TVET CERTIFICATE III in SCULPTURE and CERAMICS

CSCCM304   **MAKING SCULPTURE OBJECT**

ACSCC304   **Make sculpture object**

Competence

Level: 3

Credits: 12   **Learning hours:120**

Sector: Art and Craft

Sub-sector: Sculpture and Ceramics

Module Note Issue date: June, 2020

Purpose statement

This module describes the skills, knowledge and attitude required to student who completed the nine years basic education, and it is intended for learners who have successfully completed the TVET certificate II in Sculpture and other related qualification. At the end of this module, learners will be able to curve different objects, decorate objects, and decorate low-relief objects.

Table of Contents

Total Number of Pages: 23

Learning unit 1- Prepare raw materials, tools and equipment

L.O 1.1- Identification of the type of wood

-**Softwood and hard wood**
-**Soft wood** : Softwood is wood from gymnosperm trees such as conifers, as well as Amborella. The term is opposed to hardwood, which is the wood from angiospe
Soft wood is any wood that is relatively soft or easily cut.rm trees.

Examples of soft wood
-umuvumu
 -Redwood.
  -umusave

-Hard wood
Hardwood is wood from angiosperm trees. It may also be used for those trees themselves: these are usually broad-leaved; in temperate and boreal latitudes they are mostly deciduous, but in tropics and subtropics mostly evergreen. **Hardwood** contrasts with softwood.
The different types and species of Hardwoods

- American **White Oak**.
- Sapele.
- Western Red Cedar.
- **Ash**.
- European **Oak**.
- **Maple**.
- Beech.

 Examples:
 –libuyu

-muvura

-ebeny

-umusave

-jacaranda

What is wood curving in art?

Wood carving, as an **art** form, includes any kind of sculpture in **wood**, from the decorative bas-relief on small objects to life-size figures in the round, furniture, and architectural decorations.

The artists can use the tools like simple gouges, chisels, **wooden** mallets, and pointed instruments.

So these woods can be sculpted in direct and indirect technic depending of artist sculptor.

Or is a form of woodworking by means of a cutting tool (knife) in one hand or chisel by two hands or with one hand on a chisel and one hand on a mallet, resulting in a wooden figure or figurine, or in the sculptural ornamentation of a wooden object. The phrase may also refer to the finished product, from individual sculptures to hand-worked mouldings composing part of a tracery

- <mark>Topic 2: Quality and default of wood for curving</mark>

it's ok to **carve** items from **dried wood**, but it's generally easier to **carve green wood**. **Green wood** just means that it still has moisture in it, that it was freshly cut. You can cut a section of **wood** and then freeze it to help contain the moisture and greenness. The **bending quality of wood** varies widely not only among the different species but also within the same species. ... The species commonly used in industry for making bent members are: White oak, red oak, elm, hickory, ash, beech, birch, maple, walnut, mahogany, and sweetgum

LO 1.2 - Identification of tools and equipment

- <mark>Topic 1:Types of tools and equipment for using in curving</mark>

Carving **Chisel**. The carving **chisel** is, specifically, a flat bladed carving tool. ...
Carving **Gouges**. The carving **gouge** is the most commonly used type of carving tool. ...
Long Bent **Gouges**.
Spoon Bent **Gouges**.
Fishtail **Gouges**.
Carving Knives.

- <mark>Topic2 : utility of different tools and equipment</mark>

Term	utilities
Gouge	Carving tool with a curved cutting edge. The most used category of carving tools.
sweep	The curvature of the cutting edge of a carving gouge.
Veiner	A small deep gouge with a U-shaped cutting edge. Usually #11 sweep.
fluter	A larger sweep gouge with a U-shaped cutting edge.
sloyd knife	A whittling knife having a strong, blade slightly shorter than the handle (around 5 inches),

	suitable for marking or carving.
chisel	A carving tool with a straight cutting edge (usually termed #1 sweep) at right angles (or square too) the sides of the blade.
skew chisel	A chisel with the edge at a "skew" or angle relative the sides of the blade. Often termed #2 sweep in the Sheffield list or #1s in continental lists.
V-tool	A carving tool with a V-shaped cutting edge. Used for outlining and decorative cuts. Referred to as 'the carvers pencil' by old-time professional carvers.
Long bent	A gouge, chisel or V tool where the blade is curved along its entire length. Handy for deep work.
Short bent	A gouge, chisel or V tool where the blade is straight with a curve at the end, like a spoon. Use for work in deep or inaccessible areas. Spoon gouges were often referred to as 'tracery tools' which indicates their use in the type of decorative carving found in churches
fishtail	A gouge or chisel with a straight, narrow shank that flares out at the end to form a "fishtail" shaped tool. The narrow shaft of the tool allows for clearance in tight areas.
Back bent	A spoon gouge with a reverse bent end. Used for undercuts and reeding work.
Palm tools	Short (5"), stubby tools used with one hand while the work is held in the other. Great for detail and small carving.
tang	The tapered part of the blade that is driven into the handle.
bolster	A flared section of the blade near the tang that keeps the blade from being driven further into the handle.
ferrule	A metal collar on the handle that keeps the wood from splitting when the tool is used with a mallet. Some tools have an external, visible ferrule while others have an internal ferrule.Some old, small detail tools have neither bolster nor ferrule as their light use makes them

	unnecessary.

Example of carving tools

:

    Wood Carving Tools, Tips & Techniques

Woodcarving is the process of using either hand tools or power tools to remove wood from portions of a piece. It can be used to add texture, decorative elements or to create a final piece such as a <u>wooden spoon</u>. Some woodworkers combine carving and piercing. Piercing is simply going all the way through the piece. Knowing about the variety of carving and piercing tools available today, along with methods for the removal of material can save time and frustration. Following are some helpful wood carving and piercing tips.

1. Realize you can use a mallet on some wood carving tools.

Some carving tools can be used either by hand or with a mallet. Pushing tools by hand can be inefficient – especially when carving large projects and dense hardwoods. Consequently, you can use most full-sized carving tools 10" to 12" (25cm to 30cm) with two hands or driven with a mallet. In some cases, using a mallet can provide a more controlled cut.
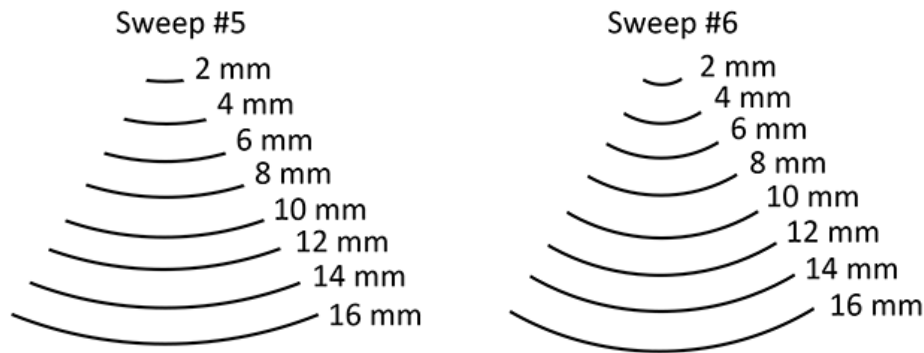
Carving tools.

2. Realize you can carve boards that you have glued.

It is typically necessary and acceptable to glue smaller boards together to create larger carved projects. By gluing wood, it is also possible to orient the wood so the more delicate parts of a design are arranged along the grain for increased strength. When creating carving blanks from numerous pieces of wood, it is helpful to plan the project. This helps avoid glue seams in highly visible locations (e.g., down the middle of a face).

3. Understand the different types of gouges.

You can buy gouges in a wide variety of widths and curvatures. Some curvatures are nearly straight and some have a very tight arc. While the curvature may vary slightly from one brand to the next, in all cases low numbers indicate a shallower, flatter sweep. Whereas, higher numbers indicate a more pronounced, deeply curved gouge. Notice in the figure below that a gouge with a "Sweep 5" has less curve than a gouge with a "Sweep 6". Gouges also come in a wide variety of widths. Depending upon the brand, the width of the gouges maybe specified in mm or inches. Regardless of the brand, the larger the distance across the gouge, the larger the width. For example, in the figure below, notice how the width (in millimeters) corresponds to the distance across the gouge.

## 4. be able to identify the hand wood carving tools below.

Chisel (A) has a straight cutting edge that is perpendicular to the side edges. Skew chisel (B) is a bevel-edge chisel with an angled tip. Gouge (C) is a chisel with a concave blade. V-tool (D) is essentially two chisels which have been joined together to create a "V". Fishtail gouge (E) is a gouge that flares out at the ends to form a "fishtail" shaped tool.


Hand carving tools.

5. Understand negative and positive piercing.

In a "negative dominant piercing," the design appears as an "outline" of wood within a background of pierced holes. The design is more difficult for you to see and may require a closer look to reveal the pattern. On the other hand, with "positive piercing", the design appears as "solid wood" within a background of pierced holes. The final design is typically more easily visible. Assuming the cross is the desired pattern, you can see a negative and positive dominant piercing below.
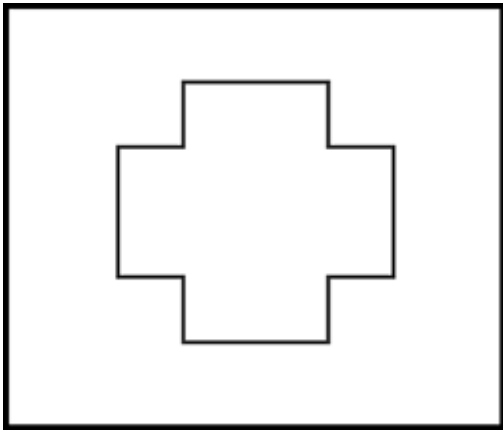
Desired pattern.
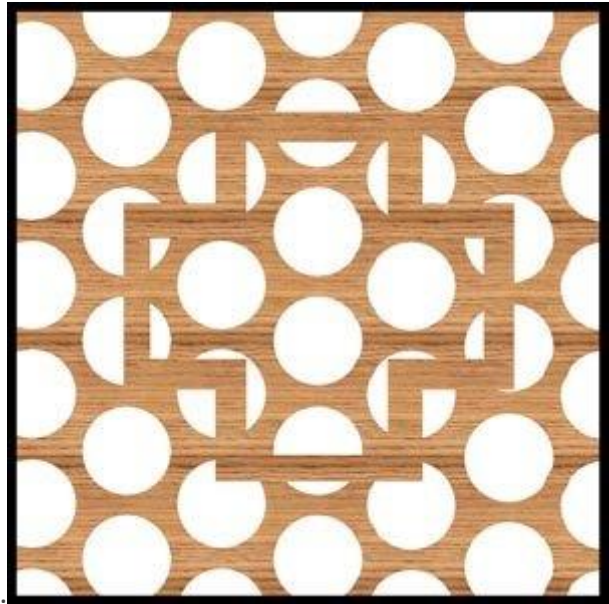
Negative dominant piercing. Positive dominant piercing.

6. Keep the tool perpendicular to the surface being pierced.

If this is not done, then the amount of wood left between holes will be thicker on one side than the other side and the cuts will appear to "lean".

7. Realize that burrs work best at high speeds.

Burrs or rotary files typically work best at high speeds (thousands of RPM). High speeds help maintain the correct cutting conditions with regards to the surface speed. The burrs are typically held in a hand piece attached to a shaft grinder which uses a rotary motion (i.e., the bits revolve around a center or axis). The hand pieces shown below alongside the flexible shaft grinder can accept drill bits, abrasive cut-off wheels, sanding drums, rotary files, and carbide burrs for cutting, shaping, carving, and flexible shaft gringer along with two hand pieces

Bur set for wood carving.

8. Wear a safety glove when wood carving.

While it is a good idea to wear a carving glove on both hands, at a minimum, a safety glove should be worn on the hand which is holding the wood. This glove will help keep your hands safe from the sharp tools. If you find yourself switching hands frequently, you might want to wear a glove on both hands. For

protection against accidental cuts, many wood carvers wear safety gloves typically made from a Kevlar and steel weave on both hands.

9. Understand the different types of patterns.

You create a "positive pattern" by removing the background and revealing the design, character, or scene. The word "OAK" illustrates a positive pattern. On the other hand, you create a "negative pattern" below the surface of the wood.

10. Realize hardwoods are typically more difficult to carve.

For example, oak is a dense wood with a coarse grain which makes it very hard to carve. It also tends to break away at the edges when attempting very fine work. If you decide to carve oak, keep your hand tools super sharp or consider using power tools. On the other hand, woods like balsa, basswood, and pine are softer and easier to carve.

11. Use "relief carving" to raise a design.

With relief carving you remove the background. This makes it appear that you raised the foreground (e.g., the design, scene, or character). Some people call it "relief carving" because of the feeling felt when the piece is finished!

12. Realize "whittling" is a type of carving which only uses knives.

This action results in a surface with "knife strokes" clearly visible on the final piece giving it a rugged natural feel.

13. Use "carving in the round" to create 3D figures.

Carving in the round creates 3D figures that you can view from any angle. These figures frequently have "lifelike" surfaces and textures. The carver typically uses a variety of tools such as gouges, chisels, abrasive points, burrs, etc. to create a smooth surface.

14. Use "chip carving" design or geometric pattern.

Chip carving uses knives and chisels to remove "chips" of wood to form a design or geometric pattern. Typically, chip carvings have two levels. One level is the wood surface, and the second level is the point beneath the surface of the wood where the cuts meet.

15. Consider using a power wood carver when working with hard wood.
The reciprocating motion (moving backward and forward in a straight line) makes it easy to drive even large gouges into hard wood.

Below are some helpful links on sharpening carving tools and a fun project.

- **Sharpening system**
  sharpening system is a simple solution to find and hold the right angle while **sharpening**. **Sharpening systems** use steels or stones.
- **5ways to identify sharp tools**
  Woodturners
  Most woodturners typically perform carving or piercing after the piece has been turned and sanded to satisfaction. Some woodturners might only carve or pierce the rim of a bowl. Whereas, the next woodturner may decorate the entire piece (rim, body, and base) through carving and piercing. The possibilities with carving and piercing are endless. Together, with carving an piercing you can create beautifully turned pieces.

  Keep vessel walls thin when piercing. Using thin walls 1/16" to 3/32" (1.5mm to 2.5mm). Thin walls:
  A. Give a piece a more delicate, light feeling.
  B. Result in breaking fewer bits.
  C. Save time and tools since many of the tools used for piercing have very little torque.

. LO 1.3: Appropriate sharpening and arranging tools

 What is sharpening tools?

Sharpening is the process of creating or refining a sharp edge of appropriate shape on a tool or implement designed for cutting. Sharpening is done by grinding away material on the implement with an abrasive substance harder than the material of the implement, followed sometimes by processes to polish the sharp surface to increase smoothness and to correct small mechanical deformations without regrinding

Some useful equipment for sharpening tools includes the following:

- Protective eyewear and gloves.
- Steel wool or wire brush.
- Files: Flat mill file (8 - 10 inch), Round or half-round file (8 - 10 inch)
- Bench vise, clamp or other bracing system.
- Grinding wheel/bench grinder.
- Scissor sharpeners.
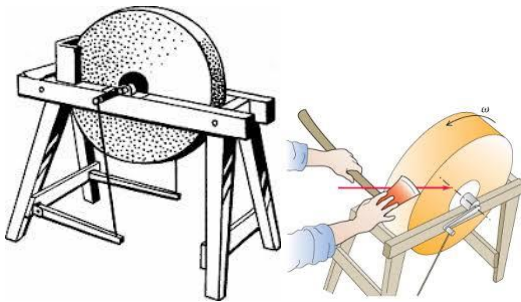- Sharpening stones.
- **Sandpaper**

- **Example** .

Content1:process of sharpening sketch out tools by

✓ **grind stone :**

what is grind stone?

Is a thick disc of stone or other abrasive material mounted so as to revolve, used for grinding, sharpening, or polishing metal objects

Example:

✓ Oil stone

Is a block of fine-grained stone, usually oiled, for putting the final edge on certain cutting tools by abrasion?

Example

LO 1.4- Proper applying types of joint

what is joint wood

Joinery is a part of woodworking that involves joining together pieces *of* **wood** *or* **lumber,** to produce more complex items. Some **wood joints** employ fasteners, bindings, or adhesives, while others use only *wood* elements.

The characteristics of **wooden joints** - strength, flexibility, toughness, appearance, etc.

Types of joint

- ✓ Though housing joint
- ✓ Mortise and tenon joint
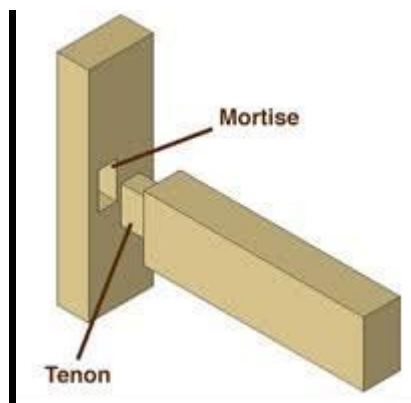- ✓ Bridle joint
- ✓ Dove tail joint
- ✓ Halving joint

- <mark>Topic 2: Proper application types of joint</mark>

- ✓ **Though housing joint**: The simplest is the **through housing**, where the **joint** runs the full width of the work piece, and is clearly visible at both ends. A more refi need version is the **stopped housing**, where the front edge of the **joint** is concealed, resulting in a neater appearance.

  Example:
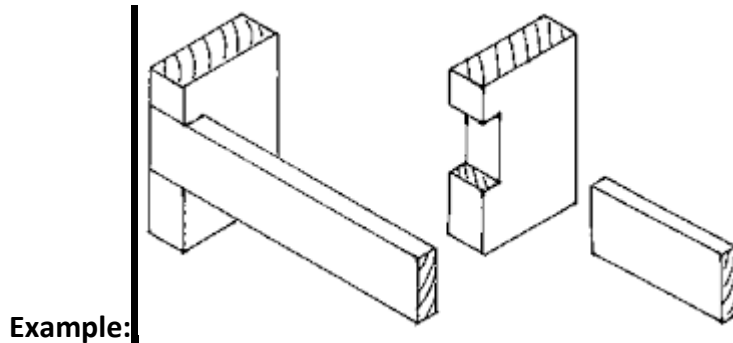
- ✓ **Mortise and Tenon joint:** A *mortise* (occasionally *mortice) and Tenon joint* connects two pieces of wood or of material. Woodworkers around the world have used it for thousands of years to join pieces of wood, mainly when the adjoining pieces connect at right angles. ... In its most basic form, a *mortise and tenon joint* is both simple and strong.
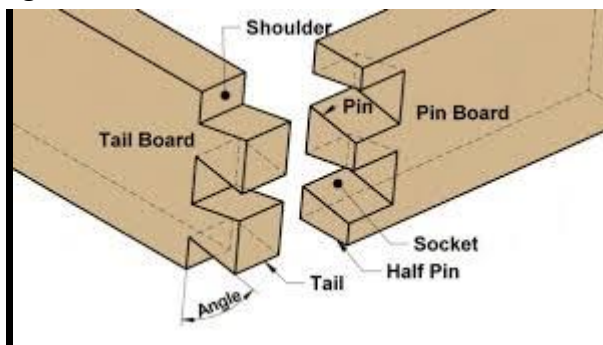
  Example:

- ✓ Bridle joint : A bridle joint is a woodworking joint, similar to a mortise and tenon, in that a tenon is cut on the end of one member and a mortise is cut into the other to accept it.

Examples:
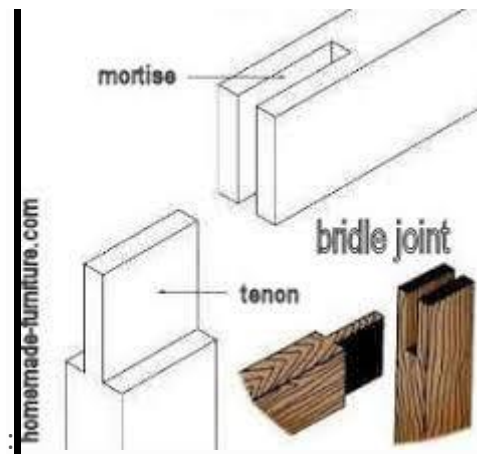
✓ Dove tail joint : is a joint formed by one or more tapered projections (tenons) on one piece which interlock with corresponding notches or recesses (mortises) in another.

Eg:

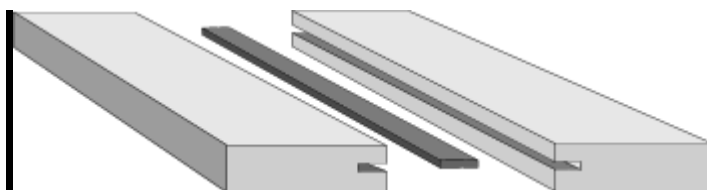✓ Halving joint : A **halved joint** is a woodworking **joint** in which the two members are joined by removing material from each at the point of intersection so that they overlap. The **halved joint** is differentiated from the lap *joint* in that the members are joined on edge, rather than on the flat.

Eg

✓
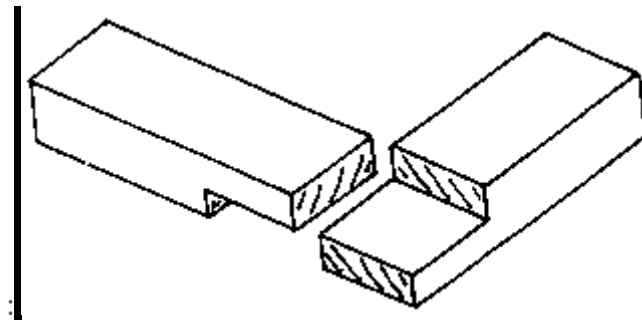
Eg:

Process of maintain tools
✓ Oiling tools
✓ Store in cool place

> ✓ Arranging in tool roll

- **Topic3: Making furniture by using joint**

One of the **more popular** woodworking **joints** is the edge-to-edge **joint**, called tongue and groove. One piece has a slot (groove) cut all along one edge. The other piece has a tongue cut on the mating edge. As a result, two or **more** pieces fit together closely.

Eg

Learning unit 2- Curve Sculpture object

LO: 2.1. Apply   sketch on the wood

- **Topic :1 Process of tracing decorative motif on wood**

    -sketch research

    -select model or motif to curve

    -make enlargement of motif selected

    -make sure if motif is corresponding to the size of wood

    -prepare surface where you want to draw motif

    -start sketching or tracing motif by respect the element and principles of art

- Draw the **motif** in reverse, go over it in soft pencil, put the **motif** pencil side down on the **wood** and rub the paper. The pencil **motif** will **transfer** to the paper.

    2) Lay the **motif** on the **wood** over a sheet of carbon paper. Trace over the **motif** , the carbon paper will **transfer** the **motif** to the **wood**.

-The method of copying model on curving surface is the use of free hand sketching or direct sketch.

-The use of Carbone paper for transferring image on surface:

 paper faced with a preparation of carbon or other material, used between two sheets of plain paper in order to reproduce on the lower sheet that which is written or typed on the upper.

-Printing making on surface and projection

-By stencilling

L.O 2.2- Identify types of sculpture works

• Topic1 : Identification type of relief   (2 Dimension)

   ✓ Low-relief :
   ✓ Half relief
   ✓ High relief
   ✓ Sunken relief

What is relief sculpture?

The term relief is from the Latin verb *relevo*, meaning to raise. The ancient relief sculptural technique involves creating 3D elements that remain attached to a 2D background of the same material, resulting in sculpted motifs that are raised from the surface.

There are 3 basic types of relief sculpture: **low relief** (or bas-relief), whereby the motifs are only slightly raised above the surface; **high relief** (or alto-relief), whereby the sculpture projects at least half or more of its natural circumference from the background; and **sunken relief** (incised, coelanaglyphic, or *intaglio* relief), whereby the carving is sunk below the level of the flat surface.

Example of low relief

Example of high relief

Sunken relief

What is round boss (3d) Sculpture

Round sculpture is a type of **sculpture** in which the figures are presented in complete three-dimensional form and are not attached to a flat background (unlike relief). The principal types of **sculpture** in the **round** are statues, busts, and **sculptural** groups

Eg:

L.O .2.3- Execute curving techniques chosen

- Topic1 : Application of curving wood according to model

Steam **bending** is a woodworking **technique** where **wood** is exposed to steam to make it pliable. Heat and moisture from steam can soften **wood** fibres enough so they can be bent and stretched, and when cooled down they will hold their new shape.

Bending Wood with the Kerf-cutting Method

1. **Prepare** your **wood**. Cut notches, or **curves**, 2/3 of the thickness of the **wood**. ...

2. Compress the ends of the **wood** to push the gaps created by the notches together. This will be the shape of the **wood** when it is finished.

3. Fix the **bend**.

- **Application of curving wood**
-Prepare sharpening tools for curving wood
-prepare wood curving
-draw or tracing model on wood
-start to curve model that is on wood
-give the shape of the model
-making of finishing of curved image.

Most woodworking projects rely on straight lines and right angles, but sometimes you need a nicely formed curve to give your project a more stylish look. So how do you make a curve when you're modifying a project plan or designing a piece from scratch? Study the curved shapes in good furniture to develop your eye. Then try the techniques shown here.

When you're tinkering with a curve, trying to get it just so, draw on a full-size piece of plywood, medium-density fiberboard, cardboard, or paper instead of putting it directly on your stock. You can tape together brown paper bags from the grocery store to make a template as large as necessary. Transfer the curve to the work piece by cutting out the template and tracing along its edge.

For symmetrical shapes with multiple curves, draw exactly half of the shape on plywood, hardboard, or paper. Cut out that piece and use it as the template for the other half.

Remember that you already own an array of templates for simple shapes. For example, anything from a five-gallon bucket to a small washer can serve as the pattern when you need a round corner. And once you've made a nice template, save it. Put it in a drawer, or hang it on perforated hardboard, because you just might need it again someday.

Eg:

Learning unit 3: Apply Finishing

L.O 3.1- Apply texturing on object

- <mark>Topic1: Application of texture on object by using</mark>

    -Clasper

    -Scissor

Specific **use** of a **texture** can affect the smoothness that an **artwork** conveys. For instance, **use** of rough surfaces can be visually active, whilst smooth surfaces can be visually restful. The **use** of both can give a sense of personality to a design, or utilized to create emphasis, rhythm, contrast, etc.

What is texture of an object:

Texture refers to the surface quality in a work of **art**. ... Some things feel just as they appear; this is called real or actual **texture**. Some things look like they are rough but are actually smooth. **Texture** that is created to look like something it is not, is called visual or implied **texture**.

Eg:

Types of texture

Textures might be divided into two categories, namely, tactile and visual **textures**.
Tactile **textures** refer to the immediate tangible feel of a surface.
 There are **four types of texture** in art:

-actual,

-simulated,

-abstract,

-and invented **texture**.

- Tactile **texture** is the real thing. ...
- Visual **texture** is not real **texture**.

*tactile texture

*visual texture

L.O 3.2.- Smooth of curved object

sand paper

Sandpaper is the simple way to keep a point on difficult-to-sharpen drawing pencils, charcoal, pastels, or crayons. 12 sheets of 1x4" fine **sandpaper** is padded and mounted on wood block.

Example:

Hand-Sand the Curves

Sand curved surfaces—and other areas an electric sander can't reach—by hand. Treat all areas equally, using the same progression of sandpaper grits for both hand and power sanding. Start with 80-grit to sand away blemishes, then use 120-grit and finally 180-grit. Using these exact grits isn't vital (100-150-180 works too), but it's important to progress in steps, removing deeper scratches and leaving finer scratches each time

Example

.

Sand without Scratches

A **random orbital sander** leaves scratches that are practically invisible, so you can sand across joints where grain changes direction. But move slowly (about 1 inch per second) and apply light pressure. Otherwise, you'll get swirly scratches

Eg:

Sand With the Grain

Sand with the grain when hand sanding or using a **belt sander**. Scratches are hard to see when they run parallel to the grain. But even the lightest scratches across the grain are obvious, especially after staining.

Eg:

L.O 3.3- Apply varnishing of curving object

What is varnish?

Varnishes provide protective coatings for wooden surfaces, paintings, and various decorative objects. **Varnish** protects and enhances the appearance of wooden floors, interior wood paneling and trim, and furniture. **Varnishing** wood.

Is varnish good for wood?

Varnishes are usually clear, highly durable and offer protection, making them suitable for doors and marine finishes, whether on bare or stained **wood**. They are less expensive than polyurethane and are slow to dry, making them susceptible to dust and dirt. They are also considered among the best **wood** sealants.

Varnish is primarily used to seal wood finishes where, stained or not, the distinctive tones and grains in the wood are intended to be visible. Varnish finishes are naturally glossy, but satin or semi-gloss sheens are available.

STEPS OF VARNSHING

1: Project overview. Sand.

2: Begin by sanding, Sand with the grain.

3: Clean the room.

4: Brush on the stain and wipe it off fast.

5: Brush on a sanding sealer.

6: Sand the sealer before **varnishing**.

7: Finish up with oil-based **wood varnish**

Eg:

REFERENCES:

1. Fine Wood working Tools 2006/2007, Yvon ROY, ONTARIO- OTTAWA ISBN 10:897030-58-4 ISBN 13:978-1-897030-58-5

2. Art and Designer, 1988/1989, Obonyo O. DIGOLO and Elizabeth C. ORCHARDSON

3. Imigongo of Rwanda Catalogue, Realise avec l'appui de la GTZ Rwanda Programme Promotion de l'Economie et de l'Emploi

4. Rwanda Nziza, Sous la Direction de Thierry Mesas, Texte de Faustin Kagame/ Photographies de Gilles Tordje man Sipia urukundo