CURRICULUM

FOR THE TRADE OF

MHE Maintenance Executive

(Warehouse / Packaging House/ manufacturing plant)

UNDER

APPRENTICESHIP TRAINING SCHEME

GOVERNMENT OF INDIA

MINISTRY OF SKILL DEVELOPMENT& ENTREPRENEURSHIP

DIRECTORATE GENERAL OF TRAINING

CONTENTS

1. ACKNOWLEDGEMENT

Logistics Sector Skill Council (LSC) sincerely acknowledges with thanks the contribution and cooperation extended by the Industry, State Directorate, Trade Experts and all others to bring out this curriculum for the trade of **MHE MaintenanceExecutive (Warehouse / Packaging House/ Manufacturing Plant)**under Apprenticeship Training Scheme.

Special acknowledgement to the following industries/organizations who have contributed valuable inputs in bringing out this curriculum through their expert members:

1. SPOTON Logistics
2. Safe Express
3. Express Industry Council of India.
4. Flexol
5. GATI

2. BACKGROUND

2. 1. Apprenticeship Training Scheme under Apprentice Act 1961

The Apprentices Act, 1961 was enacted with the objective of regulating the programme of training of apprentices in the industry by utilizing the facilities available therein for imparting on-the-job training. The Act makes it obligatory for employers in specified industries to engage apprentices in designated trades to impart Apprenticeship Training on the job in industry to school leavers and person having National Trade Certificate(ITI pass-outs) issued by National Council for Vocational Training (NCVT) to develop skilled manpower for the industry**.** There are four categories of apprentices namely**; tradeapprentice, graduate, technician and technician (vocational) apprentices.**

Qualifications and period of apprenticeship training of **trade apprentices** vary from trade to trade. The apprenticeship training for trade apprentices consists of basic training followed by practical training. At the end of the training, the apprentices are required to appear in a trade test conducted by NCVT and those successful in the trade tests are awarded the National Apprenticeship Certificate.

The period of apprenticeship training for graduate (engineers), technician (diploma holders and technician (vocational) apprentices is one year. Certificates are awarded on completion of training by the Department of Education, Ministry of Human Resource Development.

2. 2. Changes in Industrial Scenario

Recently we have seen huge changes in the Indian industry. The Indian Industry registered an impressive growth during the last decade and half. The number of industries in India have increased manifold in the last fifteen years especially in services and manufacturing sectors. It has been realized that India would become a prosperous and a modern state by raising skill levels, including by engaging a larger proportion of apprentices, will be critical to success; as will stronger collaboration between industry and the trainees to ensure the supply of skilled workforce and drive development through employment. Various initiatives to build up an adequate infrastructure for rapid industrialization and improve the industrial scenario in India have been taken.

2. 3. Reformation

The Apprentices Act, 1961 has been amended and brought into effect from 22nd December, 2014 to make it more responsive to industry and youth. Key amendments are as given below:

- Prescription of number of apprentices to be engaged at establishment level instead of trade-wise.

- Establishment can also engage apprentices in optional trades which are not designated, with the discretion of entry level qualification and syllabus.

- Scope has been extended also to non-engineering occupations.

- Establishments have been permitted to outsource basic training in an institute of their choice.

- The burden of compliance on industry has been reduced significantly.

3. RATIONALE

This candidate trained in this job role will be employed only in the warehouse or MHE service organization for material handling equipment maintenance. The material handling equipment is such as Forklift, Reach Truck, Order Picker, Battery Operated Pallet Truck and Manual/Hand Pallet Truck. Each employee in a warehouse / service company has a specific job. There are different job titles in each of the different types of warehouses, and each has the different importance:

1. The greater degree of relevance of the training with latest advancements of the industry will enhance the employability opportunities.
2. Ability to use latest tool& equipment's and their different techniques.
3. Acquire knowledge of MHE in warehouse environment, coordination with other departments, and handle the consignment in storage and retrieval.
4. Ability to use the computer for electronic documentation of information and understand instructions while handling equipment's.
5. Ability to use the company software to manage and update logs.
6. Exposure of Material Handling equipment's for better understanding the receiving and storage processes.
7. Prioritize the queries obtained and plan for the day.
8. Resolve the query within the target turnaround time (TAT).
9. Ability to concentrate on task at hand and complete it without errors.
10. Ability to understand the technical specification of the material handling equipment's and handle it accordingly.
11. Identify and Resolve the query.
12. Ability to conduct preventive and breakdown maintenance.
13. Exposure to regulations, use of work equipment, maintenance, control of substances hazardous to health with respect to Safety and Security aspects.
14. Exposure to Validate the relevant data obtained by cross-verification
15. Assess what is to be done to resolve the issue.

16. Ability to understand the additional information required and contact details of the relevant personal in the department.
17. Ability to manage client expectations.
18. Able to communicate and behave in a professional manner when dealing with customers, colleagues and supervisors.
19. Knowledge of Risk and impact of not following defined procedures/work instructions.
20. Able to understand clearly and gaining extensive knowledge of the company, services offered, and related solutions to problems.
21. Exposure to Reporting and documentation.
22. Ability to carry out basic organizational procedures in resolving the query and updating the unsolved query to suit requirements.
23. Ability to understand and maintain health, safety and security standards during delivery management.

4. JOB ROLE

Brief description of Job role:

Material Handling Equipment (MHE) Maintenance deals with repair, service and maintenance, for forklifts, reach trucks, conveyors, dock levelers, and more. It uses an extensive variety of manual, semi-robotized, and computerized gear and incorporates thought of the assurance, stockpiling, and control of materials all through their assembling, warehousing, dispersion, utilization, and disposal. Material handling equipmentmaintenance helps in keeping essential systems online and optimized with preventive maintenance and timely repairs.

MHE maintenance technician takes care of repair and maintenance of MHEs, gets trained in safe and correct service of these machines. These machines shall be automated, semi-automated or manual operated. Operating, maintaining and handling of these equipment's requires particular skill and technical knowledge. MHE maintenance technicians undergo special training in select MHE specific to the industry. Basic Training Providing Institutes should get to know about safe handling of this equipment as they are expensive and technical sensitive operation is required. Any negligence or mishandling or fault may lead to accident at the shop floor by causing physical damage to the human or material or infrastructure.

MHE maintenance technician should plan and organize assigned work and detect & resolve issues during service execution. Preventive Maintenance Service is foremost step which will be performed by the MHE maintenance technician as per the predetermined schedule. In addition, as per the service requests received, appropriate service and repair activities must be undertaken at premise or at service workshops.Demonstrate viable solutions and agree tasks within the team. Communicate with required clarity and understand technical language. Be Sensitive to environment, self-learning and keep hands on increased productivity.

5. LEARNING OUTCOMES

A. GENERIC OUTCOME

1. Recognize & comply safe working practices, environment regulation and housekeeping.
2. Work in a team, understand and practice soft skills, technical English to communicate with required clarity.
3. Illustrate concept and principles of basic arithmetic calculation, algebraic, trigonometric, statistics and apply knowledge of specific area to perform practical operations which requires well developed skills.
4. Explain basic science in the field of study including basic electrical, and hydraulics & pneumatics.
5. Read and apply engineering drawing for different application in the field of work.
6. Explain the knowledge of general concept, principles of productivity, quality tools, and labour welfare legislation and apply such in day to day work to improve productivity & quality.
7. Explain the general concept and process of energy conservation, global warming and pollution and contribute in day to day work by optimally using available resources.
8. Explain and display sensitivity towards personnel finance, entrepreneurship and manage/organize related task in day to day work for personal & societal growth.
9. Apply the general concept of basic computer, basic operating system and uses of internet services to take benefit of IT developments in the industry

B. SPECIFIC OUTCOME

- Explain how to prioritize MHE maintenance service plan.
- Apply knowledge of tooling requirement and collect the necessary tools from the tool crib/storageracks.
- Apply knowledge of specific MHE equipment to check damages and fluid levels, etc.
- Carryout testing of the MHE to ensure that it is fullyfunctional and safe for use.
- Prioritize the schedule obtained and plan every day without any delays.
- Resolve the query within the target turnaround time (TAT) of service operation.
- Understand the technical specification in job sheet, which helps during service operation.
- Exposure to regulations, use of work equipment, maintenance, control of substances hazardous to health with respect to Safety and Security aspects.
- Maintenance of manually operated, semi-automated and automatic machines and equipment's used in warehouse operations.
- Plan and organize assigned work.
- Detect & resolve issues during execution demonstrate possible solutions and agree tasks within the team.
- Communicate with required clarity.

6. GENERAL INFORMATION

1. Name of the Trade :**MHE Maintenance Executive**
   (Warehouse / Packaging House
   / manufacturing plant)

2. Duration of Apprenticeship Training: **15 Months**
   (i) Basic Training : 03 Months
   (ii) Practical Training : 12 Months

3. Duration of Basic Training : 03 months

4. Duration of Practical Training :12 Months

5. Entry Qualification :Passed 12th class examination under 10+2 system of education or its equivalent.

6. Selection of Apprentices : The apprentices will be selected as per the Apprentices Act amended time to time

7.Rebate:Trainee pass-outs from PMKVY or MES-SDI
or
Any central Government/state government approved scheme in course/trade/module relevant to the proposed optional trade.

Note:*Industry may impart training as per above time schedule, however this is not fixed. The industry may adjust the duration of training considering the fact that all the components under the syllabus must be covered. However the flexibility should be given keeping in view that no safety aspect is compromised and duration of industry training to be remains as 1 year.*

7. COURSE STRUCTURE

Training duration details: -

Time (in months)	1-3	4-15
Basic Training	Block– I	-----
Practical Training (On - job training)	----	Block – II

Components of Training	Duration of Training in Months →														
↓	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Basic Training Block - I															
Practical Training Block - II															

8. SYLLABUS

8.1 BASIC TRAINING (BLOCK – I)

DURATION: 03 MONTHS

GENERAL INFORMATION

1. Name of the Trade : **MHE Maintenance Executive (Warehouse / Packaging House / manufacturing plant)**

2. Name of the subject**:** **Professional Skills and Professional Knowledge (Trade Practical and Trade Theory)**

3. Hours of Instruction : **395 Hrs**

4. Batch size : 30

5. Power Norms : 4 KW

6. Space Norms : 25 Sq. m

7. Examination : i) The internal assessment will be held on completion of the Block.

8. Instructor Qualification :

- ***Degree/Diploma in Mechanical Engineering. From recognized university/Board with one/two year post qualification experience respectively in the relevant field***.

9. Tools, Equipment's & Machinery required: - As per Annexure – I

BASIC TRAINING (BLOCK – I)

Trade:**MHE Maintenance Executive**

(Warehouse / Packaging House/ manufacturing plant)

8.1.1 DETAIL SYLLABUS OF PROFESSIONAL SKILLS & PROFESSIONAL KNOWLEDGE

Sl. No.	Professional Skills (Trade Practical) 275 hrs	Professional Knowledge (Trade Theory) 120 hrs
1.	Understanding of the Safety rules and Procedures and taking precautions in the workplace.	The safety rules and` Procedures to be observed by MHE Maintenance executive
2.	Selection and use of different safety equipment's.	The safety rules and` Procedures to be observed by MHE Maintenance executive
3.	Follow healthy /safe work practices and maintain Health, Safety and Security measures While carrying out maintenance activities	Health, Safety and Security measures to be observed while carrying out the maintenance activities by Field Executive - Custom Clearance
4.	Organize work shop tools and equipment. Follow 5S	5S implementation and practice
5.	Visit to the MHE's workshop / repair center. and Understand the general Maintenance and Repairs procedure followed in the workshop, Prepare the List of Tools and equipment for repairs Follow the Job order flow in service operation	The general Maintenance and Repairs procedure. Tools and equipment for repairs Job order flow in service operation

6.	Perform the Practical Application of Material Handling	Basics of Material Handling Introduction to Material Handling Uses of Material Handling
7.	Select the material handling Equipment depending up on its function and use. Identify the MHE used in different Industries	Different Types of Material Handling Equipment's (MHE) and their use Different Industries and MHE used
8.	operate the different MHE's after Understanding the parts, functions and the purpose of Controls of MHEs	Technical knowledge on Material Handling Equipment's Controls and switches used to operate the MHE properly Basic physics and mechanics associated with the MHE
9.	Perform Routine Checkup, maintenance and Repairs of MHEs Carry out Preventive Maintenance. Use PMS card for both before and post usage .	Operation Procedures for Operating and Maintaining MHE's Optimum levels of fluids and lubricants Understanding the pre operational conditions required The importance of Preventive maintenance, Methods and procedures Understanding of PMS Card and its importance. Methods and procedures for before and post usage.
10.	Understand and identify sources of problems occurred in the MHE. Identify need for repair or replacement of parts. Update job sheet Indent for replacement parts	Sources of problems occur in general for MHEs Function. Steps to Identify need for repair or replacement of part. Details of job sheet . Procedure to Indent for replacement parts.

	Perform breakdown maintenance. Dispose of damaged, worn out and used lubricants	Method of Disposal for damaged, worn out and used lubricants
11.	Carry out Routine checks on MHEs (Post maintenance activities) Test the MHEs to ensure required repairs / service steps are completed. Generate maintenance / service report.	Details of Routine checks to be carried out for MHEs. Procedure to check the MHEs to ensure required repairs / service steps are completed . Procedure to generate maintenance / service report.
12.	**Revision & Internal Assessment**	

8.1.2.1 SYLABUS FOR WORKSHOP SCIENCE & CALCULATION Duration – 20 Hrs

Unit	:	Systems of unitFPS, CGS, MKS/SI unit, unit of length,Mass and time, Conversion of units
Basic Mathematics	:	BODMAS rule Fraction-Addition, Subtraction, multiplication and Division-Problem solving, Decimal Addition. Simple calculation using Scientific Calculator.Conversion of Fraction to Decimal and vice versa

.

Percentage	**:**	Introduction, Simple calculation. Changing percentageto fraction and decimal & vice-versa
Material Science	**:**	Definition, properties (physical & mechanical) and uses of Metal, Non-metal, Alloy &Insulator. Types of ferrous and Non-ferrous metals. Difference between Ferrous and Nonferrous metals.
Mass, Weight and Density:		Mass, Unit of Mass, Weight, difference between mass and weight. Density, unit of density. Relation between mass, weight & density. Simple problems related to mass, weight, and density.
Mensuration	**:**	Area and perimeter of square, rectangle, parallelogram, triangle, 13 circle, semi circle, Volume of solids – cube, cuboid, cylinder and Sphere. Surface area of solids – cube, cuboid, cylinder and Sphere
Elasticity	**:**	Elastic & Plastic material. Stress & strain and their units. Young's modules. Ultimate stress and breaking stress.
Heat & Temperature	**:**	Heat and temperature, their units, difference betweenheat and temperature, boiling point, melting point, Scale of temperature, relation between different scale of temperature. Thermometer, pyrometer. Transmissionof heat, conduction, convection, radiation.

Basic Electricity **:**Introduction and use of Electricity. Comparisons of AC & DC. Current, Voltage, Resistance and their Units. Power, Energy & their units. Insulator, conductors & their uses.

8.1.3 SYLABUS FOR ENGINEERING DRAWING
Duration :30 Hours

Introduction to Engineering Drawing and Drawing Instruments : - Conventions - Viewing of engineering drawing sheets. - Method of Folding of printed Drawing Sheet as per BIS SP:46- 2003 - Drawing board, T-Square, Drafter (Drafting M/c), Set Squares, Protractor, Drawing Instrument Box (Compass, Dividers, Scale, Diagonal Scales etc.), Pencils of different Grades, Drawing pins / Clips.

Lines: - Definition, types and applications in Drawing as per BIS SP:46-2003 - Classification of lines (Hidden, centre, construction, Extension, Dimension, Section) - Drawing lines of given length (Straight, curved) - Drawing of parallel lines, perpendicular line - Methods of Division of line segment

Free hand drawing of - Lines, polygons, ellipse, etc. - geometrical figures and blocks 12 with dimension transferring measurement from the given object to the free hand sketches.

Drawing of Geometrical Figures: Definition, nomenclature and practice of - Angle: Measurement and its types, method of bisecting. - Triangle -different types - Rectangle, Square, Rhombus, Parallelogram. - Circle and its elements.

Sizes and Layout of DrawingSheets - Selection of sizes - Title Block, its position and content - Item Reference on Drawing Sheet (Item List)
Method of presentation of Engineering Drawing - Pictorial View - Orthographic View - Isometric view

Drawing of Solid figures (Cube, Cuboids, Cone) with dimensions.
Free hand Drawing of Solid figures (Prism, Pyramid, Frustum of Cone and Pyramid.) with dimensions.

Free Hand sketch of hand tools and measuring tools used in respective trades.
Projections: - Concept of axes plane and quadrant. - Orthographic projections - Method of first angle and third angle projections (definition and difference) - Symbol of 1st angle and 3rd angle projection as per IS specification
Drawing of Orthographic projection in 3rd angle.

BASIC TRAINING (BLOCK – I)

8.1.2 EMPLOYABILITY SKILLS

GENERAL INFORMATION

1. Name of the Trade: **MHE Maintenance Executive (Warehouse / Packaging House/ manufacturing plant)**

2. Name of the subject : **Employability Skills**

3. Applicability :ATS - Mandatory for fresher only

4. Hours of Instruction : 55Hrs.

5. Examination :The examination will be held at the end of two years Training by NCVT.

6. Instructor Qualification:

i) MBA/BBA with two years' experience or graduate in sociology/social welfare/Economics with two years' experience and trained in Employability skills from DGT Institute.

And

Must have studied in English/Communication Skill and Basic Computer at 12th / diploma level

OR

ii) Existing Social Study Instructor duly trained in Employability Skills from DGT Institute.

8.1.4. SYLLABUS OF EMPLOYABILITY SKILLS

Topic No.	Topic	Duration (in hours)
	English Literacy	**8**
1	**Reading** Reading and understanding simple sentences about self, work and environment	
2	**Writing** Construction of simple sentences Writing simple English	
3	**Speaking / Spoken English** Speaking with preparation on self, on family, on friends/ classmates, on know, picture reading gain confidence through role-playing and discussions on current happening job description, asking about someone's job habitual actions. Cardinal (fundamental) numbers ordinal numbers. Taking messages, passing messages on and filling in message forms Greeting and introductions office hospitality, Resumes or curriculum vita essential parts, letters of application reference to previous communication.	
	I.T. Literacy	**10**
1	**Basics of Computer** Introduction, Computer and its applications, Hardware and peripherals, Switching on-Starting and shutting down of computer.	
2	**Word processing and Worksheet** Basic operating of Word Processing, Creating, opening and closing Documents, use of shortcuts, Creating and Editing of Text, Formatting the Text, Insertion & creation of Tables. Printing document. Basics of Excel worksheet, understanding basic commands, creating simple worksheets, understanding sample worksheets, use of simple formulas and functions, Printing of simple excel	

	sheets, Use of External memory like pen drive, CD, DVD etc, Use of Common applications.	
3	**Computer Networking and INTERNET** **Computer Networking and INTERNET** - Accessing the Internet using Web Browser, Downloading and Printing Web Pages, Opening an email account and use of email. Social media sites and its implication	
	Communication Skill	**8**
1	**Introduction to Communication Skills** Communication and its importance Principles of Effective communication Types of communication - verbal, nonverbal, written, email, talking on phone. Nonverbal communication -characteristics, components-Para-language Body - language Barriers to communication and dealing with barriers. Handling nervousness/ discomfort.	
2	**Listening Skills** Listening-hearing and listening, effective listening, barriers to effective listening guidelines for effective listening. Triple- A Listening - Attitude, Attention & Adjustment. Active Listening Skills.	
3	**Motivational Training** Characteristics Essential to Achieving Success The Power of Positive Attitude Self-awareness Importance of Commitment Ethics and Values Ways to Motivate Oneself Personal Goal setting and Employability Planning.	
4	**Facing Interviews** Manners, Etiquettes, Dress code for an interview Do's & Don'ts for an interview	

5	**Behavioral Skills** Problem Solving Confidence Building Attitude	
	Entrepreneurship skill	**08**
1	**Concept of Entrepreneurship** **Entrepreneurship** - Enterprises:-Conceptual issue Source of business ideas, Entrepreneurial opportunities, The process of setting up a business.	
2	**Institutions Support** Preparation of Project. Role of Various Schemes and Institutes for self-employment i.e. DIC, SIDA, SISI, NSIC, SIDO, Idea for financing/ non financing support agencies to familiarizes with the Policies /Programmes & procedure & the available scheme.	
	Productivity	**06**
1	**Productivity** Definition, Necessity, Meaning of GDP.	
2	**Affecting Factors** Skills, Working Aids, Automation, Environment, Motivation How improves or slows down.	
3	**Personal Finance Management** Banking processes, Handling ATM, KYC registration, safe cash handling, Personal risk and Insurance.	
	Occupational Safety, Health & Environment Education	**08**
1	**Safety & Health** Introduction to Occupational Safety and Health importance of safety and health at workplace.	
2	**Occupational Hazards** Basic Hazards, Chemical Hazards, Vibroacoustic Hazards, Mechanical Hazards, Electrical Hazards, Thermal Hazards. Occupational health, Occupational hygienic, Occupational Diseases/ Disorders & its prevention.	

3	**Accident & safety** Basic principles for protective equipment. Accident Prevention techniques - control of accidents and safety measures.	
4	**First Aid** Care of injured & Sick at the workplaces, First-Aid & Transportation of sick person	
	Labour Welfare Legislation	**02**
1	**Welfare Acts** Benefits guaranteed under various acts- Factories Act, Apprenticeship Act, Employees State Insurance Act (ESI), Payment Wages Act, Employees Provident Fund Act, The Workmen's compensation Act.	
	Quality Tools	**05**
1	**Quality Consciousness :** Meaning of quality, Quality Characteristic	
2	**Quality Circles :** Definition, Advantage of small group activity, objectives of quality Circle, Roles and function of Quality Circles in Organization, Operation of Quality circle. Approaches to starting Quality Circles, Steps for continuation Quality Circles.	
3	**House Keeping :** Purpose of Housekeeping, Practice of good Housekeeping.	
4	**Quality Tools** Basic quality tools with a few examples	

8.2 PRACTICAL TRAINING (ON-JOB TRAINING)

DURATION: 12 MONTHS

GENERAL INFORMATION

1Name of the Trade: **MHE Maintenance Executive (Warehouse / Packaging House/ manufacturing plant)**

2 Duration of On-Job Training : As per Apprentices Act amended time to time.

3 Examination :i) The internal assessment will be held on completion of the block

ii) NCVT exam will be conducted at the end of Apprenticeship Training

4 Instructor Qualification :

i) Degree/Diploma in Mechanical Engineering from recognized university/Board With one/two year post qualification experience in the relevant field.

OR

ii) LSC approved MHE Maintenance technician with three year post qualification experience in the relevant field.

5 Infrastructure for On-Job Training: As per Annexure – II

8.2.1 BROAD SKILL COMPONENT TO BE COVERED DURING ON-JOB TRAINING

(Detail Syllabus for Practical Training / ON - JOB TRAINING)

Duration: (12 months)

- Familiarization with the industry. Understand the uses and limitations of each type of MHE's.
- Understand the pre operating conditions for the MHE's and understand the tolerance levels.
- Understand the common reasons for breakdown of various MHE
- Introduction to safety Equipment's and their uses. Use of Personal protective Equipment's (PPE).
- Prepare different types of documentation as per industrial need using different methods of recording information.
- Demonstration of 5S Concept on shop floor.
- Develop good appearance and behavior, practice, tasks as per industry standard and express good communication skill.
- Prepare and maintain work area and maintain health and safety at the work place.
- Explain the various activities of MHE maintenance operations.
- Identify critical parts in various types of MHE
- Identify tools and equipment required to perform select repairs or replacement of parts
- Familiarize with lubricants and spares used in routine maintenance
- Operate different types of MHE's available at the shop floor and handle various consignments, practice loading and unloading, perform correct and safe removal of parts and MHE's.
- Read job sheet and understand service task requirements.
- Carryout the MHE maintenance activities such as visual inspection, checking controls, determining the problem, conducting repairs as per supervisor's instructions, etc.
- In case of any special assistance /support required to repair or resolve a problem or requirement of replacement part during maintenance operation, escalate to supervisor.

- Perform small repair activities under supervision and guidance. Eg- Oil inspection, battery recharging, correcting tolerances etc.
- Use correct PPE during service activity.
- Apply the operating procedure of the MHE's under supervision and guidance.
- Complete the job sheet with completed preventive / break down maintenance with observations.
- Complete indent form to obtain required replacement parts.
- Report to supervisor in case of delay in completing the maintenance operation with correct reason.
- Assess and escalate future problems related to MHE performance during the service operation.
- Account for the replaced parts and lubricants and update appropriate reports to store.
- Follow safe disposal methods for worn out parts and used lubricants as per standard operating procedure.
- Test is MHE is fully functional and fit for use.
- Schedule next maintenance date based on the type of MHE and usage.
- Mock exam to review performance and understand the errors caused during operations.
- Identify the risk options, accidents and to stay away.
- Build on effective communication with inter departments, sub-ordinates and super-ordinates for smooth MHE operations and safety procedures.
- Perform TPM (Total Production Management), TQM (Total Quality Management) and record keeping system

9. ASSESSMENT STANDARD

Assessment Guideline:

Appropriate arrangements should be made to ensure that there will be no artificial barriers to assessment. The nature of special needs should be taken into account while undertaking assessment. Due consideration to be given while assessing for team work, avoidance/reduction of scrape/wastage and disposal of scarp/wastage as per procedure, behavioral attitude and regularity in training.

The following marking pattern to be adopted while assessing :

a) Weightage in the range of 60-75% to be allotted during assessment under following performance level:

For this grade, the candidate with occasional guidance and showing due regard for safety procedures and practices, has produced work which demonstrates attainment of an acceptable standard of craftsmanship.

In this work there is evidence of:

- Good skill levels in the identifying MHE's problems and workshop equipment
- Many tolerances while undertaking different work are in line with those demanded by the component/job.
- A fairly good level of neatness and consistency in the finish
- Occasional support in completing the project/job.

b) Weight age in the range of above75%- 90% to be allotted during assessment under following performance level:

For this grade, the candidate, with little guidance and showing due regard for safety procedures and practices, has produced work which demonstrates attainment of a reasonable standard of craftsmanship.

In this work there is evidence of :

- Very Good skill levels in identifying MHE's problems and workshop equipment
- Meeting exact tolerances while undertaking different work are in line with those demanded by the component/job.
- A fairly very good level of neatness and consistency in the finish
- Rare support in completing the project/job.

c) Weight age in the range of above 90% to be allotted during assessment under following performance level:

For performance in this grade, the candidate, with minimal or no support in organization and execution and with due regard for safety procedures and practices, has produced work which demonstrates attainment of a high standard of craftsmanship.

In this work there is evidence of:

- Very Good skill levels identifying MHE's problems and workshop equipment.
- Meeting and exceeding tolerances level expectations while undertakingdifferent work are in line with those demanded by the component/job.
- A high level of neatness and consistency in the finish.
- Minimal or No Rare support in completing the project/job.

10.FURTHER LEARNING PATHWAYS

Employment opportunities:

On successful completion of this course, the candidates may be gainfully employed in the following industries:

1. Warehouses / Stores / Distribution centers / Fulfilment Centre / Mother Hub
2. Courier consolidation Centers
3. Transportation Companies
4. Airports / Air Cargo Terminals / Air Freight Stations
5. CFS / ICDs' / Port Terminals
6. Manufacturing Plants (Automobile / FMCG / Hazardous Goods)

ANNEXURE – I

TOOLS & EQUIPMENTS FOR BASIC TRAINING

INFRASTRUCTURE FOR PROFESSIONAL SKILL & PROFESSIONAL KNOWLEDGE

Trade: MHE Maintenance Executive

(Warehouse / Packaging House/ manufacturing plant)

TRAINEES TOOL KIT:-

Sl. No.	Name of the items	Quantity (indicative)
1.	Safety Shoes	20 pairs
2.	Safety Helmet	20
3.	Gloves	20 pairs
4.	Reflector Jackets	20
5.	Ear Plugs	20 pairs
6.	Industrial Goggles	20
7.	SOP Charts	20
8.	Safety Norms Handbook	20
9.	Technical specification Sheet	1 x 5sets (1 each/ MHE type)
10.	Material Safety Data Sheet	20
11.	DO's and Don'ts Sheet	1 x 5 sets (1 each/ MHE type)

Note: *In case of basic training, the BTP may hire the Material Handling Equipment if required except if the BTP is the manufacturer of the equipment. Tools, equipment and machinery available in the industry may be used for imparting basic training if the BTP is setup by the Industry*

ANNEXURE – II

INFRASTRUCTURE FOR ON-JOB TRAINING

Trade : **MHE Maintenance Executive**

(Warehouse / Packaging House/ manufacturing plant)

Actual training will depend on the existing facilities available in the establishments. However, the industry should ensure that the broad skills defined against On-Job Training part (i.e. 12 months) are imparted. In case of any shortfall, the concerned industry may impart the training in cluster mode/ any other industry/ at ITI.

ANNEXURE-III

GUIDELINES FOR INSTRUCTORS AND PAPER SETTERS

1. Due care to be taken for proper & inclusive delivery among the batch. Some of the following method of delivery may be adopted:

   A) LECTURE

   B) LESSON

   C) DEMONSTRATION

   D) PRACTICE

   E) GROUP DISCUSSION

   F) DISCUSSION WITH PEER GROUP

   G) PROJECT WORK

   H) INDUSTRIAL VISIT

2. Maximum utilization of latest form of training viz., audio visual aids, integration of IT, etc. may be adopted.
3. The total hours to be devoted against each topic may be decided with due diligence to safety & with prioritizing transfer of required skills.

ANNEXURE - IV

List of Basic Training providers recommended by LSC		
S.No	**Name of Basic Training Providers**	**Location**
1	Allcargo Logistics Limited	Tamil Nadu/Maharashtra
2	Alliance Institute of Advanced Pharmaceutical and Health Sciences	Telangana/Andhra Pradesh
3	Artem institute of logistics and transports	Tamil Nadu
4	Confederation of indian industry(CII) INSTITUTE OF LOGISTICS	PAN India
5	Daksya Academy Pvt Ltd	PAN India
6	Darcl Parable	Haryana
7	De Unique Educational Society (Softdot Institute)	PAN India
8	Degain Group	Maharashtra
9	Express Industry Council of India	PAN India
10	Green Earth Logistics Pvt. Ltd.	Tamil Nadu
11	INNOVISION LIMITED	PAN India
12	JBS Academy Pvt Ltd.	Gujarat
13	Nidan Technologies Private Limited	Maharashtra/Madhya Pradesh
14	People XL(Jobs connect hr solutions Pvt. Ltd)	South India
15	Premier Center for Competency Training	Tamil Nadu
16	Safeducate Learning Pvt. Ltd.	PAN India
17	Shri Technologies	PAN India
18	ST.BRITTO'S COLLEGE	Tamil Nadu
19	SynchroServe Global Solutions Private Limited	Telangana/Andhra Pradesh
20	Telangana Jagruthi	Telangana
21	TVS Training & Services Private Limited	Tamil Nadu
22	UPDATER SERVICES PVT LTD	South India

ANNEXURE - V

List of Assessment Agency for basic training recommended by LSC		
SL.NO.	**Name of Assessment Agency**	**Location**
1	Hemsen EXIM LLP	PAN India
2	Eduworld Consultants Pvt. Ltd,	
3	CII (Confederation of Indian Industry)	
4	Induslynk Training Services Private Limited (Mettl)	
5	Manipal City & Guilds Pvt Ltd	
6	GreenArrows Safety Management (P) Ltd	
7	I-Vintage solutions Pvt. Ltd.	
8	CoCubes Technologies Pvt Ltd	
9	Samhit Assessments & research foundation	
10	Formac Software Services	
11	Unison Academy	
12	Prima Competencies Pvt. Ltd	
13	Brisk Mind Pvt Ltd	
14	Edu Vantage Pvt. Ltd.	
15	Lead Assessment	
16	C & K Management Limited	
17	Krish Networks	
18	Society for education and Environmental training	
19	D'Pariksha	
20	Anagha Solutions	
21	Ashvi Consulting	
22	Shri Guru Hargovind Society	