meeting stiles and the curved head for a pair of elliptical doors	
Theory and practical activities **Session 6** (3 hours)	**Learning outcome 1: Prepare and set out curved joinery** **Topic 1.3: Production details** • Understand construction details used in joinery including — Curved headed frames — Bay windows	**Activities:** • Recap on previous session • Tutor to outline joinery item detailing for the following items of joinery: — curved headed frames — bay windows • Tutor to explain the purpose and use of the practical aims and objectives sheet • Learner to complete Activity 14 by setting out a semi-circular headed box sash window to the specification laid out **Resources:** • Activity 14: Learners to produce full sized setting out detailing for a	• Observation • Q&A • Activities

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Session	Objectives/learning outcomes **The learner will:**	Activities and resources	Assessment
		curved head traditional box sash window • Individual learning plans: for each session, learners should outline the objectives that they reasonably expect to complete in that session. As the sessions progress, feedback from the previous sessions will guide and focus their future learning aims and objectives • Box window setting specifications • Drawing equipment • Setting out board	
Practical activities **Sessions 7 and 8** (6 hours)	**Learning outcome 1: Prepare and set out curved joinery** **Topic 1.3: Production details** • Produce setting out for curved frames	**Activities:** • Recap on previous session • Using Activity 14 complete setting out of semi-circular headed box sash window and identify all component parts • Activity 14: Learners to produce full sized setting out detailing for a curved head traditional box sash window • Drawing equipment • Setting out board	• Observation • Q&A • Activities
Theory activities **Session 9** (3 hours)	**Learning outcome 1: Prepare and set out curved joinery** **Topic 1.4: Producing Jigs, templates and formers** • Understand how to select material and produce jigs and templates	**Activities:** • Recap on previous session • Tutor to outline jig and template design and construction methods • Learners to complete Activity 15 by identifying suitable jig construction designs and weaknesses • Using Activity 16 describe methods of producing curved jigs and templates	• Observation • Q&A • Activities

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Session	Objectives/learning outcomes **The learner will:**	Activities and resources	Assessment
		Resources: • Activity 15: Learners to explain how they would produce the full-sized curved templets from the setting out produced in Activity 14, considering all areas of the process including health and safety and any materials and tools required • Activity 16: With the aid of sketches, learners to show a jig that can be used in producing an ellipse, including the trammel arm, and identify the major and minor axis points along it • Video link to circular router jig: https://youtu.be/gLpEuqNn07Q • Video links to elliptical jigs: — https://youtu.be/gLpEuqNn07Q — https://youtu.be/Hfw0yYur5S4 — https://youtu.be/NUR3LU2uE1c — https://youtu.be/KlJr1aqBXxA — https://youtu.be/O6sKeg-PaOU — https://youtu.be/-61bH15tJmw	
Theory activities **Session 10** (3 hours)	**Learning outcome 1: Prepare and set out curved joinery** **Topic 1.5: Use a range of machines and power tools** • Understand the legislation relating to the safe use of woodworking machinery	**Activities:** • Recap on previous session • Tutor to outline the main safety aspects associated with woodworking machinery: — Legislation — Machine specific safety aspects — General safety aspects	• Observation • Q&A • Activities

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Session	Objectives/learning outcomes **The learner will:**	Activities and resources	Assessment
		• Learners to complete Activity 17 by marking the statements on legislation as either true or false • In small groups Identify the main machine specific safety aspects of using woodworking machinery and complete Activity 18 on machine safety aspects **Resources:** • Activity 17: A set of statements about legislation covering woodworking machinery for learners to marks as either true or false • Activity 18: Learners to a) list five machine-specific safety aspects that should be considered; b) identify three pieces of information found in the manufacturers manual c) give three reasons why maintenance should be carried out d) identify three areas that training must cover; e) briefly outline three actions that need to be taken when noise levels exceed 80 db(A); f) list three considerations employers must make when conducting risk assessments • Copy of ACoP for Provision and Use of Work Equipment Regulations 1998 as applied to woodworking machinery: http://www.hse.gov.uk/pubns/priced/l114.pdf • Example safe working practice in controlling wood dust: — http://www.hse.gov.uk/woodworking/videos/wood-dust-exposure.mp4 — http://www.hse.gov.uk/pubns/wis23.pdf • Link to noise loss video: http://www.hse.gov.uk/noise/video/hearingvideo.htm • Link to retro fitting breaking devices:	

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Session	Objectives/learning outcomes **The learner will:**	Activities and resources	Assessment
		http://www.hse.gov.uk/pubns/wis38.pdf • Link to tooling: http://www.hse.gov.uk/woodworking/tooling.htm	
Theory activities **Session 11** (3 hours)	**Learning outcome 1: Prepare and set out curved joinery** **Topic 1.5: Use a range of machines and power tools** • Discuss and outline requirements of inspection, reporting and maintenance for woodworking machinery.	**Activities:** • Recap on previous session • Tutor to outline the main safety aspects associated with: — Inspection — Fault diagnosis — Fault reporting — Maintenance • Learners to complete Activity 19 by answering the questions on maintenance • Learners to complete Activity 20 in small groups by following the steps below to produce a maintenance log sheet: — Step 1: Identify the typical areas that would require maintenance on fixed and transportable machinery — Step 2: Make a suitable maintenance log sheet listing each of the areas identified in task 1 — Step 3: On completion, present it to the rest of the group. The maintenance log sheet will be used later in the course when carrying out machine maintenance in the workshop • In small groups, learners to discuss maintenance plans and complete Activity 21	• Observation • Q&A • Activities

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Session	Objectives/learning outcomes **The learner will:**	Activities and resources	Assessment
		Resources: • Activity 19: Activity 17: A set of statements about maintenance of woodworking machinery for learners to marks as either true or false • Activity 20: Learners to produce a maintenance log sheet. To help the learners, have available a copy of a manufacturers information book for at least one machine in your establishment along with a copy of a hazard data sheet for one of the lubricants to be used. This information will be used as an aid-memoir for the learners, it is not expected all the learners will produce the same format for the log book. The finished log sheet will be used in the practical activities covering maintenance. Furthermore the same principle could be adopted to enable log books for reporting faults and inspection processes. • Activity 21: Learners to answer questions on how The Provision and Use of Work Equipment Regulations (PUWER) affect the safe use of woodworking machines	
Theory activities **Session 12** (3 hours)	**Learning outcome 1: Prepare and set out curved joinery** **Topic 1.5: Use a range of machines and power tools** • Carry out risk assessment for inspecting and maintaining fixed and transportable machinery	**Activities:** • Learners to produce a risk assessment for inspecting and maintaining fixed and transportable machinery • Learners to complete Activity 22 by answering the questions on risk assessment • In small groups discuss risk assessment forms and complete Activity 23 by producing a standard risk assessment form	• Observation • Q&A • Activities

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Session	Objectives/learning outcomes **The learner will:**	Activities and resources	Assessment
		Resources: • Activity 22: Learners to a) outline the aims of risk assessments; b) identify the key stages to a risk assessment; c) give definitions of the terms 'hazard' and 'risk'; d) list three examples of hazards found while maintaining fixed and transportable machinery • Activity 23: Learners to produce a standard risk assessment form in readiness to be used in maintaining the woodworking machines • Link to 5 steps to risk assessment: http://www.hse.gov.uk/pubns/indg163.pdf • Link to sample blank risk assessment form: http://www.hse.gov.uk/risk/safety-policy-risk-assessment-template.odt • Example safe working practice in controlling wood dust: http://www.hse.gov.uk/pubns/wis23.pdf • Video on wood dust: http://www.hse.gov.uk/woodworking/videos/wood-dust-exposure.mp4 • Link to model risk assessment for workshop: http://www.hse.gov.uk/risk/casestudies/pdf/woodworking.pdf • Link to noise loss video: http://www.hse.gov.uk/noise/video/hearingvideo.htm	
Theory activities **Session 13** **(3 hours)**	**Learning outcome 1: Prepare and set out curved joinery** **Topic 1.5: Use a range of**	**Activities:** • Recap on previous session • Tutor to outline how to select and safely set up sawing machinery to carry out:	• Observation • Q&A • Activities

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Session	Objectives/learning outcomes **The learner will:**	Activities and resources	Assessment
	machines and power tools • Understand how to select and safely set up sawing machines – Circular rip saw – Dimension saw – Crosscut saw	– Ripping softwood to width and thickness – Manufactured board cut to given dimensions – Tapered firings/wedges – Arris rail/glue blocks • Learners to complete Activity 24 by identifying component parts of circular rip saw bench • Learners to complete Activity 25 by identifying component parts of crosscut saw bench • Learners to complete Activity 26 by sketching and labelling rip saw and crosscut saw teeth **Resources:** Activity 24: Drawing of a rip saw bench for learners to identify the following components: a) crown guard; b) push stick; c) extraction pipe; d) guards for belts and pulleys; e) stop/start controls; f) extension table; g) isolator; h) blade rise and fall; i) rip fence; j) riving knife; k) groove for fence Activity 25: Drawing of a crosscut saw bench for learners to identify the following components: a) saw guard; b) swivel head lock; c) stop/start control; d) extraction point; e) radial arm; f) no hands area; g) saw blade with swinging guard; h) adjustable nose guard; i) saw housing with extraction; j) emergency stop Activity 26: Learners to sketch teeth suitable for ripping down the grain and cutting across the grain of timber and label the major parts	

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Session	Objectives/learning outcomes **The learner will:**	Activities and resources	Assessment
Theory activities **Session 14** **(3 hours)**	**Learning outcome 1: Prepare and set out curved joinery** **Topic 1.5: Use a range of machines and power tools** • Understand how to select and safely set up sawing machines – Circular rip saw – Dimension saw – Crosscut saw	**Activities:** • Tutor to outline how to set up and use: – circular rip saw/dimension saw – crosscut saw • To safely produce timber and timber based products including: – Ripping softwood to width and thickness – Ripping manufactured board cut to given dimensions – Producing tapered firings/wedges – Producing arris rail/glue blocks – Crosscutting long lengths of material – Crosscutting short lengths of material • Learners to complete Activity 27 by identifying how to set up and use rip saws • Learners to complete Activity 28 by identifying how to use push sticks safety • Learners to complete Activity 29 by identifying how to offer materials safely for cutting operations • Learners to complete Activity 30 by identifying safe operational procedures for crosscut saws **Resources:** • Activity 27: Learners to a) identify three ways a circular saw should be guarded; b) name the four basic conditions for circular saw guards to work effectively; c) sketch the position of the crown guard in	• Observation • Q&A • Activities

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Session	Objectives/learning outcomes **The learner will:**	Activities and resources	Assessment
		relationship to the material being cut and name the major components • Activity 28: Learners to a) sketch and label the correct position of the riving knife for saw blades of less than 600mm; b) sketch and label the correct position of the riving knife for saw blades of more than 600mm • Activity 29: Learners to: a) name four defects commonly found in timber; b) sketch and label the correct position for feeding cupped material through the rip saw when flatting; c) sketch and label the correct position for feeding material that is bowed through the rip saw when flatting; d) sketch and label the correct position for feeding material that is springing through the rip saw • Activity 30: Learners to: a) with the aid of sketches, identify how you would position material that is sprung and bowed on the crosscut saw; b) describe how you would position your hands and guard before starting to cut material on a crosscut saw and why; c) identify with the aid of sketches how you would cut short lengths on the crosscut saw; d) describe what additional safety aid should be used when crosscutting long lengths of timber and why • Video link to using rip saws: http://www.hse.gov.uk/woodworking/ripsaw.htm • Video link to crosscut saws: http://www.hse.gov.uk/woodworking/crosscut.htm • Link to circular saw poster: http://www.hse.gov.uk/pubns/circular-saw.pdf • Link to circular saw guidance sheet: http://www.hse.gov.uk/pubns/wis16.pdf	

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Session	Objectives/learning outcomes **The learner will:**	Activities and resources	Assessment
		• Link to crosscut guidance sheet: http://www.hse.gov.uk/pubns/wis36.pdf • Link to braking devices: http://www.hse.gov.uk/pubns/wis38.pdf • Link to powered crosscut: http://www.hse.gov.uk/pubns/wis35.pdf	
Theory activities **Session 15** (3 hours)	**Learning outcome 1: Prepare and set out curved joinery** **Topic 1.5: Use a range of machines and power tools** • Understand how to select and safely set up sawing machines – Narrow bandsaw – Hollow chisel morticer	**Activities:** • Recap on previous session • Tutor to outline how to set up and use narrow bandsaw • Learners to complete Activity 31 by identifying how to set up and use narrow bandsaws to produce components • Learners to complete Activity 32 by describing the correct procedure for changing a narrow bandsaw blade and setting up the machine ready for cutting operations • Tutor to outline how to set up and use hollow chisel morticer • Learners to complete Activity 33 by describing the correct procedure for changing a 10mm hollow chisel set ready for cutting • Learners to complete Activity 34 by identifying faults with hollow chisel morticer **Resources:** • Activity 31: Learners to a) state three considerations to be taken into account when selecting a blade for a narrow bandsaw; b) with the aid of sketches, state the correct positioning of the guide assembly in relation to the saw blade • Activity 32: Learners to list the considerations to be taken into account as part of the risk assessment process when replacing a	• Observation • Q&A • Activities

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Session	Objectives/learning outcomes **The learner will:**	Activities and resources	Assessment
		narrow bandsaw blade • Activity 33: Learners to list the considerations to be taken into account as part of the risk assessment process when replacing a hollow mortice chisel • Activity 34: Learners to state a possible reason for the following faults found with hollow mortice chisels and suggest a possible remedy for each one: a) mortice is not at right angle to the fence; b) the bottom of the chisel set leaves the corners of the chisel producing an uneven bottom to the mortice; c) the chisel shows signs of burning; d) the chisel develops a crack; d) the bottom of the auger has a broken wing • Video link to narrow bandsaws: http://www.hse.gov.uk/woodworking/bandsaw.htm • Link to narrow bandsaws: http://www.hse.gov.uk/pubns/wis31.pdf	
Theory activities **Session 16** (3 hours)	**Learning outcome 1: Prepare and set out curved joinery** **Topic 1.5: Use a range of machines and power tools** • Understand how to select and safely set up planing machines — Surface planer — Thicknesser — Combination planer	**Activities:** • Recap on previous session • Tutor to outline how to set up and use surface planer • Learners to complete Activity 35 by identifying components of a surface planer • Learners to complete Activity 36 by identifying the correct positioning of machine tables for facing and edging • Learners to complete Activity 37 by identifying the correct positioning of the bridge during planing operations **Resources:** • Activity 35: Drawing of a surface planer for learners to identify the following parts: a) fence check plate; b) fence, c) in-feed table; d) in-	• Observation • Q&A • Activities

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Session	Objectives/learning outcomes **The learner will:**	Activities and resources	Assessment
		feed rise and fall wheel; e) out-feed table; f) out-feed rise and fall wheel; g) table locks; h) start and stop switches; i) fence bar; j) bridge guard; k) depth of cut gauges; l) isolator • Activity 36: Learners to explain the correct positioning of the machine bed on a surface planer using sketches • Activity 37: Learners to draw the correct position of the bridge for the following uses: a) combined facing and edging on the surface planer; b) facing of thin wide boards; c) combined facing and edging of wide square material • Video link to surface planer: http://www.hse.gov.uk/woodworking/planer.htm • Link to surface planer: http://www.hse.gov.uk/pubns/wis17.pdf • Link to wood dust: http://www.hse.gov.uk/pubns/wis23.pdf	
Theory activities **Session 17** (3 hours)	**Learning outcome 1: Prepare and set out curved joinery** **Topic 1.5: Use a range of machines and power tools** • Understand how to select and safely set up planing machines — Thicknesser — Combination planer	**Activities:** • Recap on previous session • Tutor to outline how to set up and use: — thicknesser — combination planer • Learners to complete Activity 38 by identifying components of a thicknesser • Learners to complete Activity 39 by designing a suitable jig for producing tappers on the thicknesser **Resources:** • Activity 38: Diagram of a thicknesser for learners to identify the	• Observation • Q&A • Activities

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Session	Objectives/learning outcomes **The learner will:**	Activities and resources	Assessment
		following components: a) cutter block; b) out-feed pressure bar; c) in-feed roller; d) rise and fall table; e) in-feed chip breaker; f) out-feed roller • Activity 39: Learners to draw and label a suitable jig that could be used to produce a sample tapered baluster for use on a turning staircase in order to help a customer decide what type of finish to have on the balustrade • Link to wood dust: http://www.hse.gov.uk/pubns/wis23.pdf	
Theory and practical activities **Session 18** **(3 hours)**	**Learning outcome 1: Prepare and set out curved joinery** **Topic 1.5: Use a range of machines and power tools** • Understand how to carry out risk assessment for setting up and using – Sawing machines – Planing machines – Morticing machines	**Activities:** • Recap on previous session • Tutor to refresh learners' understanding of risk assessment, concentrating on the setting up and use of the following types of machines: – rip saws – crosscut saws – barrow bandsaws – planing machines – thicknessing machines – mortice machines. • Learners to complete Activity 40 by conducting a workshop survey of the machines intended to be used to complete this unit, identifying all significant hazards associated with each machine • Learners to complete Activity 41 by identifying safety aids and control measures needed during use	• Observation • Q&A • Activities

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Session	Objectives/learning outcomes **The learner will:**	Activities and resources	Assessment
		• Learners to complete Activity 42 by producing risk assessment for all machines **Resources:** • Activity 40: Learners to survey the workshop and identify all the significant hazards for each of the machines listed: a) circular rip saw; b) cross-cut; c) narrow bandsaw; d) planer; e) thicknesser; f) morticer. Any additional tasks will also need to be taken into consideration when deciding on significant hazards • Activity 41: Learners to identify all of the control measures and safety aids they are likely to require during the machining operations for the machines listed in Activity 24 • Activity 42: Learners to develop a suitable risk assessment to be used when producing timber and timber based components • Link to risk assessment: http://www.hse.gov.uk/risk/casestudies/pdf/woodworking.pdf	
Theory activities **Session 19** **(3 hours)**	**Learning outcome 2: Mark out curved joinery** **Topic 2.1: Tools and equipment** **Topic 2.2: Select and use materials** • Identify cutting lists and marking out process	**Activities:** • Recap on previous session • Tutor to outline the principles and practices of producing and using cutting lists and marking out components: • Learners to complete Activity 43 by identifying marking out process from rod boards and templates • Learners to complete Activity 44 by marking the statements on information sources available for the manufacturing of curved joinery as either true or false	• Observation • Q&A • Activities

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Session	Objectives/learning outcomes **The learner will:**	Activities and resources	Assessment
		Resources: • Activity 43: Learners to produce an electronic cutting list suitable for use in the production of curved joinery, including provision for all relevant information required by operatives involved in the manufacture of curved joinery • Activity 44: A set of statements about cutting lists and marking out principles used in the manufacturing of curved joinery for learners to mark as either true or false	
Practical activity **Sessions** **20- 49** (90 hours)	**Learning outcome 3: Manufacture curved joinery** **Topic 3.1: Methods of forming curved components** **Topic 3.2: Manufacturing joinery components** **Topic 3.3: Assembly and finishing methods** • Learners will understand and use methods to form various curved components for a range of joinery products. • The learner will use jigs to produce curved or straight. • Learners will manufacture a range of joinery components to include	**Session 20 to 49: practical workshop activities following relevant regulations and workshop rules to manufacture curved components** **Activities:** • Follow relevant health and safety guidance • Select correct tools and safety equipment to prepare timber for machining from cutting lists. • Use the following machines to produce components from cutting lists: — rip saw — crosscut saws — narrow bandsaws — planing machines — thicknessing machines — mortice machines — portable router with trammel bar. • Mark out materials from setting out rods	• Observation • Q&A • Practical activities

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Session	Objectives/learning outcomes **The learner will:**	Activities and resources	Assessment
	multiple forms of standard, complex machine and hand cut • Learners will assemble and finish a range of joinery components • Select and use appropriate tools and safety aids for the given task in accordance with current regulations • Follow current environmental and relevant health and safety regulations relevant to using woodworking machinery	• Produce curved templates • Produced curved components from a range of joinery components to include multiple forms of standard, complex machine and hand cut joints from the following: — hammer headed tenon/ key joint — loose tenons — dovetail key joint — mortice and tenon joints — bridle joints — machine-cut joint – comb — drawbore and pin. • Assemble and finish a range of joinery components, checking the following during the latter stage of production: — dry fitting prior to assembly — correct cramping techniques — process of assembling. • Finishing products from the following: — power feed speed sander — belt sander — random orbit sander — hand sanding	

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Session	Objectives/learning outcomes **The learner will:**	Activities and resources	Assessment
		— other specialist finishes. **Resources:** • Selection of timber and timber based material • Appropriate woodworking machinery • Portable power tools • Hand tools • Activity 42: Risk assessment • Individual learning plans: for each session, learners should outline the objectives that they reasonably expect to complete in that session. As the sessions progress, feedback from the previous sessions will guide and focus their future learning aims and objectives • Curved headed box sash window setting out specification • Curved headed box sash window jig production specification • Semi-circular headed box sash window cutting list and material production specification • Curved headed box sash window marking out specification • Curved headed box sash window manufacture and dry assembly specification • Curved headed box sash window manufacture and dry assembly specification • Elliptical architrave construction specification	

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Session	Objectives/learning outcomes **The learner will:**	Activities and resources	Assessment
		• Laminating frame head specification	
Theory activity **Session 30** (3 hours)	**Learning outcomes 1,2 and 3** Review of unit	**Activities:** • Learners to review Unit 307 and complete multiple choice questions **Resources:** • Set of 20 end of unit multiple choice test questions to check learner's understanding of the unit	• Observation • Q&A • End of unit questions

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