

Course Curricula for

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

In

Brassware Sector

DIRECTORATE GENERAL OF EMPLOYMENT AND TRAINING

MINISTRY OF LABOUR AND EMPLOYMENT

GOVERNMENT OF INDIA

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

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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).

MODULE- 1

Sector : BRASSWARE TECHNIQUES

Code : BRS101

Module : Basic art of engraving
(Competence level-1)

Age : Not less than 14 years.

Entry level requirements :

Ability to read and write, perfect vision with or without glasses, no handicap in upper limbs, functionally literate (able to read and write) in local language (Hindi- for the pilot project), willingness to sit, learn handicraft work and work for several hours at a stretch.

Desirables:

Good drawing skills, exposure to various processes of brass work

Terminal Competency:

To achieve a qualification at this level, the trained person must have demonstrative competency in the required "Basic and Specific common competencies" and must successfully clear the assessment against the test of terminal competencies.

Basic common competency:

1. Differentiate the properties of brass, quality of brass, type of brass and methods of manufacturing.
2. Differentiate, correlate between, different measuring units such as like mm, `soot', microns and SWG by using vernier callipers
3. Exercise safety measures necessary to avoid hazards and to finally achieve functional success.
4. Apply basic communication skills to develop good relationship at work and with customers.

Specific competency:

1. Perform sketching/tracing/replicating/different patterns of engraving on the brass article.
2. Select design's for engraving suitable to the type and shape of the brass article. 3 Securely place the brass article and mark and measure/trace basic lines/pattern on the surface of brass article for engraving
4. Select correct tools specific to the design to be engraved.
5. Engrave on the marked lines/pattern on the surface of brass article uniformly through correct handling of selected tools.

6. Engrave basic patterns ('Japani') with ease on flat and curved brass surfaces.
7. Engrave filling work ('Jaali' and `Daane') in between given outlined/pre-engraved patterns.
8. Enlarge a sketch/pattern to a desired size and engrave it.

PATHWAY:

At the completion of the Level 1 Engraving on brassware qualification, a student may enter:

Level 2 Engraving on brassware

Level 1 Etching on brassware

DURATION: 120 hours

Curricula contents:

Comprises the following skills:

Practical Competencies	Underpinning Knowledge(Theory)
Differentiate the properties of brass, quality of brass, type of brass and methods of manufacturing	<p>Knowledge in this area is of an introductory nature with minimal analysis</p> <p>Knowledge of different combination/grades of alloy used — zinc and copper Knowledge of different grades of material with different levels of combination and types of material such as brass sheet metal, ingot. Knowledge of various methods of manufacturing such as sand casting, die casting pressing/spinning of sheet metal etc.</p>
Differentiate, and correlate between, different measuring units such as millimetre, `soot', microns and SWG by using vernier callipers	<p>Knowledge of scale of units to determine the minimum thickness of metal required for engraving Awareness of minimum units of thickness of brass which can be worked upon Knowledge of various methods of measurement</p>
Exercise safety measures necessary to avoid hazards and to finally achieve functional success	<ul style="list-style-type: none"> • Awareness about likely accidents and hazards of not using a particular safety equipment • Awareness about hazard of not holding the chisel/kalam properly (i.e. away from the body) for engraving
Apply basic communication skills to develop good relationship at work and with the customers	<ul style="list-style-type: none"> • Congenial behaviour and etiquette • Presentation skills • Awareness of how to discuss business with exporters, contractors, clients

Perform sketching/tracing/replicating different patterns on the brass article	<ul style="list-style-type: none"> • Ability to sketch any type of pattern on paper using drawing instrument
Select designs for engraving suitable to the type and shape of the brass article	<ul style="list-style-type: none"> • Awareness of minimum thickness of brass required for engraving a particular sketch/pattern • Ability to forecast time (give an estimate of time) required for engraving a given pattern
Securely place the brass article; mark and measure/trace basic lines/pattern on the surface of brass article for engraving	<ul style="list-style-type: none"> • Knowledge of securely placing and positioning the brass article for engraving on a wooden tripod • Ability to engrave different patterns in between lines. • Ability to engrave basic straight/curved lines work on brass.
Select correct tools specific to the design to be engraved	<ul style="list-style-type: none"> • Knowledge of different engraving kalam • Knowledge of kachhi and pakki kalam and conditions when to use which one • Knowledge of striking tools
Engrave on the marked lines/pattern on the surface of brass article uniformly through correct handling of selected tools	<ul style="list-style-type: none"> • Knowledge of how to hold the kalam • Knowledge of how much pressure to put on the kalam with the striking tools to get the required evenness of lines/pattern • Knowledge of when and how to sharpen the engraving tool/kalam to get a uniform line on the brass article • Knowledge of correct posture so that pressure of kalam and striking tools on the kalam for engraving is even
Engrave basic patterns ('Japani') with ease on flat and curved brass surfaces	<ul style="list-style-type: none"> • Ability to engrave basic patterns ('Japani') — lines and curves - on flat and curved brass surface with synchronized/fluid movement of the hands and the engraving tools (kalam and thappi)
Engrave filling work ('Jalli' and 'Dann') in between given outlined/pre-engraved patterns	<ul style="list-style-type: none"> • Knowledge of different patterns which can be filled in between two lines
Enlarge a sketch/pattern to a desired size and engrave it	<ul style="list-style-type: none"> • Knowledge of taking forward a design engraved in a small portion of the brass article (through marking/measurement, tracing) to the whole brass article without a break in pattern being evident

Assessment:

To achieve the terminal competences, a competency based assessment must be undertaken against the performance criteria detailed in each terminal competency as below:

1. **Terminal Competency:** Differentiate the properties of brass, quality of brass, type of brass and methods of manufacturing

Element	Performance Criterion
Identify brass	<ul style="list-style-type: none">• Identify brass from a pool of 4 to 5 materials by visual inspection (through color, appearance, weight (density) and feel of the material)
Differentiate a particular type of brass from a pool of articles say 3 made from different types of brass	<ul style="list-style-type: none">• Identify a particular type of brass say 70/30 by visual inspection and acoustic testing from a pool of different brasses commonly used (3 types viz free cutting, 70/30, 65/35 etc)
Identify the manufacturing technique of a brass article and comment upon its hardness	<ul style="list-style-type: none">• Identify the manufacturing technique of a given brass article by visual inspection (from a pool of sand cast, die cast and machined brass samples)• Ascertain the hardness of the given brass sample if it is thick enough for engraving material

2. **Terminal Competency:** Differentiate, and correlate between, different measuring units such as millimeter, soot, microns and SWG by using vernier callipers.

Element	Performance Criterion
Correlate different measuring units of brass	<ul style="list-style-type: none">• Measure thickness of a given brass article with scale and Vernier Calipers and compare the readings• Convert SWG in mm using data chart provided in trainer's handbook• Recognize relations between millimetre, SWG, microns and soot

3. **Terminal Competency:** Exercise safety measures necessary to avoid hazards and to finally achieve functional success

Element	Performance Criterion
Use safety glasses	<ul style="list-style-type: none">• Explain need to use safety glasses

Identify correct cutting direction	Identify the correct method of method removal out of the correct and incorrect one (The chips shall be thrown in out wards direction, away from the eyes of engraver)
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4. **Terminal Competency:** Apply basic communication skills to develop good relationship at work and with customers

Element	Performance Criterion
Communication skills	<p style="text-align: center;">congenial behavior during</p> <ul style="list-style-type: none"> • Demonstrate interaction with peers, supervisors, customers Communicate/explain his/her ideas clearly • Convince the other person about his/her • ability to complete and deliver the specific/assigned task in a given/specific time period

5. **Terminal Competency:** Perform sketching/tracing/replicating/different ng/tracing/replicating/different patterns of engraving on the brass article.

Element	Performance Criterion
Sketching a pattern on paper	<ul style="list-style-type: none"> • Select appropriate drawing instruments • Draw sketch in a clear and precise manner • Forecast time to be taken to create a given sketch • Complete a drawing assignment by mixing and joining parts of different patterns evenly without any trace of disjointedness • Enlarge a given pattern to cover a specified area

Tracing a sketch on brass	<ul style="list-style-type: none"> • Select appropriate instruments for tracing • Trace with a steady hand on to the brass article • Clear pattern on the brass article visible for engraving
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Replicating	<ul style="list-style-type: none"> Identify and explain replicating techniques of a sketch Explain available preserving techniques for future replication of sketches like lamination, scanning etc.
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6. **Terminal Competency:** Select design/s for engraving suitable to the type and shape of the brass article .

Element	Performance Criterion
Selection of Engraving tools	<ul style="list-style-type: none"> Select proper engraving tools from the tool box for a given job Decide and select kachhi or pakki kalam for a particular pattern and with respect to a given brass surface
Forecast whether or not a given pattern can be engraved on a given article	<ul style="list-style-type: none"> Identify sketches which require deep engraving and excess material (Jameen) removal Select a given sketch to be engraved on a brass article with a minimum SWG (and also soot) requirement

7. **Terminal Competency:** Securely place the brass article and mark and measure/trace basic lines/pattern on the surface of brass article for engraving

Element----	Performance Criterion
Securely place the brass article	<ul style="list-style-type: none"> Securely brass article on a tripod with the area to be worked upon tilted at an angle for the comfort of the artisan
Sitting posture	<ul style="list-style-type: none"> Adopt proper sitting posture which is comfortable and can support the brass object while working
Mark and measure on the surface of brass article for engraving	<ul style="list-style-type: none"> Identify and using marking and measuring tools Evaluate a given sketch assess minimum SWG (and soot) of a brass article on which it has to be engraved

8. **Terminal Competency:** Select tools specific to the design to be engraved

Element	Performance Criterion
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Select tools specific to the design to be engraved	Select proper engraving tools from the tool box for a given job Decide and select kacchi or pakki kalam/chisel for a particular pattern with respect to a given brass surface
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9. **Terminal Competency:** Engrave basic patterns ('Japan') with ease on flat and curved brass surfaces.

Element	Performance Criterion
Basic engraving (Japan work)	<ul style="list-style-type: none"> • Perform basic engraving 'Japan' work in an accurate and consistent manner • Perform 'Japan' work in a specified time

10. **Terminal Competency:** Engrave filling work ('Jaali' and 'Daane') in between given outlined/pre-engraved patterns.

Element	Performance Criterion
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Filling work-'Jaali'	<ul style="list-style-type: none"> • Perform 'Jaali' work in between a pre-outline in an accurate and consistent manner • Perform 'Jaali' work in a specified time.
Filling work-'Daane'	<ul style="list-style-type: none"> • Perform 'Danne' work in between a pre-engraved outline in an accurate and consistent manner • Perform 'Danne' work in a specified time

11. **Terminal Competency:** Enlarge a sketch/pattern on the brass article to a desired size and engrave it

Element	Performance Criterion
Enlarge a sketch/pattern on the brass article	<ul style="list-style-type: none"> • Perform through enlarging a sketch/pattern on a larger surface area which has already been engraved in a small area of the brass article • Perform through consistent flow of the pattern with no evident break

Resources required:

- Working Table (Tripod Stand — preferably wooden with a slight curved surface at the centre to hold the brass article in place during the process of engraving)
- Geometrical tools- Compass, divider, metal scale, protector, set squares
- Drawing accessories- pencils, eraser, tracing papers, plane paper, carbon papers
- Measuring tools- Vernier calipers, wire gage
- Engraving tools- Kachhi (non-treated) and pakki (heat treated) kalams (chisels)
- Striking tools- wooden flat hammer (Thapki) and iron hammer
- Sharpening tools — sandstone (for sharpening kalams/chisels)
- Fixtures - rope, wooden bricks
- Cleaning accessories- cloth, solvent (acetone/gasoline/kerosene)
- Finishing tools- files, emery papers

List of participants engaged in the development of module on “Engraving in Brassware” under the aegis of Kaushal Vikas Samiti established at the District Level in Modradabad, Uttar Pradesh under the overall umbrella of the MoLE-GOI/ILO Skills Development Initiative in the Clusters

Artisan/Master craftspersons: engraving on brassware

S.No	Name	Desigantion & Address	Contact No.
1.	Mr. Dilshad Hussain	State Award Winner (engraving on brassware Gali No.1 Kaith vali Masid Makbara II, Moradabad	9897918264
2.	Mr. Mobeen Hussain	State Award Winner (engraving on brassware) 29F-6, Guiaa Bagh	9897827984
3.	Mr. Ikram Hussain Ansari	State Award Winner (engraving on brassware) Roze wall Ziyarat,Peerzada Chowk, Moradabad	9410458748
4.	Ms. Rashida Parveen	Mastercraftsperson (engraving on brassware) Roze wall Ziyarat,Peerzada Chowk, Moradabad	9410235878
5.	Ms. Saeeda Parveen	(engraving on brassware) Roze wall Ziyarat,Peerzada Chowk, Moradabad	9410235878
6.	Mr. Anwar Hussain	Artisan (Dhalai work), 22937 Mohalla Kisraul Diwan Khanan, Talim Bhai Wali gali, Moradabad	9634729065

Employers/Exporters Organizations

1.	Mr.Satyapal	Managing Director, M/s Globe Metal & Glass Exports, Delhi Road, Majhola Choraiya, Moradabad Hony. General Secretary Moradabad Handcrafts Exports Association, Jain Mandir Building Opp. Kotali, Moradabad-244001	0591-2480966 2480967
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2.	Mr. Ajai Gupta	Partner C.L. Gupta Exports Ltd, 18 Km Delhi Road Village Jivai, J.P. Nagar, U.P.	0591-2477000
3.	Mr. Ajay Kumar Johri	Metallurgist & General Manager Technical & HRD C.L. Gupta Exports Ltd, 18 Km Delhi Road, Village Jivai, J.P.Nagar, U.P.	009837038040
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5.	Mr. Hemant Juneja	Proprietor, Oliver Export, Prem Nagar Industrial Area, 7 Kms Kanth Road, Moradabad	
6.	Mr. Vineet Gupta	Partner, Creative House, D 9 Industrial Estate, Hartala, Moradabad Secretary, Indian Industries Association, D-9 Industrial Estate, Hartala, Moradabad	9837056858
7.	Mr. Sunil khanna	Proprietor, Creative Design, Prem Nagar Industrial area, Moradabad	9837304160

Institutions

1.	Mr. Vineet Tirth	Metallurgist & Head of the Mechanical Deptt. Ram Ganga Vihar, Phase II, Moradabad	9412339371
2.	Mr. Sajay Kishore	Technical Officer, Directorate of Training & Employment, UP, Rojgar Bhawan, Guru Gobind Singh Marg, Lucknow	0522-2630687, 9411809383
3.	Mr. Manoj K. Dubey	Principal, Industrial Training institute, Karith Road, Moradabad	0591-2450026, 9412847731
4.	Mr. Arif Hussain	Secretary, Peetal Mazdoor Karkhanedar Sanghathan Kapoor Company, Moradabad Galli No.10, Daulat Bagh, Moradabad	975312677
5.	Mr. Sudhakar Ranjan Tyagi	District President Hind Mazdoor Sabha Kapoor Co., Moradabad	9412837778
6.	Ms. Harmeet Sarin	International Labour Organisation, 3 rd floor, India Habitat Centre, Lodhi Road, N. Delhi	24602101-02-03, 9810199272

