

**Course Name : Civil Engineering Group**

**Course Code : CE/CT/CR**

**Semester : First**

**Subject Title : Basic Workshop Practice (Civil)**

**Subject Code :**

**Teaching and Examination Scheme:**

Teaching Scheme			Examination Scheme						
TH	TU	PR	PAPER HRS	TH	TEST	PR	OR	TW	TOTAL
01	--	04	--	--	--	--	--	25@	25

**Rationale:**

Civil diploma technician is expected to know basic workshop practice like, Gas Welding gas cutting. Fitting, Drilling, Tapping, plumbing and sheet metal processes. The students are required to identify operate and control various machines. The students are required to select and use various tools and equipments for welding, fitting, tapping drilling, plumbing and sheet Metal operations.

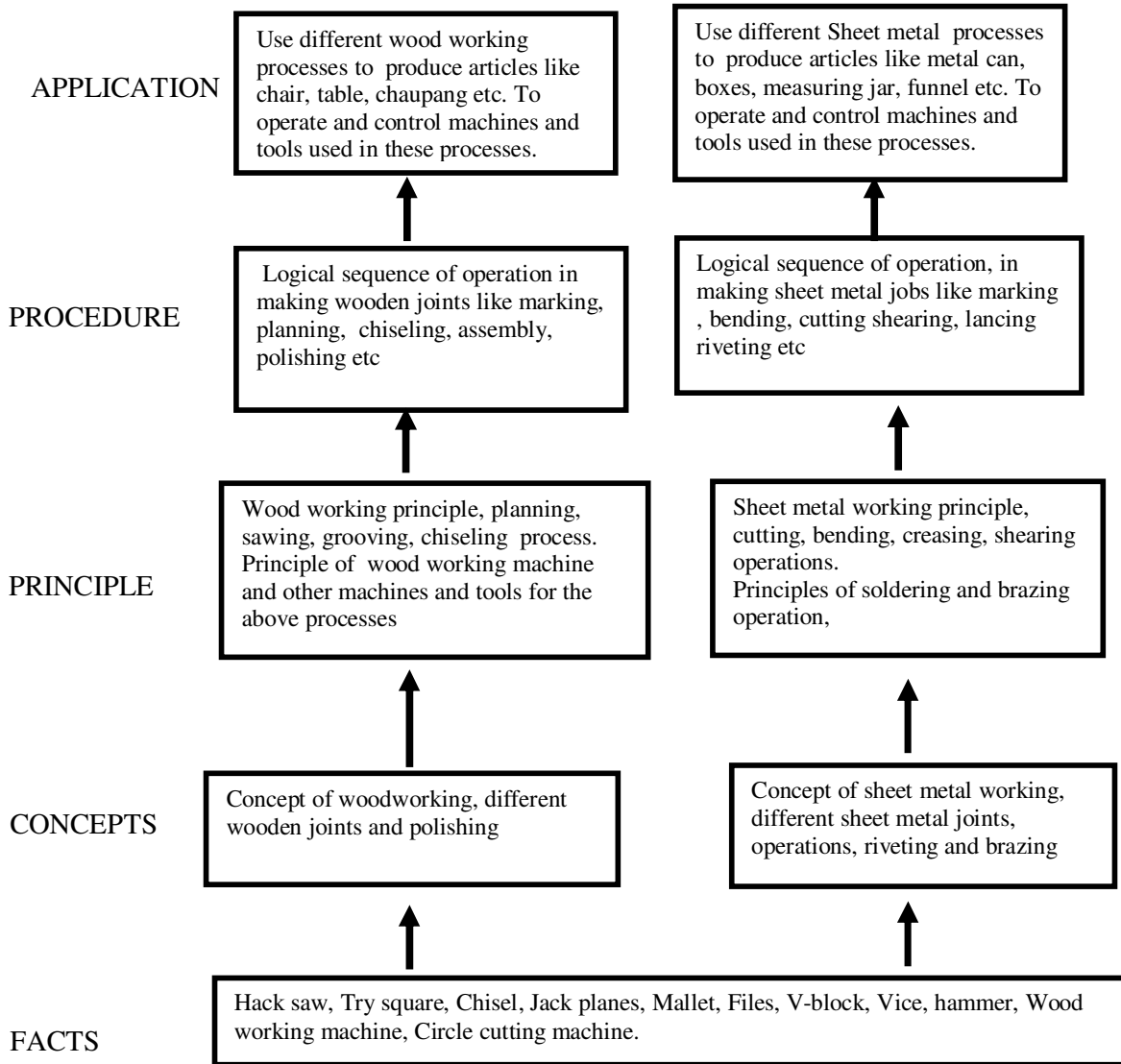
**Objectives:**

At the end of this course, the student will able to

- Know basic workshop processes.
- Read and interpret job drawings.
- Identify, select and use various marking, measuring, and holding, striking and cutting tools & equipments wood working and sheet metal shops.
- Operate, control different machines and equipments.
- Select proper welding rods and fluxes.
- Inspect the job for specified dimensions
- Produce jobs as per specified dimensions.
- Adopt safety practices while working on various machines.



LEARNING STRUCTURE:-



**CONTENTS:**

<b>Sr.No.</b>	<b>Details of Theory Contents</b>	<b>Period</b>
<b>01</b>	<b>CARPENTRY SHOP</b> 1. Introduction. 2. Various types of woods. 3. Different types of tools, machines and accessories.	03
<b>02</b>	<b>WELDING SHOP</b> 1. Introduction 2. types of welding, ARC welding, Gas welding, Gas Cutting. 3. welding of dissimilar materials, Selection of welding rod material Size of welding rod and work piece. 4. different types of flame. 5. Elementary symbolic representation, 6. Safety precautions in welding safety equipments and its use in welding processes.	04
<b>03</b>	<b>FITTING SHOP</b> 1. Introduction 2. Various marking, measuring, cutting, holding and striking tools. 3. Different fitting operation like chipping, filing, right angle, marking, drilling, tapping etc. 4. Working Principle of Drilling machine, Tapping dies its use. 5. Safety precautions and safety equipments.	04
<b>04</b>	<b>PLUMBING SHOP</b> 1. Introduction. 2. Various marking, measuring, cutting, holding and striking tools. 3. Different G.I. pipes, PVC pipes, flexible pipes used in practice. 4. G. I. pipes and PVC pipes fittings and accessories, Adhesive solvents-chemical action, Piping layout.	03
<b>05</b>	<b>SHEET METAL SHOP</b> 1. Introduction 2. Various types of tools, equipments and accessories. 3. Different types of operations in sheet metal shop. 4. Soldering and riveting. 5. Safety precautions.	02
	<b>Total</b>	<b>16</b>

Skill to be developed:

## Intellectual Skills:

1. Ability to read job drawing
2. Ability to identify and select proper material, tools, equipments and machine.
3. Ability to select proper parameters (like cutting speed, feed, depth cut use of lubricants) in machine.

## Motor Skills:

1. Ability to set tools, work piece, and machines for desired operations.

2. Ability to complete job as per job drawing in allotted time.
3. Ability to use safety equipment and follow safety procedures during operations.
4. Ability to inspect the job for confirming desired dimensions and shape.
5. Ability to acquire hands-on experience

Notes: 1] The instructor shall give demonstration to the students by preparing a specimen job as per the job drawing.  
 2] The workshop diary shall be maintained by each student duly signed by instructor of respective shop

Sr. No.	Details Of Practical Contents
01	<b>WOOD WORKING SHOP:</b> <ul style="list-style-type: none"> <li>• Demonstration of different wood working tools / machines.</li> <li>• Demonstration of different wood working processes, like planing, marking, chiseling, grooving, turning of wood etc.</li> <li>• One simple job involving any one joint like mortise and tenon dovetail, bridle, half lap etc.</li> </ul>
02	<b>WELDING SHOP :</b> <ul style="list-style-type: none"> <li>• Demonstration of different welding tools / machines.</li> <li>• Demonstration on Arc Welding, Gas Welding, gas cutting and rebuilding of broken parts with welding.</li> <li>• One simple job involving butt and lap joint.</li> </ul>
03	<b>FITTING SHOP:</b> <ul style="list-style-type: none"> <li>• Demonstration of different fitting tools and drilling machines and power tools</li> <li>• Demonstration of different operations like chipping, filing, drilling, tapping, cutting etc.</li> <li>• One simple fitting job involving practice of chipping, filing, drilling, tapping, cutting etc.</li> </ul>
04	<b>PLUMBING SHOP:</b> <ul style="list-style-type: none"> <li>• Demonstration of different plumbing tools</li> <li>• Demonstration of different operations in plumbing, observing different pipe joints and pipe accessories. Different samples of PVC pipes and PVC pipe fittings.</li> <li>• One job on simple pipe joint with nipple coupling for standard pipe. Pipe threading using standard die sets.</li> </ul>
05	<b>SHEET METAL SHOP:</b> <ul style="list-style-type: none"> <li>• Demonstration of different sheet metal tools / machines.</li> <li>• Demonstration of different sheet metal operations like sheet cutting, bending, edging, end curling, lancing , soldering and riveting.</li> <li>• One simple job involving sheet metal operations and soldering and riveting.</li> </ul>

**Books:**

- S.K. Hajara Chaudhary- Workshop Technology-Media Promoters and Publishers,New Delhi
- B.S. Raghuwanshi- Workshop Technology- Dhanpat Rai and sons, New Delhi
- R K Jain- Production Technology- Khanna Publishers, New Delhi

- H.S.Bawa- Workshop Technology- Tata McGraw Hill Publishers,New Delhi
- Kent's Mechanical Engineering Hand book- John Wiley and Sons, New York
- Electronics Trade & technology Development Corporation.(A Govt. of India undertaking)  
Akbar Hotel Annex, Chanakyapuri, New Delhi- 110 021

**Video Cassesses/ CDS**

Learning Materials Transparencies, CBT Packages developed by N.I.T.T.E.R. Bhopal.

**Course Name : Electrical Engineering/ Electrical Power System.**

**Course Code : EE/EP**

**Semester : First**

**Subject Title : Basic Workshop Practice (Electrical)**

**Subject Code : --**

**Teaching and Examination Scheme:**

Teaching Scheme			Examination Scheme						
TH	TU	PR	PAPER S HRS	TH	TEST	PR	OR	TW	TOTAL
01	--	04	--	--	--	--	--	25@	25

Note: 1. Theory related to the practical will be taught during the practical periods

**RATIONALE:**

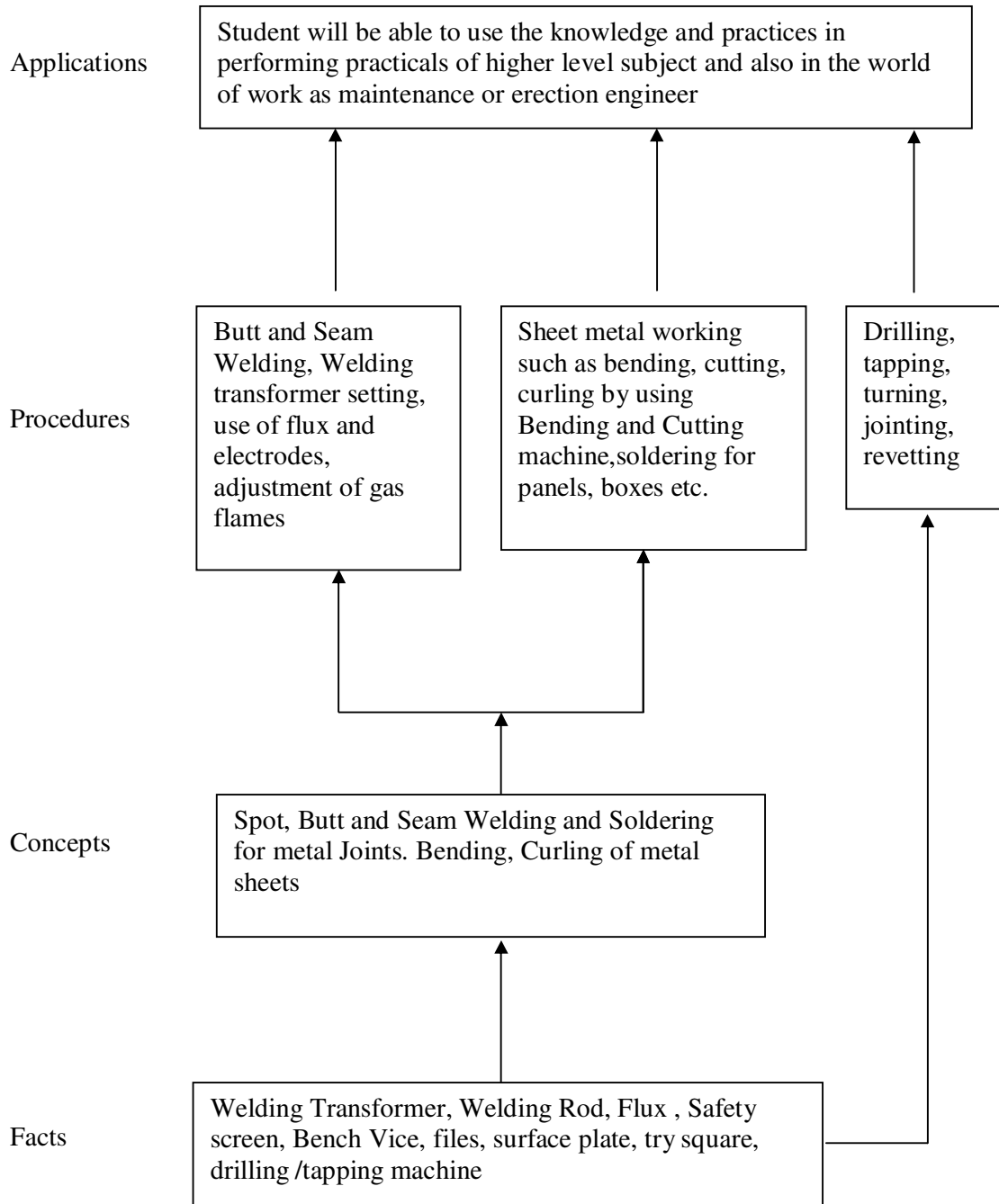
For a diploma folder in Electrical Engineering, it is essential to know some basic workshop skills. In the world of work students are required to supervise maintenance of equipment, where he needs the knowledge of basic workshop skills such as Welding, Soldering, Sheet Metal Working, Drilling, Tapping etc.

**OBJECTIVES:**

The student will be able to

1. Use the knowledge of sheet metal working and welding for preparing panels, switch boxes etc.
2. Use various drills for electrical wiring and installation
3. Make joints for various types of wirings such as casing capping, Batten wiring and mounting of accessories

**Learning Structure:**



## Contents: Theory

Chapter	Name of the Topic	Hours
1.	<b>WELDING SHOP :</b> 7. Introduction 8. types of welding, ARC welding, Gas welding, Gas Cutting. 9. welding of dissimilar materials, Selection of welding rod material Size of welding rod and work piece. 10. Different types of flame. 11. Elementary symbolic representation, 12. Safety precautions in welding safety equipments and its use in welding processes.	04
2.	<b>SHEET METAL SHOP.</b> 6. Introduction 7. Various types of tools, equipments and accessories. 8. Different types of operations in sheet metal shop. 9. Soldering and rivetting. 10. Safety precautions.	04
3.	<b>TURNING SHOP</b> 6. Introduction 7. Various marking, measuring, cutting, holding and striking tools. 8. Working Principle of Drilling machine, Tapping dies its use. 9. Drilling and Tapping 10. Turning: Plain, taper 11. Threading and Knurling 12. Safety precautions and safety equipments.	04
4	<b>PLUMBING SHOP</b> 5. Introduction. 6. Various marking, measuring, cutting, holding and striking tools. 7. Different types of PVC pipes, flexible pipes used in practice. 8. PVC pipes fittings and accessories, Adhesive solvents-chemical action, 9. Piping layout.	04
	<b>Total</b>	16

**Practical:** Skills to be developed:

**1. Intellectual Skills:**

- a) Ability to read job drawings.
- b) Ability to identify and select proper material, tools and equipments and machines.
- c) Ability to select proper parameters ( like cutting speed, feed, depth cut use of lubricants ) in machine.

**2. Motor Skills :**

- a) Ability to set tools, work piece, and machines for desired operations.

- b) Ability to complete job as per job drawing in allotted time.
- c) Ability to use safety equipment and follow safety procedures during operations.
- d) Ability to inspect the job for confirming desired dimensions and shape.
- e) Ability to acquire hands-on experience

Sr. No	DETAILS OF PRACTICAL CONTENTS
01	<p><b>WELDING SHOP</b></p> <ul style="list-style-type: none"> <li>• Any one composite job from involving butt joint lap joint welding process, from the following like Grill, door, window frame, Corner flower stand chair , table frame (square pipe 25 mm) cooler frame (folding type), Kitchan Trolley, Centering Plate, supporting frames</li> </ul> <p><b>Note:</b> 1] One job of standard size (Saleable/marketable article shall be preferred)  2] Batch size should be selected depending on volume of work .  3] Job allotted should comprise of 6-8 hours of actual working operations.  4] Student shall calculate the cost of material and labor required for their job from the drawing.</p>
02	<p><b>PLUMBING SHOP</b></p> <ul style="list-style-type: none"> <li>• Demonstration of PVC pipe joint with various fittings.</li> <li>• Exercise for students on preparing actual pipeline layout for PVC pipe. Preparing actual drawing and bill of material.</li> </ul>
03	<p><b>SHEET METAL SHOP</b></p> <ul style="list-style-type: none"> <li>• One composite job of Water-draining Channel, display boards, Panel Board, Switch Box, Glass Panelling items etc.</li> </ul> <p><b>Note:</b> 1] One job of standard size (Saleable/marketable article shall be preferred)  2] Batch size should be selected depending on volume of work.  3] Job allotted should comprise of 4-6 hours of actual working ions.  4] Student shall calculate the cost of material and labor cost required for their job from the drawing.</p>
04	<p><b>TURNING SHOP</b></p> <p><b>Note:</b>1] One job related to Plane and Taper turning, threading and knurling  2] One job related to Drilling and tapping  3] Batch size should be selected depending on volume of work.  4]Job allotted should comprise of 6-8 hours of actual working  5] Student shall calculate the cost of material and labor cost for their job from the drawing.</p>

05	<p><b>Demonstration of power tools and practice of utility items.</b></p> <ul style="list-style-type: none"> <li>• Demonstration of advance power tools, pneumatic tools, electrical wiring tools and accessories.</li> <li>• Tools for Cutting and drilling,</li> </ul>
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**Learning Resources:**

**Books:**

Sr. No.	Name of the Auther	Name of the Book	Publisher
01	S.K. Hajara Chaudhary	Workshop Technology	Media Promotors and Publishers, New Delhi
02	B.S. Raghuwanshi	Workshop Technology	Dhanpat Rai and Sons, New Delhi
03	R K Jain	Production Technology	Khanna Publishers, New Delhi
04	H.S.Bawa	Workshop Technology	Tata McGraw Hill Publishers, New Delhi
05	--	Kent's Mechanical Engineering Hand book	John Wiley and Sons, New York

Video Cassettes / CDS

- Learning Materials Transparencies, CBT Packages developed by NITTER Bhopal.

**Course Name : Mechanical Engineering**

**Course Code : ME/AE/PG/PT/CH/PS**

**Semester : First**

**Subject Title : Basic Workshop Practice (Mechanical & Chemical Group)**

**Subject Code : --**

### **Teaching & Examination Scheme**

<b>Teaching Scheme</b>			<b>Examination Scheme</b>						
TH	TU	PR	PAPER HRS	TH	TEST	PR	OR	TW	TOTAL
01	--	04	--	--	--	--	--	25@	25

@ - Internal Assessment

### **Rationale:**

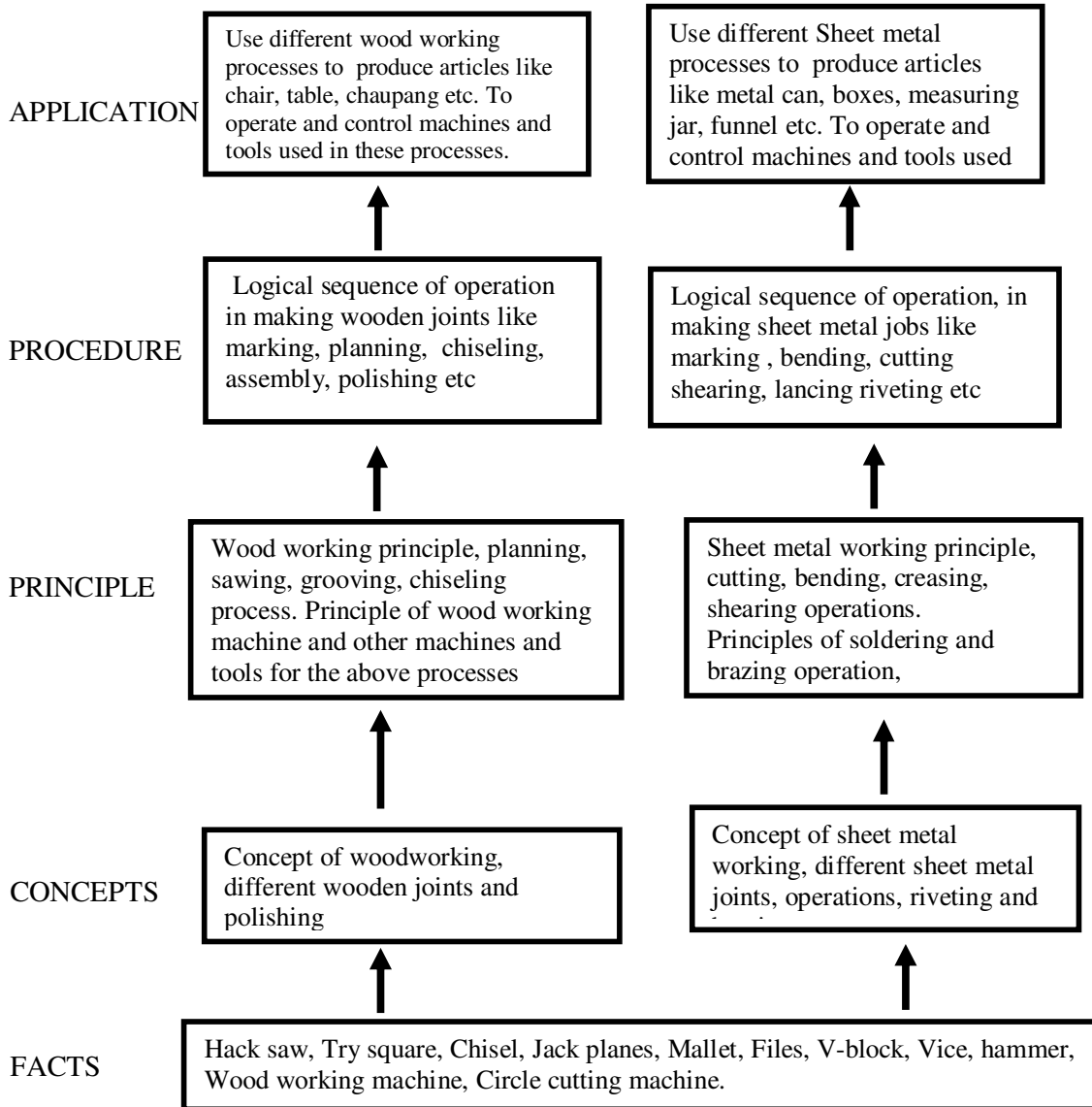
Mechanical and Chemical diploma technician is expected to know basic workshop practice like Wood working, Sheet metal. The students are required to identify, operate and control various machines. The students are required to select and use various tools and equipments related to Wood working and sheet metal processes.

### **Objectives:**

The student will able to

- Know basic workshop processes.
- Read and interpret job drawing.
- Identify, select and use various marking, measuring, holding, striking and cutting tools & equipments.
- Operate, control different machines and equipments.
- Inspect the job for specified dimensions
- Produce jobs as per specified dimensions.
- Adopt safety practices while working on various machines.

# LEARNING STRUCTURE



**CONTENTS:**

<b>Sr.No.</b>	<b>Details Of Theory Contents</b>	<b>Period</b>
<b>01</b>	<b><u>CARPENTRY SHOP</u></b> Introduction. Various types of woods. Different types of tools, machines and accessories.	<b>03</b>
<b>02</b>	<b><u>WELDING SHOP :</u></b> Introduction types of welding, ARC welding, Gas welding, Gas Cutting. welding of dissimilar materials, Selection of welding rod material Size of welding rod and work piece. different types of flame. Elementary symbolic representation, Safety precautions in welding safety equipments and its use in welding processes.	<b>04</b>
<b>03</b>	<b><u>FITTING SHOP:</u></b> Introduction Various marking, measuring, cutting, holding and striking tools. Different fitting operation like chipping, filing, right angle, marking, drilling, tapping etc. Working Principle of Drilling machine, Tapping dies its use. Safety precautions and safety equipments.	<b>04</b>
<b>04</b>	<b><u>PLUMBING SHOP:</u></b> Introduction. Various marking, measuring, cutting, holding and striking tools. Different G.I. pipes, PVC pipes, flexible pipes used in practice. G. I. pipes and PVC pipes fittings and accessories, Adhesive solvents-chemical action, Piping layout.	<b>03</b>
<b>05</b>	<b><u>SHEET METAL SHOP.</u></b> Introduction Various types of tools, equipments and accessories. Different types of operations in sheet metal shop. Soldering and riveting. Safety precautions.	<b>02</b>
	<b>Total</b>	<b>16</b>

**Skill to be developed:**

## Intellectual Skills:

1. Ability to read job drawing
2. Ability to identify and select proper material, tools, equipments and machine.
3. Ability to select proper parameters (like cutting speed, feed, depth cut use of lubricants) in machine.

**Motor Skills:**

1. Ability to set tools, work piece, and machines for desired operations.
2. Ability to complete job as per job drawing in allotted time.
3. Ability to use safety equipment and follow safety procedures during operations.
4. Ability to inspect the job for confirming desired dimensions and shape.
5. Ability to acquire hands-on experience.

Notes: 1] The instructor shall give demonstration to the students by preparing a specimen job as per the job drawing.  
2] The workshop diary shall be maintained by each student duly signed by instructor of respective shop

Sr.No.	Details Of Practical Contents
01	<b>WOOD WORKING SHOP:</b> Demonstration of different wood working tools / machines. Demonstration of different wood working processes, like planing, marking, chiseling, grooving, turning of wood etc. One simple job involving any one joint like mortise and tenon dovetail, bridle, half lap etc.
02	<b>WELDING SHOP :</b> Demonstration of different welding tools / machines. Demonstration on Arc Welding, Gas Welding, gas cutting and rebuilding of broken parts with welding. One simple job involving butt and lap joint.
03	<b>FITTING SHOP:</b> Demonstration of different fitting tools and drilling machines and power tools. Demonstration of different operations like chipping, filing, drilling, tapping, cutting etc. One simple fitting job involving practice of chipping, filing, drilling, tapping, cutting etc.
04	<b>PLUMBING SHOP:</b> Demonstration of different plumbing tools Demonstration of different operations in plumbing, observing different pipe joints and pipe accessories. Different samples of PVC pipes and PVC pipe fittings. One job on simple pipe joint with nipple coupling for standard pipe. Pipe threading using standard die sets.
05	<b>SHEET METAL SHOP:</b> Demonstration of different sheet metal tools / machines. Demonstration of different sheet metal operations like sheet cutting, bending, edging, end curling, lancing, soldering and riveting. One simple job involving sheet metal operations and soldering and riveting.

**Books:**

- S.K. Hajara Chaudhary- Workshop Technology-Media Promotors and Publishers, New Delhi
- B.S. Raghuwanshi- Workshop Technology- Dhanpat Rai and sons, New Delhi
- R K Jain- Production Technology- Khanna Publishers, New Delhi
- H.S.Bawa- Workshop Technology- Tata McGraw Hill Publishers,New Delhi
- Kent's Mechanical Engineering Hand book- John Wiley and Sons, New York

**Video Cassettes/ CDS**

- Electronics Trade & technology Development Corporation.(A Govt. of India undertaking)  
Akbar Hotel Annex, Chanakyapuri, New Delhi- 110 021
- Learning Materials Transparencies, CBT Packages developed by N.I.T.T.E.R. Bhopal.

**IS/ International Codes : Not Applicable**

**Course Name : Electronics Engineering Group**

**Course Code : ET/EJ/EN/EX/IE/IS/IC/DE/MU/EV**

**Semester : First**

**Subject Title : Basic Workshop Practice (Electronics Group)**

**Subject Code : --**

**Teaching & Examination Scheme:**

Teaching Scheme			Examination Scheme						
TH	TU	PR	PAPER HRS	TH	TEST	PR	OR	TW	TOTAL
1	--	4	--	--	--	--	--	25@	25

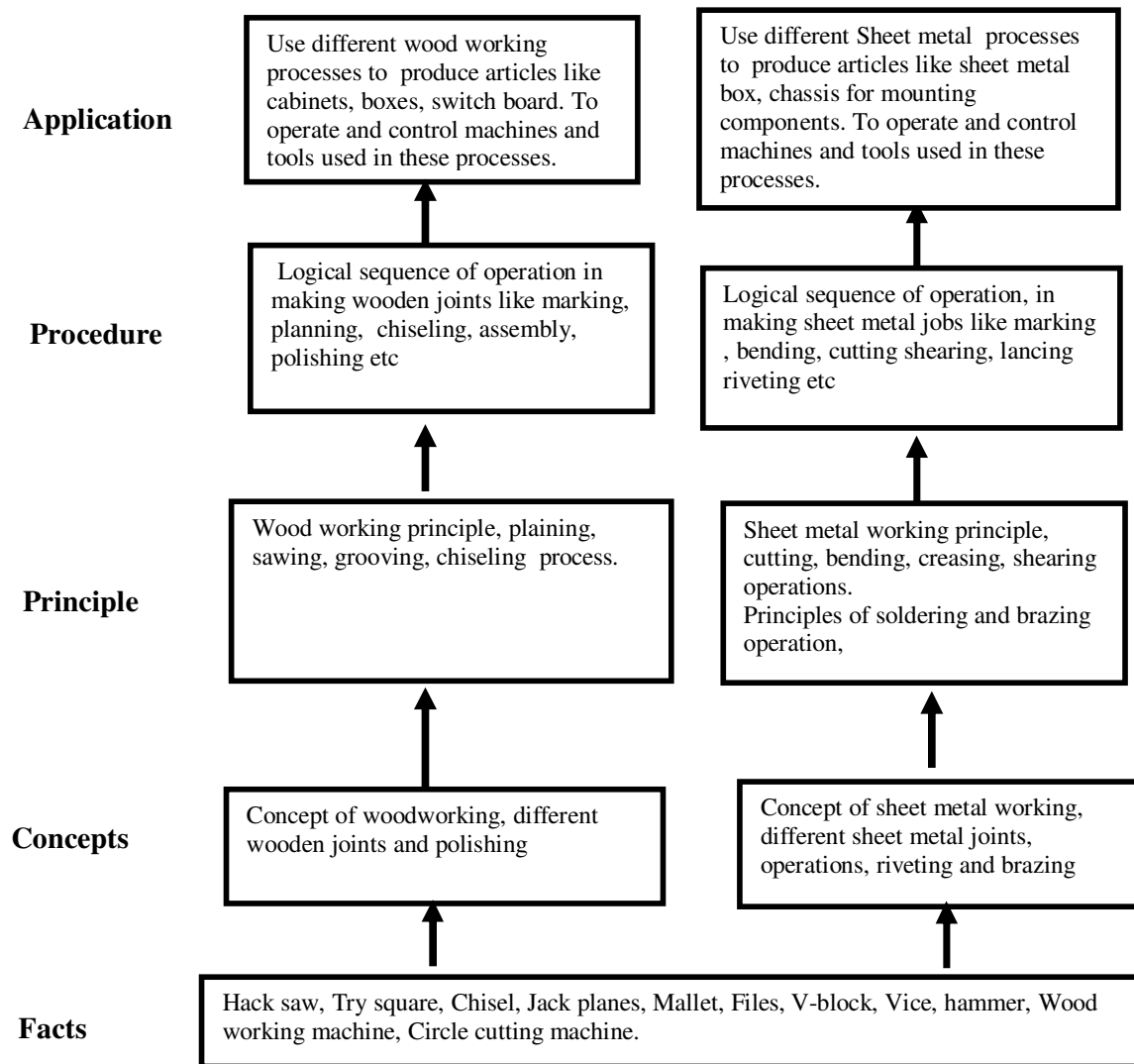
**RATIONAL:**

Electronics diploma technician is expected to know basic workshop practice like Wood working, Sheet metal and Fitting. The students are required to identify, operate and control various machines. The students are required to select and use various tools and equipments related to Wood working and sheet metal processes.

**OBJECTIVES:**

1. Read and interpret the drawing.
2. Draw sketch for given job.
3. Use manufacturers Catalog to prepare estimation of material required.
4. Use specification tables.
5. Decide Sequence of procedure.

## LEARNING STRUCTURE



## Contents: Theory

Sr.No.	Topic	Period
01	<b>CARPENTRY SHOP</b> 7. Introduction. 8. Various types of woods. 9. Different types of tools, machines and accessories.	05
02	<b>FITTING SHOP:</b> 18. Introduction 19. Various marking, measuring, cutting, holding and striking tools. 20. Different fitting operation like chipping, filing, right angle, marking, drilling, tapping etc. 21. Working Principle of Drilling machine, Tapping dies its use. 22. Safety precautions and safety equipments.	05
03	<b>SHEET METAL SHOP.</b> 16. Introduction 17. Various types of tools, equipments and accessories. 18. Different types of operations in sheet metal shop. 19. Soldering and riveting. 20. Safety precautions.	06
	<b>Total</b>	<b>16</b>

Skills to be developed developed:

### Intellectual Skills:

1. Ability to read job drawing.
2. Ability to identify and select proper material, tools, equipments and machine.
3. Ability to select proper parameters ( like cutting speed, feed, depth cut use of lubricants ) in machine.

### Motor Skills:

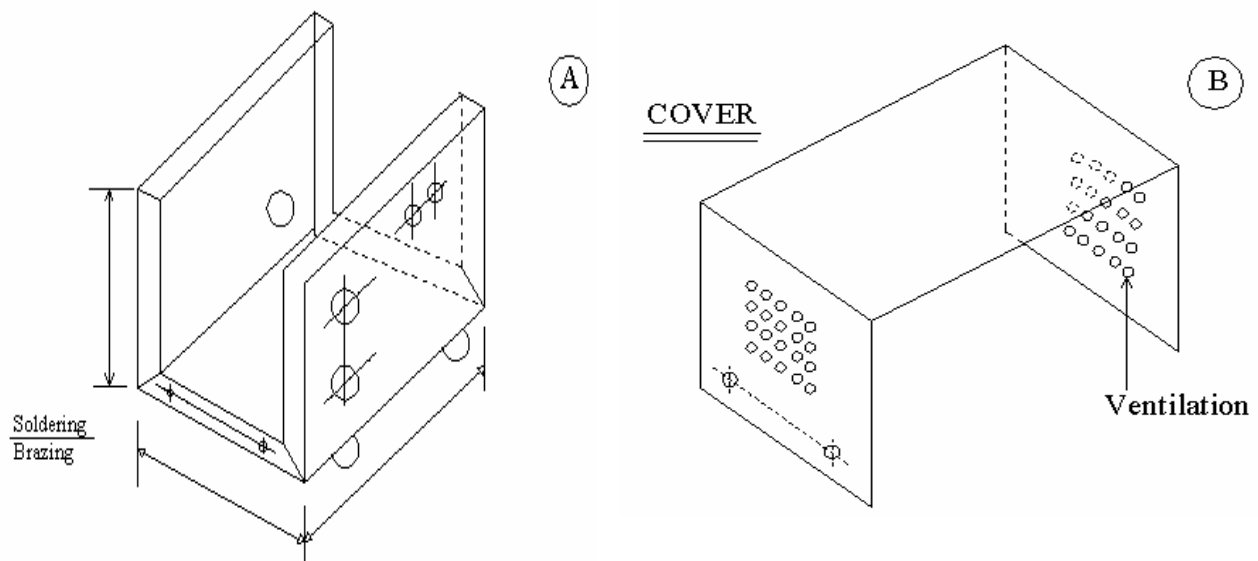
1. Ability to set tools, work piece, and machines for desired operations.
2. Ability to complete job as per job drawing in allotted time.
3. Ability to use safety equipment and follow safety procedures during operations.
4. Ability to inspect the job for confirming desired dimensions and shape.
5. Ability to acquire hands-on experience.

**Note: Details of on example job for each shop is given below:**

Sr. No.	Details Of Practical Contents
01	<p><b>WOOD WORKING SHOP:</b></p> <ul style="list-style-type: none"> <li>• Demonstration of different wood working tools / machines.</li> <li>• Demonstration of different wood working processes, like planing, marking, chiseling, grooving, turning of wood etc.</li> <li>• One simple job of preparing switch board or any other similar job</li> </ul>
02	<p><b>FITTING SHOP:</b></p> <ul style="list-style-type: none"> <li>• Demonstration of different fitting tools and drilling machines and power tools</li> <li>• Demonstration of different operations like chipping, filing, drilling, tapping, cutting etc.</li> <li>• One simple fitting job involving practice of filing, drilling, tapping, cutting etc. Such as Transistor Heat Sink or any other similar job</li> </ul>
03	<p><b>SHEET METAL SHOP:</b></p> <ul style="list-style-type: none"> <li>• Demonstration of different sheet metal tools / machines.</li> <li>• Demonstration of different sheet metal operations like sheet cutting, bending, edging, end curling, lancing , soldering and riveting.</li> <li>• One simple job involving sheet metal operations and soldering and riveting. Such as Battery Eliminator Box or any other similar job</li> </ul>

## 1) SHEET METAL WORK : BATTERY ELIMINATOR BOX

### CHASSIS



MATERIAL : C R C A sheet 22/24 SWG

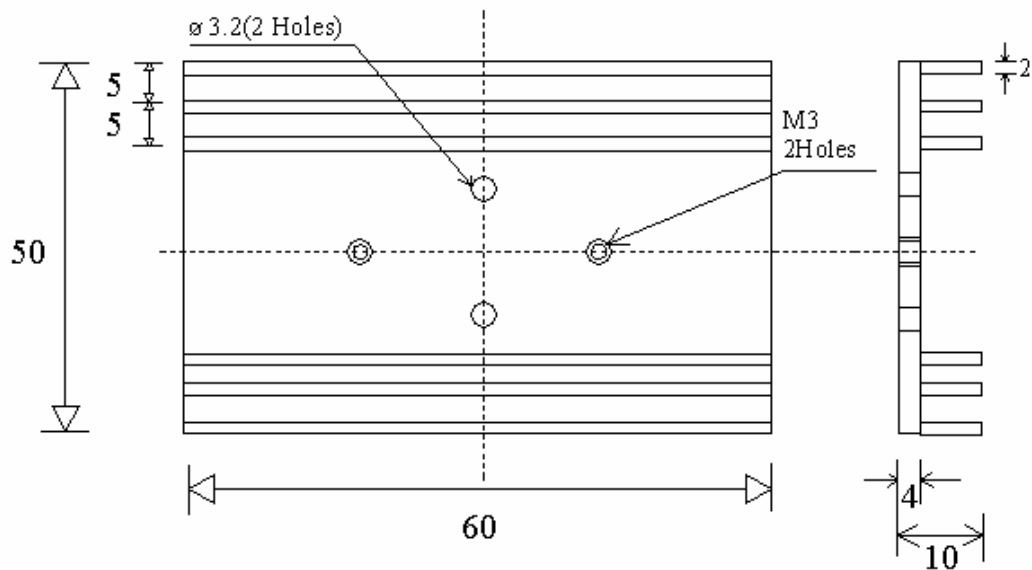
**\* TOOLS & EQUIPMENT:  
OPERATIONS :**

**SEQUENCE OF**

- 1) Steel Rule
- 2) Try square
- 3) Scriber
- 4) Spring Divider / Center Punch
- 5) Files
- 6) Shearing Machine / ship
- 7) Drilling Machine
- 8) Mallet
- 9) Hammer
- 10) Chisels
- 11) Hollow or solid punch
- 12) Hand Drill M/c
- 13) Drills in various sizes
- 14) Taps M3 & tap wrench
- 15) Bending M/c
- 16) Bench vice
- 17) Use various stakes
- 18) Number Punch
- 19) Blow lamp
- 20) Soldering iron

- 1) Development
- 2) Marking
- 3) Checking
- 4) Cutting
- 5) Deburring
- 6) Corner cutting
- 7) Drilling
- 8) Punching
- 9) Bending
- 10) Topping
- 11) Numbering
- 12) Finishing
- 13) Soldering / Brazing

**2) Fitting Work: Transistor Heat Sink**



**MAT : ALUMINIUM FLAT      SIZE : 50 X 65 X 10 mm**

**NOTE : ALL DIMENSIONS ARE IN MM  
TOLERANCE :  $\pm 0.3$  mm**

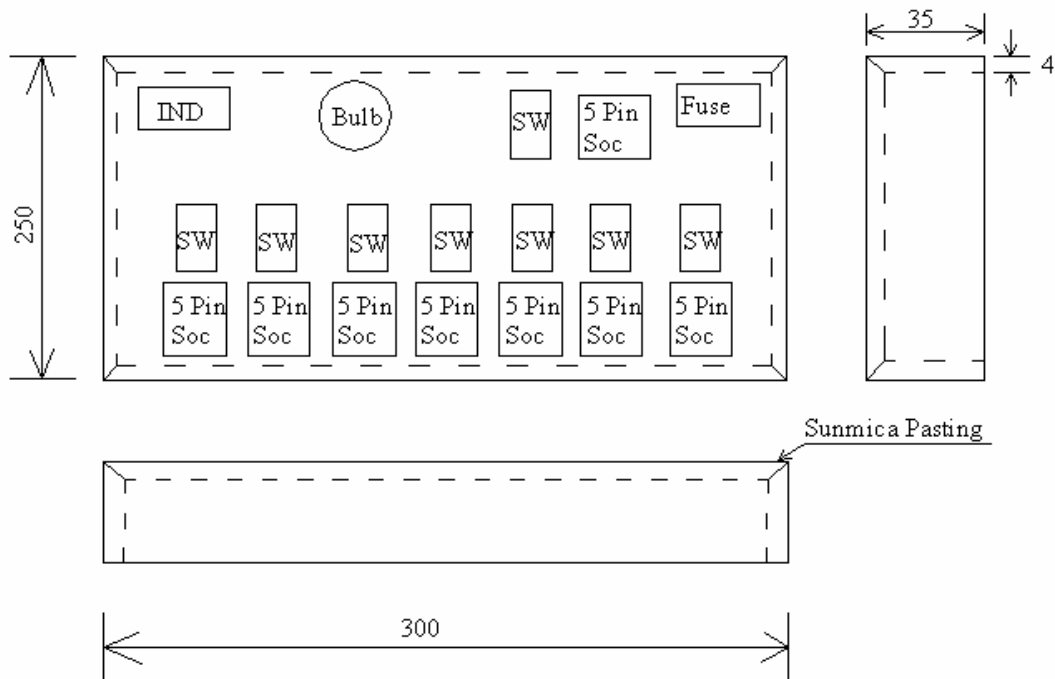
## TOOLS & EQUIPMENT

- 1) Steel Rule / Vernier caliper
- 2) Try square
- 3) Scriber
- 4) Bench Vice
- 5) Surface plate / with magnet block
- 6) Files, flat, square, Niddles
- 7) Marking Gauge
- 8) Marking Block / Height Gauge
- 9) Hacksaw frame
- 10) Center Punch
- 11) Hammer
- 12) Chisels Hat
- 13) Table Drill Machine (Bench)
- 14) Drills
- 15) Tap & Tap wrenches
- 16) Number Punch

## SEQUENCE OF OPERATIONS

- 1) Marking
- 2) Checking
- 3) Cutting
- 4) Square ness fitting (90')
- 5) Saw cutting
- 6) Chiseling / chipping
- 7) Slot filing
- 8) Drill Marking
- 9) Drilling
- 10) Tapping
- 11) Finishing
- 12) Numbering

### 3) Carpentry Work: Switch Box



MATERIAL

: TEAK WOOD AND SUNMICA, COMMERCIAL PLYWOOD

- |                                     |         |
|-------------------------------------|---------|
| SIZE : 1) 40 X 260 X 10 mm          | 02 Nos. |
| 2) 40 X 310 X 10 mm                 | 02 Nos. |
| 3) Sun-mica – 250 X 300 mm X 0.5 mm | 01 Nos. |
| 4) Plywood – 250 X 300 mm X 5 mm    | 01 Nos. |
| 5) Fevicol                          |         |
| 6) French Polish                    |         |

## TOOLS & EQUIPMENT

- 1) Steel Rule
- 2) Try square
- 3) Marking Gauge
- 4) Jack Plane
- 5) Hand Saw
- 6) Carpentry Vice
- 7) Wooden Mallet / Hammer
  
- 8) Firmer Chisel
- 9) Jig Saw Machine
- 10) Marfa file
- 11) Numbering

## SEQUENCE OF OPERATIONS

- 1) Measuring
- 2) Planning
- 3) Marking
- 4) Cutting
- 5) Chiseling
- 6) Corner joint with nail
- 7) Sun mica Pasting (Fevicolor similar adhesive)
- 8) Marking for slot cutting
- 9) Jig Saw cutting
- 10) Numbering
- 11) Polishing

### Learning Resources:

#### Books:

Sr. No.	Name of the Auther	Name of the Book	Publisher
01	S.K. Hajara Chaudhary	Workshop Technology	Media Promotors and Publishers, New Delhi
02	B.S. Raghuwanshi	Workshop Technology	Dhanpat Rai and Sons, New Delhi
03	R K Jain	Production Technology	Khanna Publishers, New Delhi
04	H.S.Bawa	Workshop Technology	Tata McGraw Hill Publishers, New Delhi
05	--	Kent's Mechanical Engineering Hand book	John Wiley and Sons, New York

Video Cassettes/ CDS

Learning Materials Transparencies, CBT Packages developed by NITTER Bhopal

**Course Name : Computer Engineering Group**

**Course Code : CO/CM/CD/IF**

**Semester : First**

**Subject Title : Basic Workshop Practice (Computer)**

**Subject Code :**

**Teaching and Examination Scheme:**

Teaching Scheme			Examination Scheme						
TH	TU	PR	PAPER HRS	TH	TEST	PR	OR	TW	TOTAL
01	--	04	--	--	--	--	--	25@	25

**RATIONALE:**

This subject is essential for creating awareness of computers for the students. It gives handling experience of computers to the students. It introduces basic components of computers and connecting them to the system.

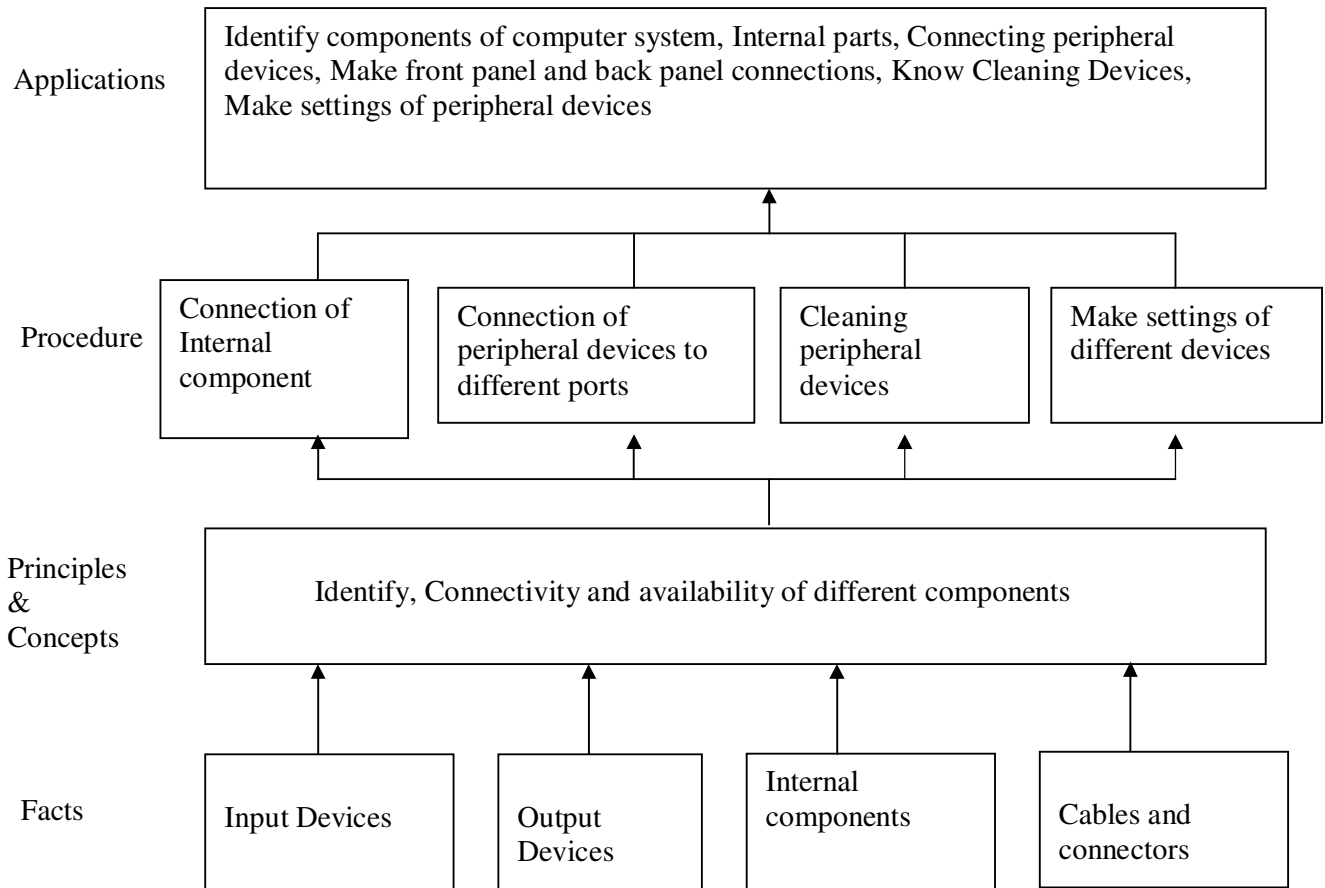
Since the dirt can affect reliability and Performance of various components, cleaning of components become one of the essential activity of basic maintenance. This subject demonstrates steps in cleaning and handling various components, handling problems with component connections. This subject gives the basic knowledge required for Pc architecture and maintenance.

**Objectives:**

After studying this subject, the student will be able to -

- Understand basic components of computers.
- Connect peripheral devices.
- Clean various devices like Keyboard, mouse, printers, motherboard.
- Park and eject the papers over the printer.
- Write Data on the CD.
- Scan documents and images.
- Understand front panel and back panel connections.
- Connection of Pen drives and DVD's

## LEARNING STRUCTURE



**CONTENTS: Theory**

<b>Sr. No</b>	<b>Topic/Subtopic</b>	<b>Hours</b>
<b>1.</b>	<b>Introduction to Various External Peripheral Devices</b> 1.1 Different types of keyboards 1.2 Different types of Mouse 1.3 Different types of Scanners 1.4 Different types of Modems 1.5 Different types of printers 1.6 CD writers, speakers, CD read /write drive 1.7 Microphones, LCD projectors, Pen drives, DVD drive 1.8 Different types of Monitors	<b>04</b>
<b>2.</b>	<b>Introduction to Various Internal Devices</b> 2.1 Different makes of hard disks 2.2 Different types of network Interface cards 2.3 Different types of cables such as data cables ,printer cables ,network cables ,power cables etc. 2.4 Different types of floppy disk 2.5 Motherboard connection 2.6 Graphics Card connection 2.7 Network Interface card connection	<b>05</b>
<b>3.</b>	<b>Physical Connections of different peripheral Devices</b> 3.1 Connection of Mouse to different ports 3.2 Connection of keyboards to different ports 3.3 Connection of Monitors 3.4 Connection of Printers 3.5 Different switch settings of printers 3.6 Printer's self test 3.7 Jumper settings of hard disks 3.8 Attaching FDD,HDD and CD drives 3.9 Attaching Pen Drives and DVDs 3.10 Attaching Scanners	<b>07</b>
<b>Total</b>		<b>16</b>

## ASSIGNMENTS:

1. Observe all the peripheral devices available in the lab. Describe them in detail.
2. Demonstration of system configuration using CMOS setup.
3. Study of different ports such as serial, parallel, PS/2, NIC ports.
4. Assignment on how to write data on CDs
5. Observe different printer settings on different types of printers available in your lab. Write down the function of each switch.
6. Demonstration of printer's self test.
7. Assignment on connection of speakers and microphones.
8. Assignment on different types of cables in your lab.
9. Assignment on cleaning procedures of Mouse, Keyboard and motherboard.
10. Assignment on how to connect scanner and scan document and pictures on the scanner available in your lab.
11. Assignment on making jumper settings on hard disk.
12. Assignment on different types of cards such as graphics card, LAN card, multimedia cards etc.

## Learning Resources:

### Books:

Sr. No.	Author	Title	Publisher
01	Mr. David Stone & Alfred Poor	Troubleshooting Your PC	Prentice Hall India
02	David Groth	A+ Complete	BPB Publication
03	Balasubramaniam	Computer Installation and servicing	Tata McGraw Hill
04	Manuals	Reference Manuals of PC troubleshooting and maintenance	--