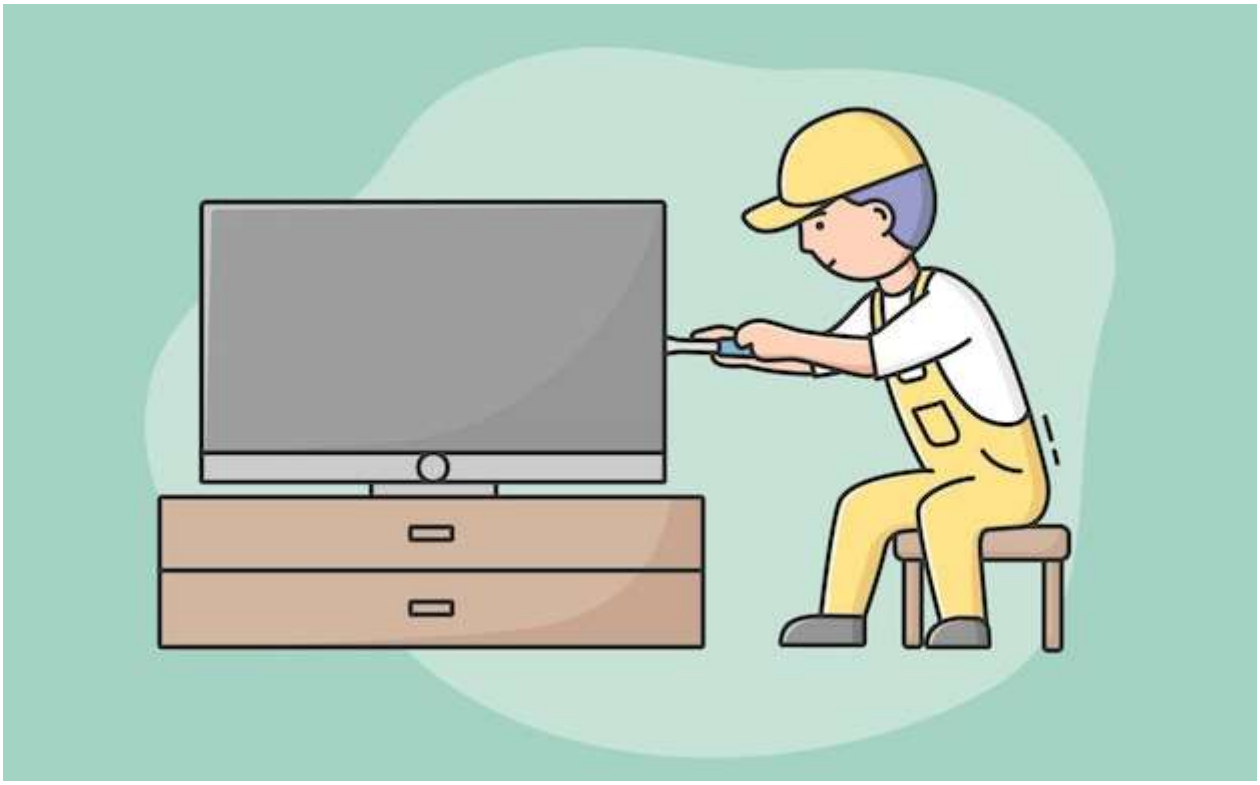
सूक्ष्म, लघु एवं मध्यम उद्यम मंत्रालय
DEVELOPMENT COMMISSIONER
MINISTRY OF MICRO, SMALL & MEDIUM ENTERPRISES
MSME TECHNOLOGY CENTRE

MODEL CURRICULUM



Qualification Name:

Technician - Audio Video Systems

Qualification Code:

Version: 2.0

NCrF/NSQF Level: 4

Model Curriculum Version: 2.0

Submitted By:

MSME TECHNOLOGY CENTRE

O/o DC MSME, Ministry of Micro, Small and Medium Enterprises

Govt. of India

A-Wing, 7th Floor, Nirman Bhawan, Maulana Azad road, New Delhi-110108

Contact No. +91-674-2654700,

Email-msmetcab@gmail.com

NOS / MODULE TEMPLATE

NOS /Module: STUDY ON BASIC ELECTRICAL/ELECTRONICS, SAFETY & HAND TOOLS -AV

NOS /Module Code: MSME/AV/01

Outcomes:

1. After completion of course Student should be able to:
2. Get knowledge about Safety and Safety Precautions.
3. Understand about different Electronic Component.
4. Understand different Measuring Instruments.
5. Understand different Semiconductor.

Theory Hours: 120 **Practical Hours: -** **Viva Marks: - NA** **Practical Marks: 100**

Unit No.	Unit Name	Unit level outcomes	Contents (chapters/topics)	TH ours	TH Marks
UNIT-I	Safety	At the end of this unit Student should be able to Understand about Safety. Understand How to use Basic Tools Get knowledge about safety precautions.	General safety precautions. Accidents Fire and Fire Accidents First Aid, Personal Protective Equipment (PPE) Selecting and using PPE. Maintenance of PPE. Monitor and review. Types of PPE. Emergency equipment. Basic hand tools Types of Screwdrivers Plier, Tweezers, Steel Rule, Scriber.	24	20
UNIT-II	Electronics Fundamentals	At the end of this unit Student should be able to Get Knowledge about voltage, current and Atom. Get Knowledge about electronic component. Understand about operating system of computer.	Matter, molecules, atom. Voltage and current. Voltage and current device. Process of Resistor, capacitor Basic units Basic of computer and its use	24	20

UNIT-III	Basic electronics	At the end of this unit Student should be able to Understand about Passive component. Understand how to use soldering and disordering Equipment's	Process of Inductors. Describe Conductor, insulator, wire. Describe the types of Power supplies. Process of Soldering, disordering equipment's.	24	20
UNIT-IV	Semiconductor	At the end of this unit Student should be able to Understand about different type of Semiconductors. Understand about diodes and rectifier	Semiconductor physics. Semiconductor diodes. Filters. Special purpose diodes Power supply	24	20
UNIT-V	Transistor and its application	At the end of this unit Student should be able to • Get knowledge about Active component. Understand about Emitter, collector and Base • How to measure transistor.	Types of transistor. BJT. FET. Identify transistor terminals. Applications of transistor.	24	20

NOS /Module: ADVANCE SKILL ENHANCEMENT ON TROUBLESHOOTING, ASSEMBLY, DISASSEMBLY, INSTALLATION & DEMONSTRATION ON RESPECTIVE PRODUCTS -AV

NOS /Module Code: MSME/ AV /02

Outcomes:

After completion of course Student should be able to:

1. Understand about Different types of TV, DVD Player and Home Theatre.
2. Understand about how to Install TV, DVD Player and Home Theatre.
3. Get knowledge about Features of TV, DVD Player and Home Theatre.
4. Get knowledge about Assembling and Disassembling Process.
5. Get knowledge about different Types of PBA parts for TV, DVD Player and Home Theatre.
6. Get knowledge about how to Fault Find and Troubleshoot of TV, DVD Player and Home Theatre.

Theory Hours: 30 **Practical Hours: 120** **Theory Marks: 100** **Practical Marks: NA**

Unit No.	Unit Name	Unit level outcomes	Contents (chapters/topics)	TH Hours	PR Hours
UNIT-I	Basic	Get knowledge about Electricity, AC and DC. Understand about Electronic Component and circuit. Get knowledge how to use Audio Video Tools Kit. Get knowledge how to work in Electrical and Electronic Equipment.	Introduction of basic electronics. About Electricity, Electronics. What is ohm's law, what is voltage, current, resistance? Series circuit and parallel circuit. Audio Video Standard Tools Kit: Repair & installation. About Multimeter, Rotary selector switch, sliding switch, Probes, Display, COM Plug, VΩ Plug, A Plug, DC Volt Range, DC Current Range, AC Volt Range, AC Current Range, Ohm Range, Frequency Range, Logic Range, Diode Range, Continuity. Measuring AC Volt, DC Volt, DC Current, AC Current, Checking Continuity, Frequency & Logic.	2	15
UNIT-II	Safety and Precautions	At the end of this unit Student should be able to Get knowledge about ESD, EPA. Understand about PBA and PCB. Understand about how to Generate Static current. Get knowledge about how to work in Electro Static Protected Area (EPA). Understand how to use electronics equipment with Safety Precautions.	Electrostatic Discharge Definitions of Electrostatic Discharge (ESD), Electrostatic Discharge Sensitive (ESDS), Electrostatic protected Area (EPA) What is Electrostatic Discharge (ESD), Charge is generated all the time, Electrostatic Charge generation, Damage Criteria, ESD comparison with germ Electrostatic Protected Area (EPA) Setup Methods of ESD Protection, Methods of	5	15

			Handling Printed Board Assembly (PBA)		
UNIT-III	Soldering and Disordering	At the end of this unit Student should be able to Understand about how to Electrical and Electronic Equipment. Understand about how to use electronics equipment (Soldering Station)	Basics of Soldering. What is Soldering, Soldering Tools, Disordering Tools, Soldering Methods Soldering Practice. Soldering Iron Usage Tips & Maintenance, Possible Soldering Defects.	5	10
UNIT-IV	Types of TV's	At the end of this unit Student should be able to Get knowledge about different types of TV. Get knowledge about different type of TV Technology.	Basic overview. Types of TV's, Basic terms & technology related to TV.	10	2
UNIT-V	CRT TV	At the end of this unit Student should be able to Get knowledge about CRT and how to work. Get knowledge about CRT TV Advantages and Disadvantages. Get Knowledge about color system	Technology Overview. What is Cathode Ray Tube, Advantages and Disadvantages, Color Transmission System, Health Concerns.	8	6
UNIT-VI	LCD TV	At the end of this unit Student should be able to Get knowledge about History of LCD and working Principle. Understand about Disassembly and Assembly Process. Get knowledge about different types of PBA parts. Get knowledge about wiring layout. Get knowledge about CCFL and Function.	At the end of this unit Student should be able to Get knowledge about History of LCD and working Principle. Understand about Disassembly and Assembly Process. Get knowledge about different types of PBA parts. Get knowledge about wiring layout. Get knowledge about CCFL and Function.	-	12
UNIT-VII	LED TV	At the end of this unit Student should be able to Get knowledge about LED and its Features. Understand about LED technology. Understand about Disassembly and Assembly Process. Get knowledge about different types of PBA parts. Get knowledge about wiring layout.	Technology Overview. What is LED, LED Backlighting, Features of LED backlit LCD TVs, How LED technology is used in LCD TVs, Full - Array vs. Edge Lit, Energy Consumption, How LED TV works. Disassembly Process. Assembling disassembling Process, Identification of parts	-	12

UNIT-VIII	PLASMA TV	At the end of this unit Student should be able to Get knowledge about plasma display. Understand about how to work with Plasma. Get knowledge advantages and disadvantages. Understand about Disassembly and Assembly Process. Get knowledge about different types of PBA parts. Get knowledge about wiring layout	Technology Overview Basic Theory of Plasma, History of Plasma Display, Basic concept of Plasma, what is plasma, inside a Plasma Display, How Plasma Displays Work, Advantages of Plasma T V, Disadvantages of Plasma TV. Disassembly Process. Assembling disassembling Process, Identification of parts .	-	12
UNIT-IX	Smart TV	At the end of this unit Student should be able to Get knowledge about Smart TV's features and Installation. Understand about Disassembly and Assembly Process. Get knowledge about Troubleshoot and Repeat Repairs. Get knowledge about how to Repair T -Con, LVDS, Main Board. Get knowledge about how to solve Liquid Log cases.	Joy Series & Curved TV: Installation& features. TV Model Nomenclature, installation process of Joy Series LED TV's and features, installation process for curved TV and features. Troubleshoot & How to reduce repeat repairs. Check list for initial operation, Troubleshooting. :No Power & No Video, Symptoms related to T -Con, LVDS, Main boards of LED TV, customer education, Awareness on liquid log cases, importance of tool adherence.	-	12
UNIT-X	DVD Player	At the end of this unit Student should be able to Get knowledge about Function, Structure of DVD. Audio and Video. Understand about Disassembly and Assembly Process and block diagram. Get knowledge about different types of DVD parts	Technology Overview. What is a DVD, Specifications of DVD, Advantages of DVD, and Structure of a DVD Disc, DVD Video and Audio Format? Troubleshoot Parts of a DVD Player. Block Diagram, Assembling a DVD Player	-	12
UNIT-XI	Home Audio	At the end of this unit Student should be able to Get knowledge about Basic of Home Theatre Surround Sound. Get knowledge about how to Install Home Theatre. Understand about Disassembly and Assembly Process. Get knowledge about wiring of Speaker and Block Diagram. Get knowledge about how to Troubleshoot.	Technology Overview. What is Home Theatre, Surround sound basics How to install? Speaker Set-up Guidelines, Wiring of Speakers Disassembly Process Block Diagram, Disassembly Troubleshoot& features Troubleshooting (No power, Disc loading error, Remote control doesn't work, No picture, Disc Freeze, No Disc reading error) , Home audio features , F/W method,	-	12

NOS /Module: ON JOB TRAINING (OJT)

NOS /Module Code: MSME/AV/03

Outcomes:

After completion of course Student should be able to

1. Understand about how to work with Team.
2. Understand about how to Behavior with customer.
3. Get knowledge about how to work as a Service Engineer
4. Get knowledge about how to work as a Demo Engineer.

THEORY HOURS: NA PRACTICAL HOURS: - THEORY MARKS: NA PRACTICAL MARKS: 100

Unit No.	Unit Name	Unit level outcomes	Contents (chapters/topics)	OJT hours
UNIT-I	On job training (OJT)	• At the end of this unit Student should be able to Get practical field knowledge. Trainees works in Samsung authorized service center and get practical skill and knowledge. Understand how to behavior with the customer Trainees helps to service engineer and get extra skill for repairing	Installation Demonstration servicing Repairing Troubleshooting	210

COURSES / MODULE TEMPLATE

NOS /Module: Employability Skill

NOS /Module Code: MSME/ES/01

THEORY HOURS: 30 PRACTICAL HOURS: - THEORY MARKS: 100 PRACTICAL MARKS: -

Refer Standard Curriculum developed by NCVET. (https://nqr.gov.in/downloads/pdfs/30-hours_MC_Employability_Skills.pdf)