<table>
<tr><td>1</td><td>Name of Syllabus</td><td>C.C.IN ELECTRONIC ASSEMBLY & T.V. MAINTENANCE (301101)</td></tr>
<tr><td>2</td><td>Max.Nos of Student</td><td>25 Students</td></tr>
<tr><td>3</td><td>Duration</td><td>6 Months</td></tr>
<tr><td>4</td><td>Type</td><td>Part Time</td></tr>
<tr><td>5</td><td>Nos Of Days / Week</td><td>6 Days</td></tr>
<tr><td>6</td><td>Nos Of Hours /Days</td><td>4 Hrs</td></tr>
<tr><td>7</td><td>Space Required</td><td>Workshop = 200 Sq feet
Class Room = 200 Sq feet
TOTAL = 400 Sq feet</td></tr>
<tr><td>8</td><td>Entry Qualification</td><td>S.S.C. Appeared</td></tr>
<tr><td>9</td><td>Objective Of Syllabus/ introduction</td><td>1) Knowledge of soldering techniques use of tools in assembly.
2) Knowledge of electronic competent used in Audio Radio field
3) Ability to read schematic layouts wring diagrams.
4) Awarreness of Safety precautions.
5) Maintenance of Audio – Radio equipment.</td></tr>
<tr><td>10</td><td>Employment Opportunity</td><td>Self Employment :- 1) Sub – Assembly contractor
2) Component sales & Service shop 3) Audio Tape library
Wage Employment :-
1) On line assembler of Electronic equipment in small scale and large scale Industries.
2) Testing of Sub – assemblies of Audio- Radio equipment.
3) Maintenance and repairs of simple fault in Radio Tape Recorder, VCR, Colour and B/W T.V Intercoms Two in one.
4) Assistance in Maintenance of Audio and Radio equipment in Laboratory and field.
5) Instillation operation of Audio- Radio equipment in conference hall hotels, mobile yarn.</td></tr>
<tr><td>11</td><td>Teacher’s Qualification</td><td>1) Licentiate in Radio – Audio Servicing or
2) Radio Servicing Cold casser or
3) Radio Electronic Mechanic of ITI or
4) dip in Audio Video Engineering.
Dip. or Degree in Electronic or equivalent profession Qualification.
EATSM with 3 year experience in Electronic Field Teaching</td></tr>
<tr><td>12</td><td>Training System</td><td>Training System Per Week
<table>
<tr><td>Theory</td><td>Practical</td><td>Total</td></tr>
<tr><td>6 Hours</td><td>18 Hours</td><td>24 Hours</td></tr>
</table></td></tr>
<tr><td>13</td><td>Exam. System</td><td>
<table>
<tr><th>Sr. No.</th><th>Paper Code</th><th>Name of Subject</th><th>TH/PR</th><th>Hours</th><th>Max. Marks</th><th>Min. Marks</th></tr>
<tr><td>1</td><td>30110111</td><td>Basic Electronics & Assembly Technique</td><td>TH-1</td><td>3 hrs</td><td>100</td><td>35</td></tr>
<tr><td>2</td><td>30110112</td><td>Communication System</td><td>TH-2</td><td>3 hrs</td><td>100</td><td>35</td></tr>
<tr><td>3</td><td>30110121</td><td>Basic Electronics & Assembly Technique</td><td>PR-1</td><td>3 hrs</td><td>100</td><td>50</td></tr>
<tr><td>4</td><td>30110122</td><td>Communication System</td><td>PR-2</td><td>3 hrs</td><td>100</td><td>50</td></tr>
<tr><td></td><td></td><td>TOTAL</td><td></td><td></td><td>400</td><td>170</td></tr>
</table></td></tr>
</table>

Theory I - Basic Electronics & Assembly Technique

1. Introduction to Tools & Soldering Techniques.
   Study of various screw drives, cutter, nose pliers, wire stripeer, solder sire coldering iron flux PCB, Solder bath multmeters.
2. Basic Electronics :
   Conductor, Insulator Semiconductor AC and DC source units of resistance current. voltage & power measurement of AC wave form in RMS peak & average value Ohms law series & parallel circuits, working and use of voltmeters, current meters, chms meters.
3. Discrete Components :
   i) Different types of resistors & their colourcode and units Series parallel circuits testing of the resistors.
   ii) Different types of capacitors their units voltage ratings and testing Series and parallel capacitors and their AC & DC operations.
   iii) Coils, transformers, self inductance, mutual inductance & their units RLC circuits Response Principle of transformer, working of set up and step down transformer. Type in Audio IF, RF, and power transformer, line output transformer, linearity coil, luminance & dominance delay line be socket Monochrome and colour monitor & picture tubes.
4. Transducer
   Microphones Loudspeakers, Photocell Laser diodes, Telephone.

5. Semiconductor devices & their application :
   P & N material function diode testing of diode half wave full wave rectification diode as detector, PNP – NPN transistor, DC operation of transistor CB, CC & CE amplifier classes of amplifier oscillator, tuned amplifier, IC amplifier regulated power supply , IC regulated power supply.

Theory II - Communication System

6. A) Communication
   Sound Radio Frequency, carrier wave, Introduction to modulation (Amplitude & frequency) Block diagram of A.M radio transmitter, Line of Sight transmission of monochrome & colour TV compatibility Block diagram of monochrome TV transmitter.
   B) Principle of superhetrodyne, Block diagram of superheat receiver, Block diagram of Radio Receiver, Circuit diagram of radio receiver, working principle & fault finding procedures, Fault finding in Amplifiers (Hi Fi) public address systems, stereo amplifier.
   C) Block diagram of colour TV receiver function of each block and circuit diagram, basic procedure of fault finding in monochrome TV and monochrome monitor.
   D) Block diagram of colour TV receivers, circuit of croma video amplifier, Basic procedure of fault finding in colour TV and colour monitor.

7. Installation
   Need of antenna, type of antenna used in TV installation, cable TV & MATV with booster splitter etc. Installation of TV, connection of V.C.R electronic games. Home computer to TV 90 channel their ckt cable modem.
8. Electronic Systems :
   Block diagram of cassette tape recorder, V.C.R. & CD player basic fault finding procedure.

9. Test Equipment :

Study of Analog and Digital multimeter, Oscilloscope, Frequency counter pattern generators Function generators, Wobbuloscope.

Practical I - Basic Electronics & Assembly Technique

1 Study of soldering Techniques.
2 Study of Single stage amplifier with fault finding.
3 Study of Milimeters.
4 Study and Testing of Components.
5 Testing of Diodes & Transistors.
6 Study of special components in Radio, Tape recorder VCR & CD Telephone Monochrome and colour TV.
7 Study of Oscillator.
8 Study the layout of (Radio VCR,CD)
9 Study the Telephone Systems

Practical II - Communication System

10 Tracing & Fault finding in Radio (Minium 15 faults)
11 Tracing & Fault Finding in Tape recorder (Minium 15 faults)
12 Tracing & Fault finding in Monochrome TV (Minium 15 faults)
13 Tracing & Fault finding in Monochrome monitor (Minium 2 faults)
14 Tracing & Fault finding in Colour TV in Croma & Video section only (Minium 8 faults)
15 Tracing & Fault finding in colour monitor (Minium 2 faults)
16 Tracing & Fault finding in VCR (Minium 5 faults)
17 Tracing & Fault finding in CD Player (Minium 3 faults)

Note : 1 From the above list
20 table experiments
30 tracing experiments
30 fault finding experiments in which minimum 60 faults
2. In continuous assessment under the head awareness on simple assembly with its write up Individual minin projects.

Guidelines for Theory Paper

1. No question on calculation or designing.
2. Questions should be practical oriented.
3. Question No 1 is compulsory objective type based on entire syllabus .
4. Each question should have 2/3 sub questions.
5. 2 question on circuits (Radio/ Tape and Black & White TV/ Colour TV)
6. 2 question on General Electronics (1 to 5 topics)
7. 1 question on (6 A , B topics).
8. 2 questions on (6C,D topics).
9. 1 question on (topic 7).
10. 1 question on (topic 8)

List of Tools Equipment :

Sr No	Description of Tools/ Equipments	No/ Required
1	Transistor Radio	10
2	Low Power Audio Amp.	2
3	Tape Recorder	1
4	Low Voltage Power Supply	2
5	Multimeter (low sensitivity)	28
6	Multimeter (High sensitivity 20 KZ/V)	1
7	Record player	1
8	R.F. Signal Gen	1
9	Two in one (Radio + Tape)	1
10	Oscilloscope	1
11	Sterio Amp	1
12	Other Components. Accessories material as per laboratory equipment	-
	Furniture	
13	11/2 X 4 Table	
14	Small Cupboard	
15	Stool	
16	Black Board	
	Desirable – for video casset demonstration	
	i) Video Cassette Player	
	ii) Colour T.V.	

9) Teacher's Qualification and experience, Staff.
Two person – One Instructor/ Demonstrator

Reference Book

A)

i)	Practical Transistar Radio Servicing – by R.C Vijay
ii)	Cassette Tape Recorder Servicing – by R.C. Vijay
iii)	Basic Radio and Television – by S.R. Sharma
iv)	Electronic Technicials Handbook – by Cafule A Grads Russi Terpoori
v)	Stereo Amplifiere – by Nishinak Tata Mc

B) Video Cassettese

1) Fundamental of Electricity I and II
2) Safety in Electrical Wor
3) Multimeter
4) Know your oscilloscope
5) Waves
6) Transformer
7) Junction Doide
8) Semi Condieter I,II,III

****