

Course Curricula

Under

SKILL DEVELOPMENT INITIATIVE SCHEME (SDIS)

Based on

Modular Employable Skills (MES)

on

Material Handling Sector

Designed in 2013

Government of India
Ministry of Labour & Employment,
Directorate General of Employment & Training

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

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Skill Development based on Modular Employable Skills (MES)

Background

The need for giving emphasis on Skill Development, especially for the educated unemployed youth (both for rural & urban) has been highlighted in various forums. Unfortunately, our country's current education system does not give any emphasis on development of skills. As a result, most of the educated unemployed youths are found wanting in this area, which is becoming their Achilles heel.

As India is on the path of economic development and the share of service sector's contribution to the GDP of the country is increasing (53% of GDP) it is becoming imperative that Government of India along with other nodal agencies play an important role in providing employable skills, with special emphasis on Skills.

Hence, need of the hour is some policy change at Apex level which will address the needs of the changing economy and look at providing mandatory skills training to all educated unemployed youths, with a view to have them gainfully employed. This shift in policy will ultimately benefit all the stake holders, namely the individuals, industry, Government and the economy by way of providing employment, increasing the output/productivity and ultimately resulting in a higher GDP for the nation.

- **Frame work for skill development based on 'Modular Employable Skills (MES)'**
Very few opportunities for skill development are available for the above referred groups (educated unemployed youth). Most of the existing skill development programmes are long term in nature. Poor and less educated persons cannot afford long term training programmes due to higher entry qualifications, opportunity cost, etc. Therefore, a new framework for skill development has been evolved by the DGET to address the employability issues.

The **key features of new framework for skill development** are:

- Demand driven short term training courses based on modular employable skills are decided in consultation with Industries.
- Flexible delivery mechanism (part time, week ends, full time)
- Different levels of programmes (foundation level as well as skill up gradation) to meet demands of various target groups
- Central Government will facilitate and promote training while vocational training providers (VIPs) under the Govt. and Private Sector will provide training
- Optimum utilization of existing infrastructure to make training cost effective.
- Testing of skills of trainees by Independent Assessing Bodies (IABs) who would not be involved in conducting 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 up gradation, multi skilling, 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 organizations.
- ✓ 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

INTRODUCTION

Economic growth in India is increasingly supported by robust industrial growth. Materials handling Sector is one of the known and significant sectors that support almost all industrial activity. However, notwithstanding its importance and size (INR 4 trillion), it has traditionally not been accorded the attention it deserves as a separate sector in itself. The level of inefficiency in nursing work activities in the country has been very high across all modes.

The required pace of efficiency and quality improvement will demand rapid development of capabilities of Materials handling Sector service providers. And with Materials handling Sector skill development will emerge as a key capability.

This lack of focus on developing manpower and skills for the Materials handling Sector has resulted in a significant gap in the numbers and quality of manpower in the sector.

This gap, unless addressed urgently, is likely to be a key impediment in the growth of the Materials handling Sector. Materials handling Sector in India and in consequence, could impact growth in industry and manufacturing sectors as well.

This underscores the need identifying areas where such manpower and skill gaps are critical, and developing focused action plans to improve the situation.

A look at the required initiatives for manpower development in the above sector makes it clear that sustainable development of the sector's manpower requires a collaborative public private effort. The level of commitment demonstrated by each stakeholder would largely determine the direction that the sector heads towards.

Age of participants

The minimum age limit for persons to take part in the scheme is 18 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 and experts, Vocational Training Providers and other stakeholders are ensured at each stage).

Development of Core Competencies

Possession of proper attitudes is one of the most important attributes 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. Communication skills
2. Better usage of English language/Vernacular
3. Presentation skills
4. Self management

5. Resume preparation
6. GD participation/facing techniques
7. Interview facing techniques

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 Programme:

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.

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 learning through active participation and involvement.

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 programme. 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 competency-based certificates issued by **National Council for Vocational Training (NCVT)**.

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List of the members attended the Trade Committee meeting for designing the course curriculum under **Skill Development Initiative Skills (SDIS)** based on **Modular Employable Skills (MES)** on “**Material Handling Sector**” held at KITCO LTD,Kochi on 07th August’ 2013.

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15.	Mr. Ramani	L&T Channai	

COURSE MATRIX

Level-I	Code No.	Module	Remarks
		Over Head Crane operator	
		Pick and Carry Crane operator	
		Truck Mounted/Crawler/Rough Terrain Crane operator	

Sector: Material Handling Equipment (MHE)

SYLLABUS

Name of course	:	Over Head Crane Operator
Sector	:	Material Handling Equipment
Code	:	MHE 101
Entry Qualification	:	Minimum 8 th STD
Age	:	18 years
Terminal competency	:	On Successful completion of training one should be able to carry out operation of Over Head Crane.
Duration	:	150 Hrs
Qualification of Trainer	:	Diploma in Electrical/ Mechanical Engineering or ITI Electrical/ Auto Electrician with minimum of two years experience in operation of OverHead cranes

The candidate is expected to possess theoretical and practical knowledge on the following topics

PRACTICALCOMPETENCIES	UNDERPINNING KNOWLEDGE(THEORY)
<ul style="list-style-type: none">• Practice Health, safety and safety signs of Over Head Cranes / Crane Operating premises.• Detailed knowledge of the Over Head Cranes designs, systems and operations.• Describe the contents of the Crane Operator Manuals.• Identify different	<ul style="list-style-type: none">• General health and safety signs to be observed to the Over Head Cranes.• Familiarization of operator Manuel.• Study different types of cranes.• Knowledge of types of Over Head cranes as per the lifting capacities.

<p>components of the Over Head Crane.</p> <ul style="list-style-type: none"> • Identify Crane operating Controls and other components of the cabin. • Main purpose and use of over Head crane. • Identify Load Attachments, hook, slings and other optional attachments – its purpose and use. • Identify hoist, trolley, bridge girder functions. • Precautions for Crane traveling / movements on crane traveling area. • Practice – Hoist, Trolley, Bridge Girder operations. • Practice – Over Head Crane safety precautions. • Practice - Hand Signals, functions of signal man, slinger and riggers. • Practice – Positioning / parking Over Head Crane, after finishing the operation. • Practice- Panel reading 	<ul style="list-style-type: none"> • Study the use of Over Head Cranes. • Study the main components – Hoist, Trolley and Bridge girder. • Study the different types of Hooks, Slings and attachments. • Working principals of Over Head Crane operations. • Crane operating controls – Operator cabin, pendant. • Knowledge of crane travelling / moving area. • Brief description of electrical system of Over Head Crane. • Study of Hand signals – duties of signal man, slinger and riggers. • Study of different attachments - their working and use. • Positioning / parking the crane after completing the operations.
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Equipments required: Over Head Crane

Note: Do the daily maintenance as per the manufacture's recommendation mentioned in the service Manuel

SYLLABUS

Name of course	:	Pick and Carry Crane Operator
Sector	:	Material Handling Equipment
Code	:	MHE 102
Entry Qualification	:	Minimum 10 th Std+ LMV license
Age	:	18 years
Terminal competency	:	On Successful completion of training one should be able to carry out operation of Pick and Carry Crane.
Duration	:	150 Hrs
Qualification of Trainer	:	Diploma in Electrical/ Mechanical Engineering or ITI Electrical/ Auto Electrician with minimum of two years experience in operation of Pick and Carry cranes

The candidate is expected to possess theoretical and practical knowledge on the following topics

PRACTICALCOMPETENCIES	UNDERPINNING KNOWLEDGE(THEORY)
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<ul style="list-style-type: none"> • Practice health and safety – for safe operating practices • Familiarization of operator Manuel • Identify / Familiarization of the Crane components • Learning the controls in the crane operator cabin • Pre operation checking • Driving rules on public roads • Traveling crane without load • Pre lifting techniques –special steps to be taken for lifting various types of loads • Signals – communication between operator and signal man • Types of slings, shackles, boom • Traveling crane with load – load chart, position of load, safe working load • Transporting and parking the roller • Trouble shooting the machine • Familiarization with Safe load indicator • Follow the lubrication schedule 	<ul style="list-style-type: none"> • Knowledge on health and safety information • Familiarization of operator Manuel • Basic types of cranes • Learning use and working of major parts • Brief study of Diesel engines • Study of control livers with hydraulic power • Precautions crane traveling on public roads • Signals – inter action between operator and signal man • Types of hand signals • Load chart – study of load chart • Traveling crane with load – understanding the nature, position and weight of load • Controlling the speed of crane • Preventive maintenance to avoid breakdown • Parking and storing the machine • Brief study about safe load indicator
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Equipments required: Mobile Crane (Pick and Carry crane)

Note: Do the daily maintenance as per the manufacture's recommendation mentioned in the service Manuel

SYLLABUS

Name of course	:	Truck Mounted/Crawler/ Rough Terrain Crane Operator
Sector	:	Material Handling Equipment
Code	:	MHE 203
Entry Qualification	:	Minimum 10 th Std + HMV License and have passed the module MHE 102 (Pick and Carry Crane Operator)
Age	:	18 years
Terminal competency	:	On Successful completion of training one should be able to carry out operation of Truck Mounted/Crawler/Rough Terrain Crane
Duration	:	150 Hrs
Qualification of Trainer	:	Diploma in Mechanical Engineering with three years experience in operation of Truck Mounted /Crawler/ Rough Terrain Crane or ITI Electrical/ Auto Mobile with minimum of five years experience in operation of Truck Mounted /Crawler/ Rough Terrain Crane

The candidate is expected to possess theoretical and practical knowledge on the following topics

PRACTICALCOMPETENCIES	UNDERPINNING KNOWLEDGE(THEORY)
<ul style="list-style-type: none"> • Practice health and safety – for safe operating practices • Familiarization of operator Manuel • Identify / Familiarization of major components in the crane • Learning different controls in the operator/ driver cabin • Practice hand signals – communication between operator and signal 	<ul style="list-style-type: none"> • Knowledge on health and safety precautions to be observed in the site / crane operations • Familiarization of crane operator Manuel • Brief study of different types of cranes • Learning names of major components and application • Operator controls description

<ul style="list-style-type: none"> • Check all pre start inspections before travel / operate in the crane • Study of driving rules on public roads • Practice PTO operating system • Practice out riggers, boom, swing, hoist • Pre lifting techniques to operate crane without load • Familiarization of load chart, position of load , safe working load • Pre lifting techniques –special steps to be taken for lifting various types of loads • Moving the load – controlling the load • Familiarize the job – techniques for lowering the load, removing the slings • parking the crane • Trouble Shooting and rectification • Familiarisation with Safe Load Indicator • Practice Preventive maintenance as per manual 	<ul style="list-style-type: none"> • Pre start checking of crane • Brief study of 4 – stroke engine • Explain clutch , transmission, axles • Explain brake and steering system and hydraulic system • Study of control levers for traveling / operations • Study of load chart , safe working load , sling capacity , finding center of gravity • Study of under carriage- track tension, travelling mechanism • Precautions of traveling crane on public road • Study of communication between operator and signal man through signals • Standard accessories of the crane and attachments • Precautions for roller traveling • Parking and emergency brake system • Brief introduction of electrical system • Parking and storing the crane • Do's and Don'ts
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Equipments required: Truck Mounted/Crawler / Rough Terrain Crane

Note: Do the daily maintenance as per the manufacture's recommendation mentioned in the service Manual .