

# **Course Curricula**

**for**

**Short Term Courses based on  
Modular Employable Skills (MES)**

**in**

# **Painting Sector**



**DIRECTORATE GENERAL OF EMPLOYMENT AND TRAINING  
MINISTRY OF LABOUR & EMPLOYMENT  
GOVERNMENT OF INDIA**

**Course Curricula for Short Term Courses based on Modular  
Employable Skills (MES) in the Painting Sector**

**CONTENTS**

1. Background.....	2
2. Frame Work for Skill Development based on Modular Employable Skills .....	2
3. Age of Participants.....	3
4. Curriculum Development Process .....	3
5. Development of Core Competencies.....	3
6. Duration of the Programmes.....	4
7. Pathways to acquire Qualification .....	4
8. Methodology .....	5
9. Instructional Media Packages.....	5
10. Assessment .....	5
11. Certificate.....	5
12. Course Matrix.....	6
13. Modules .....	7
14. Painter Assistant/helper.....	7
15. Wall Painter.....	8
16. Wood Painter .....	11
17. Metal Surface Painter .....	14
18. Spray Painter.....	15
19. Painter(Application, Tests, Handling and Storing.....	17
20. List of Expert/Trade Committee Members.....	19

## Skill Development based on Modular Employable Skills (MES)

### Background

---

The need for giving emphasis on the Skill Development, especially for the less educated, poor and out of school youth has been highlighted in various forums. The skill level and educational attainment of the work force determines the productivity, income levels as well as the adaptability of the working class in changing environment. Large percentage of population in India is living below poverty line. One of the important causes is lower percentage of skilled persons in the workforce

The skill development at present is taking place mostly in the informal way, i.e. persons acquire skill at the work-place when they help their parents, relatives and employers etc. Such persons do not have a formal certificate and thus earn lower wages and are exploited by employers. They have come through informal system due to socio-economic circumstances of the family and the compulsions of earning a livelihood rather than attending a formal course. While their productivity is low, their contribution to the national GDP cannot be ignored. If the country can create a system of certification which not only recognizes their skills but also provides education and training in a mode that suits their economic compulsions, it will not only benefit the workforce to earn a decent living but also contribute to the national economy by better productivity of this workforce.

Another related problem to be tackled is large number of students drop outs (About 63% of the school students drop out at different stages before reaching Class-X).

### Frame work for Skill Development based on 'Modular Employable Skills (MES)'

---

Very few opportunities for skill development are available for the above referred groups (out of school youth & existing workers especially in the informal sector). Most of the existing Skill Development programmes are long term in nature. Poor and less educated persons can not afford long term training programmes due to higher entry qualifications, opportunity cost etc. Therefore, a new frame work for Skill Development for the Informal Sector has been evolved by the DGET to address to the above mentioned problems. The **key features of the new frame work for skill development** are:

- ◇ Demand driven Short term training courses based on modular employable skills decided in consultation with Industry
- ◇ Flexible delivery mechanism (part time, weekends, full time)
- ◇ Different levels of programmes (Foundation level as well as skill upgradation) to meet demands of various target groups
- ◇ Central Government will facilitate and promote training while Vocational Training (VT) Providers under the Govt. and Private Sector will provide training
- ◇ Optimum utilisation of existing infrastructure to make training cost effective.
- ◇ Testing of skills of trainees by independent assessing bodies who would not be involved in conduct of the training programme, to ensure that it is done impartially.
- ◇ Testing & certification of prior learning (skills of persons acquired informally)

The Short Term courses would be based on 'Modular Employable Skills (MES)'.

The **concept for the MES** is :

- Identification of 'minimum skills set' which is sufficient to get an employment in the labour market.
- It allows skills upgradation, multiskilling, multi entry and exit, vertical mobility and life long learning opportunities in a flexible manner.
- It also allows recognition of prior learning (certification of skills acquired informally) effectively.
- The modules in a sector when grouped together could lead to a qualification equivalent to National Trade Certificate or higher.
- Courses could be available from level 1 to level 3 in different vocations depending upon the need of the employer organisations.
- MES would benefit different target groups like :
  - Workers seeking certification of their skills acquired informally
  - workers seeking skill upgradation
  - early school drop-outs and unemployed
  - previously child labour and their family

### **Age of participants**

---

The minimum age limit for persons to take part in the scheme is 14 years but there is no upper age limit.

### **Curriculum Development Process**

---

Following procedure is used for developing course curricula

- Identification of Employable Skills set in a sector based on division of work in the labour market.
- Development of training modules corresponding to skills set identified so as to provide training for specific & fit for purpose
- Organization of modules in to a Course Matrix indicating vertical and horizontal mobility. The course matrix depicts pictorially relation among various modules, pre requisites for higher level modules and how one can progress from one level to another.
- Development of detailed curriculum and vetting by a trade committee and by the NCVT

(Close involvement of Employers Organizations, State Governments, experts, vocational training providers and other stake holders is ensured at each stages).

### **Development of Core Competencies**

---

Possession of proper attitudes is one of the most important attribute of a competent person. Without proper attitudes, the performance of a person gets adversely affected. Hence, systematic efforts will be made to develop attitudes during the training programme.

The trainees deal with men, materials and machines. They handle sophisticated tools and instruments. Positive attitudes have to be developed in the trainees by properly guiding them

and setting up examples of good attitudes by demonstrated behaviors and by the environment provided during training.

Some important core competencies to be developed are:

1. Safety consciousness and safe working practices
2. Care of equipment and tools
3. Punctuality, discipline and honesty
4. Concern for quality
5. Respect for rules and regulations
6. Concern for health and hygiene
7. Cordial relationship and Cooperation with co-workers and team Work
8. Positive attitude and behavior
9. Responsibility and accountability
10. Learn continuously
11. Communication Skills
12. Concern for environment and waste disposal

Following competencies should also be developed during level-II and higher courses:

1. Ability for planning, organizing and coordinating
2. Creative thinking, problem solving and decision making
3. Leadership
4. Ability to bear stress
5. Negotiation

### **Duration of the Programmes**

---

Time taken to gain the qualification will vary according to the pathway taken and will be kept very flexible for persons with different backgrounds and experience. Duration has been prescribed in hours in the curriculum of individual module, which are based on the content and requirements of a MES Module. However, some persons may take more time than the prescribed time. They should be provided reasonable time to complete the course.

### **Pathways to acquire Qualification:**

---

**Access to** the qualification could be through:

- An approved training programme; **Or**
- A combination of an approved training programme plus recognition of prior learning including credit transfer; **Or**
- The recognition of prior learning that provides evidence of the achievement of the competencies for the qualification.

## **Methodology**

---

The training methods to be used should be appropriate to the development of competencies. The focus of the programme is on “performing” and not on “Knowing”. Lecturing will be restricted to the minimum necessary and emphasis to be given for ‘hands on training’.

The training methods will be individual centered to make each person a competent one. Opportunities for individual work will be provided. The learning process will be continuously monitored and feedback will be provided on individual basis.

Demonstrations using different models, audio visual aids and equipment will be used intensively.

## **Instructional Media Packages**

---

In order to maintain quality of training uniformly all over the country, instructional media packages (IMPs) will be developed by the National Instructional Media Institute (NIMI), Chennai.

## **Assessment**

---

DGE&T will appoint assessing bodies to assess the competencies of the trained persons. The assessing body will be an independent agency, which will not be involved in conducting the training programmes. This, in turn, will ensure quality of training and credibility of the scheme. Keeping in view the target of providing training/testing of one million persons through out the country and to avoid monopoly, more than one assessing bodies will be appointed for a sector or an area.

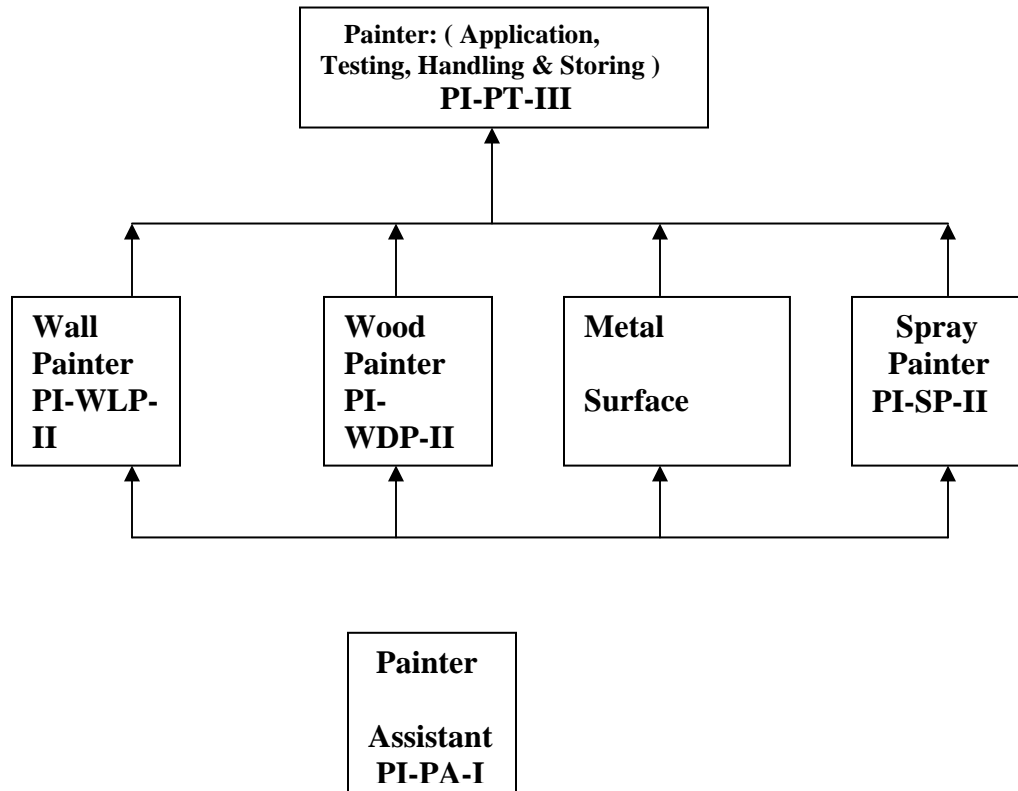
## **Certificate**

---

Successful persons will be awarded certificates issued by National Council for Vocational Training (NCVT).

## Course Matrix

### Course Module for Painting



1. **Name of Module** : **Painter Assistant /Helper**
2. **Sector** : **Painting**
3. **Code** : **PAI 101**
4. **Entry qualification** : 5<sup>th</sup> Standard and 14 years of age.
5. **Terminal Competencies** : After completion of training, the trainee should be able to-
- 1) Identify materials, tools and equipment required for various types of painting and polishing of different surfaces.
  - 2) Prepare basic surfaces (wall, metal & wood) for painting and polishing.
  - 3) Handle waste disposal & manage House keeping, health & safety at work place.
6. **Duration** : **90 Hrs.**
7. **Course Contents**

<b>Practical Competences</b>	<b>Underpinning Knowledge (Theory)</b>
<ul style="list-style-type: none"> <li>• Use of protective clothing and equipment and carry out safe working practices.</li> <li>• Apply good house keeping practices, proper handling of materials and waste disposal.</li> <li>• Identify and familiarise with tools &amp; equipments used in painting.</li> <li>• Identify and familiarise with various types of raw materials used in painting e.g. Paints, Putty, Varnishes etc.</li> </ul>	<p>Paint Industry in India. Importance of painting, painter &amp; related works.</p> <p>Health and safety precautions, safe working practices.</p>
<ul style="list-style-type: none"> <li>• Use of tools, equipments used for painting.</li> <li>• Upkeep, care &amp; maintenance of tools &amp; equipments.</li> </ul>	<p>Tools &amp; Equipment used in painting technique, their specifications &amp; quality. Various types of Putty, primer, paints, varnishes generally used for painting applications and their quality.</p>
<ul style="list-style-type: none"> <li>• Familiarization with various types and conditions of painting surfaces e.g. wall, wood &amp; metal etc.</li> <li>• Prepare basic surfaces: wall, metal and wood for good painting work.</li> </ul>	<p>Importance of using proper tools &amp; equipments.</p>
<ul style="list-style-type: none"> <li>• Apply putty, paint varnishes and polish to the different surfaces by using proper application sequence.</li> </ul>	<p>Systematic use of various types of painting tools &amp; equipment, spray guns, ford cup sets.</p>
<ul style="list-style-type: none"> <li>• Field visits to locations where painting is going on.</li> </ul>	<p>Necessity and type of help to Painter by Helper. Waste disposal at work places. Behavior at work place. Customer &amp; their expectations while painting.</p>



1. **Name of Module** : **Wall Painter**
2. **Sector** : **Painting**
3. **Code** : **PAI 202**
4. **Terminal Competencies** : After completion of training, the trainee should be able to-
- 1) Prepare wall surfaces for distempering & painting.
  - 2) Mix paint for wall painting
  - 3) Paint walls and ceiling.
5. **Duration** : 120 Hrs.
6. **Entry qualification** : 5<sup>th</sup> Passed & 14<sup>th</sup> years of age.+ **PAI 101**
7. **Course Contents** :

Days	Practical	Theory
1	<ul style="list-style-type: none"> <li>• Use of protective clothing and equipment and carry out safe working practices.</li> <li>• Apply good house keeping practices, proper handling of materials and waste disposal.</li> <li>• Preparing surfaces of wall and ceiling, cleaning rough surfaces for distempering, practice of in use of nail brushes, Iron hie, chiseling, rubbing by Emery &amp; Brushes.</li> <li>• Putty preparation, Mixing of putty, different process of making putty and use of putty on different surfaces.</li> </ul>	<ul style="list-style-type: none"> <li>• Health and safety precautions, safe working practices and waste disposal at work place.</li> <li>• Painters equipment such as ladder, step scaffolding, trestle, buckets etc., their description &amp; uses.</li> <li>• House keeping – good practice, quality aspects of paints. Behavioral etiquette.</li> <li>• Description, use, care &amp; maintenance of hand tools, brushes of various sizes, diamond glazier, stopping knife, scrapers, pallet knife, chisel knife, shave hook, plumb line, lining tool, rule file etc.</li> </ul>
2	<ul style="list-style-type: none"> <li>• Colour blending by mixing various paints and colour making, distempering walls, relief painting and texturing of walls &amp; ceiling.</li> <li>• Testing of colour preceptions.</li> </ul>	<ul style="list-style-type: none"> <li>• Putty: definition, types, uses, method of mixing &amp; different methods of applications.</li> <li>• Description of Tools, equipments used for mixing with safety measures.</li> </ul>
3	<ul style="list-style-type: none"> <li>• Preparation of desired shades by tinting of water based &amp; solvent based paint with universal tinters.</li> <li>• Mixing schemes/computer generated colours.</li> </ul>	<ul style="list-style-type: none"> <li>• Paint: definition, classification &amp; uses. Method of selection, application, preparation techniques, mixing of ingredients, various types, their purposes and effect on paints.</li> </ul>

4	<ul style="list-style-type: none"> <li>• Painting by brushes of walls and ceiling of a building, office building/ workshop building inside &amp; outside by water based paint/solvent based paint.</li> </ul>	<ul style="list-style-type: none"> <li>• Purpose of cleaning of wall surfaces and their effects. Processes of cleaning, different methods of cleaning, water proofing, precautions and uses. Building painting by brushes, their defects &amp; remedies.</li> </ul>
5	<ul style="list-style-type: none"> <li>• Painting of walls of residential houses with oil colours.</li> <li>• Colouring of doors, windows&amp; fittings.</li> </ul>	<ul style="list-style-type: none"> <li>• Surface preparation for oil painting of wall, painting faults &amp; their remedies.</li> <li>• Introduction of wall painting by roller.</li> <li>• Calculation of the amount of paint needed for the jobs and its cost evaluation.</li> </ul>

## LIST OF TOOLS AND EQUIPMENT

### EQUIPMENT (For a batch of 20 Participants)

<u>Sl.No.</u>	<u>Description</u>	<u>Quantity</u>
1.	Ford cup No.4	one set
2.	Chequer sheet (for testing capacity)	40 sheets
3.	Standard colour shake card IS:5	2 nos.
4.	Colourblind test Booklet	4 nos.
5.	Mask gloves, goggles, personal safety equipment item	20 set
6.	Brushes (size – 2 inch)	20 pcs.
7.	Thermometer – 0 to 110° C)	2 nos.
8.	Beakers/Mug – 500 ml.	20 nos.
9.	Measurer cylinder (100 ml.)	2 nos.
10.	Spatula	20 nos.
11.	Nail Brush	05 nos.
12.	Iron Hig	05 nos.
13.	Emery paper (320 & 400)	10 each
14.	Empty 1 liter. Containers	40 pcs.
15.	Cloth (Rag)	as required
16.	Brush - distemper – 25 mm	10 pcs.
17.	Brush – Dusting	5 pcs.
18.	Brush – white wash	10 pcs.
19.	Stopping knife	10 pcs.
20.	Plalte knife	10 pcs.
21.	Chisel knife	10 pcs.
22.	Shave hook	20 pcs.
23.	Knife put glazier	10 pcs.
24.	Ladder	1 no.
25.	Scaffolder	1 no.
26.	Trestle painter with stools	20 nos.
27.	Buckets (20 ltr.)	5 nos.
28.	Gun spray with gravity feed cup with accessories with portable Air Compressor	2 nos.
29.	Airless Spray Gun with accessories	2 nos.

30.	Pressure feed container 20 ltr. capacity	2 nos.
31.	Spray Booth	2 nos.

**MATERIALS (For a batch of 20 participants)**

<u>Sl.No.</u>	<u>Description</u>	<u>Quantity</u>
1.	Wall putty	4 kg.
2.	Wall Primer	4 kg.
3.	P.U. Coatings	2 kg.
4.	Melamine coatings	2 kg.
5.	Exterior Enamel white-2	2 ltr.
6.	Interior Enamel white-2	2 ltr.
7.	Cement primer water based	2 kg. each
8.	Cement primer solvent based	2 kg. Each
9.	Thinner/Turpentine	2 ltr. each
10.	Wood primer	4 kg.
11.	Acrylic Emulsion paint – white	4 kg.
12.	Oil bound/Acrylic distemper – white	4 kg.
13.	Water based stainers (colour concentrate) (Red, yellow blue Green)	200 ml. Each
14.	Solvent based stainer (colour concentrate) (Red, yellow, blue Green)	200 ml. Each
15.	M.T.O. /Turpentine	10 ltrs.

1. **Name of Module** : **Wood Painter**
2. **Sector** : **Painting**
3. **Code** : **PAI 203**
4. **Terminal Competencies** : After completion of training, the trainee should be able to-
  - 1) Prepare wooden surfaces for varnishing, polishing and painting.
  - 2) Apply putty & primer
  - 3) Varnishing, polish and paint wooden surfaces.
5. **Duration** : **180 Hrs.**
6. **Entry qualification** : **5<sup>th</sup> Passed & 14<sup>th</sup> years of age +PAI 101**
7. **Course Contents:**

Day	Practical	Theory
1	<ul style="list-style-type: none"> <li>• Use of protective clothing and equipment and carry out safe working practices.</li> <li>• Apply good house keeping practices, proper handling of materials and waste disposal.</li> <li>• Demonstration &amp; Practicals on use of various techniques on wood such as cleaning, rubbing down, knotting, stopping, filling.</li> <li>• Prepare wood surface.</li> </ul>	<ul style="list-style-type: none"> <li>• Health and safety precautions, safe working practices and waste disposal in Paint handling at work place.</li> <li>• Description of Equipment for mixing, wood problems associated with painting of different types of woods.</li> <li>• Testing of different types of varnishes, painters equipments: ladder, buckets etc.</li> <li>• Painter hand tools brushes, diamond glazier, knives, lining tools etc. Use, care &amp; maintenance.</li> </ul>
2	<ul style="list-style-type: none"> <li>• Preparing of surfaces on wood for varnishing, polishing &amp; finishing of doors, windows, partitions of rooms etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Introduction of Paint, Painter &amp; painting General aspect, Scope of the work importance.</li> </ul>
3	<ul style="list-style-type: none"> <li>• Putty preparation</li> <li>• Mixing by different process</li> <li>• Use of putty on different wooden surfaces</li> </ul>	<ul style="list-style-type: none"> <li>• Varnishes – various methods of preparation, types of varnishes.</li> <li>• Oils, driers, resins, solvents &amp; thinner classification &amp; uses.</li> </ul>
4	<ul style="list-style-type: none"> <li>• Finishing, varnishing &amp; polishing of wood furniture eg. Chair, table, almirahs, trays etc., old &amp; new.</li> </ul>	<ul style="list-style-type: none"> <li>• Wood stainer, classification and Methods of application.</li> </ul>
5 6	<ul style="list-style-type: none"> <li>• Varnishing of wooden surfaces. Painting of wooden furniture doors, windows etc. by brushes various types.</li> <li>• Polishing and finishing wooden furniture doors, windows etc by spirit, lacquer, melamine, poly Urethane.</li> </ul>	<ul style="list-style-type: none"> <li>8. Behavioral etiquette.</li> <li>• Calculation for quantity of paint required, costing &amp; evaluation.</li> </ul>

## LIST OF TOOLS AND EQUIPMENT

### EQUIPMENT (For a batch of 20 Participants)

<u>Sl.No.</u>	<u>Description</u>	<u>Quantity</u>
1.	Brush (varnish) 25 mm oval bevelled	8 nos.
2.	Brush round 9 mm. Paint or varnish	8 nos.
3.	Brush Hog Hair pitch	8 nos.
4.	Brush flat 12 mm	8 nos.
5.	Brush Dusting	8 nos.
6.	Wooden panels (2' x4')	4 nos.
7.	Working bench (240 cm x 120 cm x 75 cm)	4 nos.
8.	Ford Cup No.4	4 nos.
9.	Physical Balance with weight box	2 nos.
10.	Weight per litre cup	4 nos.
11.	Porcelain Basin 450	12 nos.
12.	Hand gloves	20 pairs
13.	Steel lockers with 8 drawers	4 nos.
14.	Buckets (15 ltr. Capacity)	5 nos.
15.	Blow lamp	8 nos.
16.	Painter hand tools	20 sets
	<u>Spray Unit:</u>	
17.	Gun spray with gravity feed cup with accessories with portable Air Compressor	2 nos.
18.	Airless Spray Gun with accessories	2 nos.
19.	Pressure feed container 20 ltr. capacity	2 nos.
20.	Spray Booth	1 no.

### MATERIALS (For a batch of 20 participants)

<u>Sl.No.</u>	<u>Description</u>	<u>Quantity</u>
1.	Putty	4 kg.
2.	Primer (wood)	4 kg.
3.	Varnishes - different types (MM, PU)	2 ltr. Each
4.	Polish (wood)	10 ltr.
5.	Sand papers – different types	As required
6.	Pigments	2 kg.
7.	Thinner (Turpentine)	5 ltr.

- 1. Name of Module** : **Metal Surface Painter**
- 2. Sector** : **Painting**
- 3. Code** : **PAI 204**
- 4. Terminal Competencies** : After completion of training, the trainee should be able to :
1. Prepare metal surfaces for painting.
  2. Prepare and apply putty and fillers etc
  3. Paint metal surfaces.
- 5. Duration** : **150 Hrs.**
- 6. Entry Qualifications** : **5<sup>th</sup> Passed & 14 years of age + PAI 101**
- 7. Course contents** :

Day	Practical	Theory
1	<ul style="list-style-type: none"> <li>• Use of protective clothing and equipment and carry out safe working practices.</li> <li>• Apply good house keeping practices, proper handling of materials and waste disposal.</li> <li>• Demonstration and practical on Metal pretreatment such as Scraping, Rubbing by Emery cloth, Wire brushes, buffing, pickling, phosphating, and Blasting etc.</li> <li>• Practical on Metal surface preparation for painting by rubbing with emery scraping, wire brushing, Manual chipping &amp; by portable Grinder.</li> <li>• Descaling of Metal surfaces and flame cleaning of rusted surfaces.</li> </ul>	<ul style="list-style-type: none"> <li>• Health and safety precautions, safe working practices and waste disposal at work place.</li> <li>• Corrosion : Causes of Corrosion. Types of Corrosion, its effect on metallic surfaces, purpose of Metal pretreatment.</li> <li>• Corrosion on different Metals both Ferrous and non ferrous. Factors affecting corrosion.</li> <li>• Economical loss due to corrosion.</li> </ul>
2	<ul style="list-style-type: none"> <li>• Demonstration and Practical on Pretreatment of Ferrous &amp; nonferrous surfaces by degreasing, etching, pickling &amp; solvent wiping.</li> <li>• Preparing surface for primary coat of different metals. Practicing by brushes of various sizes.</li> <li>• Cleaning &amp; wiping of different surfaces to be painted to the required standard.</li> </ul>	<ul style="list-style-type: none"> <li>• Methods for the protection of Metal from corrosion.</li> <li>• Various methods of spray applications</li> </ul>
3	<ul style="list-style-type: none"> <li>• Practical on Preparation of Adhesive Compound like putties, filler and Metal, Cement and applying them on as metal surfaces.</li> <li>• Primary painting &amp; finishing painting by Brushes of Metal surfaces.</li> </ul>	<ul style="list-style-type: none"> <li>• Adhesives like putties, Filler and metal cement for metallic paintings</li> <li>• Brushes, Description, sizes &amp; uses.</li> </ul>
4	<ul style="list-style-type: none"> <li>• Practical on Selecting, Mixing, Tinting &amp; preparing of all types of oil paints/water paints, synthetic paints &amp; other paints to obtain specific colours.</li> </ul>	<ul style="list-style-type: none"> <li>• Colour and tone perception. Effect of light on colour, warm/cold colours. Special considerations of colour scheme selection.</li> </ul>
5	<ul style="list-style-type: none"> <li>• Practical on Rectifying the Common Coating Failures &amp; repairing of various painting defects.</li> </ul>	<ul style="list-style-type: none"> <li>• Quality &amp; Finishing of Work: Importance of quality &amp; finish of job at all stages. Protection of finish surfaces. Economical use of material, calculation for quantity of paint required, costing &amp; evaluation.</li> <li>• Behavioral etiquette</li> </ul>

1. **Name of Module** : **Spray Painter**
2. **Sector** : **Painting**
3. **Code** : **PAI 205**
4. **Terminal Competencies** : After completion of training, the trainee should be able to-
- 1) Handle different Spray Painting Equipments
  - 2) Paint metal surfaces by spray painting process
  - 3) Paint metal surfaces by Airless & Electrostatic spraying
5. **Duration** : **90 Hrs.**
6. **Entry qualification** : **5<sup>th</sup> Passed & 14<sup>th</sup> years of age.+PAI 101**
7. **Course Contents:**

Day	Practical	Theory
1	<ul style="list-style-type: none"> <li>• Use of protective clothing and equipment and carry out safe working practices.</li> <li>Apply good house keeping practices, proper handling of materials and waste disposal.</li> <li>Demonstration on Handling of different types of spray painting machines in different types of painting booths.</li> </ul>	<ul style="list-style-type: none"> <li>• Health and safety precautions, safe working practices and waste disposal at work place.</li> <li>• Spray Painting Equipments – different types of Spray Guns.</li> <li>• Method of spraying techniques on various surfaces.</li> <li>• Precautions in holding of Spray Guns &amp; spraying stroke.</li> <li>• Maintenance of Spray Guns.</li> </ul>
2	<ul style="list-style-type: none"> <li>• Practicals on Pretreatment, applying of primer coats &amp; spray painting on metal surfaces &amp; finishing work.</li> </ul>	<ul style="list-style-type: none"> <li>• Method and application process of metal surface painting &amp; finishing.</li> <li>• Various types of system of spray painting and their effect on metal surfaces.</li> </ul>
3	<ul style="list-style-type: none"> <li>• Practicals as Spray painting on different surfaces like corners, round, parallel, curved surfaces angles, rectangular, cone, cylinder, square.</li> <li>• Adjustment of spray gun stroke and holding spray gun etc., for multipurpose work.</li> </ul>	<ul style="list-style-type: none"> <li>• Synthetic, Cellulose &amp; Acrylic paints and finishing on metal surfaces.</li> <li>• Use of higher performance coating like chlorinated rubber &amp; Epoxy paints.</li> </ul>
4	<ul style="list-style-type: none"> <li>• Spray painting with Compressed Air Atomisation.</li> <li>• Practice on different types of Spray Guns.</li> </ul>	<ul style="list-style-type: none"> <li>• Treatment of various defects arising while spray painting and their remedies such as lifting, checking, craking wrinkling.</li> </ul>

5	<ul style="list-style-type: none"> <li>• Practice of Airless &amp; Electrostatic spraying by using different types of Electrostatic Spray Guns.</li> </ul>	<ul style="list-style-type: none"> <li>• Airless &amp; Electrostatic spraying: Description and safety precautions.</li> <li>• Handling of paints for Electrostatic spraying.</li> <li>• Paint used in Electrostatic spraying.</li> </ul> <p>8. Behavioral etiquette</p> <ul style="list-style-type: none"> <li>• Calculation for quantity of paint required, costing &amp; evaluation.</li> </ul>
---	--	---

### LIST OF TOOLS AND EQUIPMENT

#### EQUIPMENT (For a batch of 20 Participants)

<u>Sl.No.</u>	<u>Description</u>	<u>Quantity</u>
1.	Spraying Mask	5 nos.
2.	Steel combs	5 nos.
3.	Ford Cup No.4	2 nos.
4.	M.S. Panels 150mm x 100mm (18x22 swg)	30 nos.
5.	M.S. Panels 300mm x 200mm (18x22 swg)	30 nos.
6.	Wire Brushes	5 nos.
7.	Gun spray with gravity feed cup with accessories with portable Air Compressor	2 nos.
8.	Airless Spray Gun with accessories	2 nos.
9.	Pressure feed container 20 ltr. capacity	2 nos.
10.	Spray Booth	2 nos.

#### MATERIALS (For a batch of 20 participants)

<u>Sl.No.</u>	<u>Description</u>	<u>Quantity</u>
1.	Metal putty	4 kg.
2.	Metal primer	4 kg.
3.	Metal cement	4 kg.
4.	Oil paint	8 ltr.
5.	Acrylic Emulsion Paint	4 ltr.
6.	Thinner/Dilutents (Turpentine)	10 ltr.
7.	Synthetic paint white	4 ltr.
8.	Panels of painting defects	2 nos.



1. **Name of Module** : **PAINTER  
(APPLICATION, TESTS, HANDLING & STORING)**
2. **Sector** : **Painting**
3. **Code** : **PAI 306**
4. **Terminal Competencies** : After completion of training the trainee should be able to
1. Test the paints & varnishes for their purity (Physical and Chemical examination)
  2. Paint on machines, automobiles and domestic appliances
  3. Handle & store paints as per norms.
5. **Duration** : **120 hrs**
6. **Entry Qualifications** : 5<sup>th</sup> pass & 14<sup>th</sup> years of age.+**any one of MES Level II Course**
7. **Course contents** :

Day	Practical	Theory
1	<ul style="list-style-type: none"> <li>• Practical on Testing of different paints &amp; varnishes in respect of specific gravity, viscosity, hardness gloss &amp; finish, adhesion, flexibility &amp; drying time etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Health and safety precautions, safe working practices and waste disposal at work place.</li> <li>• Basics of MSDX</li> <li>• Theory related to methods of testing paints and varnishes</li> <li>• Material Safety Data Sheets</li> </ul>
2	<ul style="list-style-type: none"> <li>• Painting of Machines, tools of different types by brushing, spraying, dipping, removal of paints and surface treatment</li> </ul>	<ul style="list-style-type: none"> <li>• Processes of pretreatment of metals, wood and wall surfaces. Pre treatment processes on ferrous and non ferrous metals, casting and sheet metal</li> <li>• Processes of painting different types of machines, tools and equipments.</li> </ul>
3	<ul style="list-style-type: none"> <li>• Practice of painting safety colour code on different symbolic articles.</li> </ul>	<ul style="list-style-type: none"> <li>• Various colour codes and identification of pipe lines as per international &amp; industrial standards.</li> <li>• Standard colour code practices.</li> </ul>
4	<ul style="list-style-type: none"> <li>• Practice on different types of spray booths.</li> <li>• Spray painting on Machines Automobiles &amp; Domestic appliances.</li> </ul>	<ul style="list-style-type: none"> <li>• Use of high performance coatings.</li> <li>• Painting problems and their resolutions</li> <li>• System of storage of paints &amp; lacquers, solvents, thinners, painters tools.</li> </ul>
5	<ul style="list-style-type: none"> <li>• Practice in storage of paints, handling, conveying, lifting and weighing.</li> </ul>	<ul style="list-style-type: none"> <li>• Maintenance of store records, quality assessments of materials and man power requirements for painting jobs. Preparing cost estimates.</li> </ul>

## LIST OF TOOLS AND EQUIPMENT FOR PAINT AND ITS APPLICATIONS

### EQUIPMENT (For a batch of 20 Participants)

<u>Sl.No.</u>	<u>Description</u>	<u>Quantity</u>
1.	Ford Cup No.4	One set
2.	Checquer Sheets(for testing capacity)	40 sheets
3.	Standard Colour Shade Card IS:5	2
4.	Colour Blind Test Booklet	4
5.	Spray Gun	2
6.	HVLP Gun	2
7.	Compressor- 20Psi working pressure	One
8.	Mask, Gloves, Goggles, Personal Safety Items	One each
9.	Brushes(Size – 2inch )	20 Pcs.
10.	Thermometer(10 to 110 Deg.C)	2
11.	Beakers/Mug(500 ml.)	20 Pcs.
12.	Measuring Cylinder(100 ml.)	4 Pcs.
13.	Spatula	20 Pcs.
14.	Wooden Panels(6 inches x 6 inches)	40 Pcs.
15.	Concrete Panels(6 inches x 6 inches)	40 Pcs.
16.	Steel Panels(6 inches x 6 inches)	40 Pcs.
17.	Paper Panels(6inches x 6 inches)	40 Pcs.
18.	Emery Paper(320 and 400)	10 each
19.	Empty 1 Lt.Containers	40 Pcs.
20.	Cloth(Rag)	
21.	LCD Projector & computer (Multi Media Equipment with Screen)	1 Set

### MATERIALS (For a batch of 20 participants)

<u>Sl.No.</u>	<u>Description</u>	<u>Quantity</u>
1.	Wall Putty	4 Kgs.
2.	Wall Primer	4 Kgs.
3.	P.U Coatings	2 Kgs.
4.	Melamine Coatings	2 Kgs.
5.	Exterior Enamel – White-2	2 Ltrs.
6.	Interior Enamel – White-2	2 Ltrs.
7.	Wood Primers	4 Kgs.
8.	Cement Primer both water based and solvent based	2 Kgs.each
9.	Thinners for Melamine and PU Coatings	1 Ltr. each
10.	Acrylic Emulsion Paint – White	4 Kgs.
11.	Oil Bound/Acrylic Distemper White	4 Kgs.
12.	Water Based Stainers(Colour concentrate)Red, Yellow, Blue, Green	200 ml.each
13.	Solvent Based Stainers(Colour Concentrate)Red, Yellow, Blue, Green	200 ML each
14.	Painted Panels of almost all types of paints	1 each
15.	Panels of painting defects	1 each
16.	M.T.O	10 Ltrs.

**LIST OF MEMBERS WHO ATTENDED THE TRADE COMMITTEE MEETING  
OF "PAINTS & ITS APPLICATIONS" (PAINTING SECTOR) HELD ON  
14.05.2007 AT A.T.I., MUMBAI.**

A.T.I.  
S/Shri

From Paint Industry/Indian Paint Association  
S/Shri

1. Dr. I.K. JAIN  
DY.DIRECTOR OF TRG.

1. V.V. JOSHI  
GENERAL MANAGER TECH.  
BOMBAY PAINTS LIMITED  
B.D. PATIL MARG, CHEMBUR  
MUMBAI-400 074

2. R.V. KHAIRNAR  
ASSTT.DIR.OF TRG.

2. MANOJ SOMANI  
GOODLASS NEROLAC PAINTS LTD.  
NEROLAC HOUSE  
GANPATRAO KADAM MARG  
LOWER PAREL, MUMBAI-400 013

3. S.J. WAKDE  
TRG.OFFICER

3. C. J. BHUMKAR  
CHAIRMAN  
SOUJANYA ENTERPRISES  
THANE

4. A.R.H. SHAIKH  
TRG. OFFICER

4. W.V. KOTHEKAR  
VICE PRINCIPAL  
GOVT. I.T.I.  
SATARA (M.S.)

5. R.S. WAGH  
VOC.INSTRUCTOR

.....