

**Competency Based Curricula
for**

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

**in
Wooden Furniture**



DIRECTORATE GENERAL OF EMPLOYMENT AND TRAINING

MINISTRY OF LABOUR & EMPLOYMENT

GOVERNMENT OF INDIA

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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 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 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

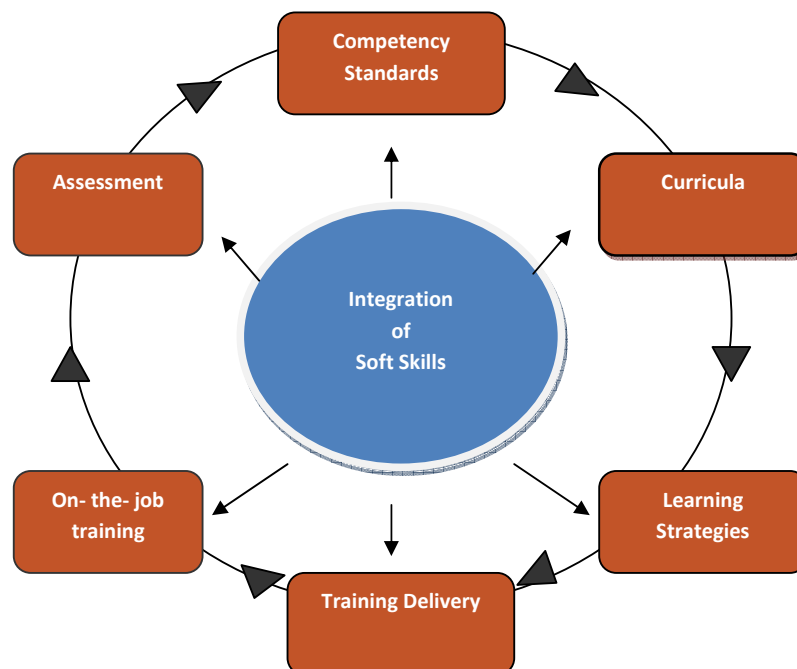
- Identification of Employable Skills set in a sector based on division of work in the labour market.
- Development of training modules corresponding to skills set identified so as to provide training for specific & fit for purpose
- Organization of modules in to a Course Matrix indicating vertical and 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 stage).

Development of Soft Skills/ Core Competencies

Soft skills refer to a cluster of personality traits, social graces, facility with language, and personal habits that make someone a good employee and a compatible co-worker. Soft skills are also sometimes referred to as employability skills, generic skills, key or core competencies. Soft skills complement hard skills, which are the technical requirements of a job.

Soft Skills are integral to workplace competency and, as such, must be considered in the design, customisation, delivery and assessment of vocational training programmes in an integrated and holistic way, as represented diagrammatically below.



Soft skills are very important in business. Soft skills are now recognised as key for making businesses more profitable and better places to work. Increasingly, companies aren't just assessing their current staff and future recruits on their technical skills but also on a whole host of soft skills. Especially, Service economy and the ascendance of work teams in large organizations put a new premium on people skills and relationship-building. It is essential to be technically sound, but one should also have the ability to convey the idea to the masses in the simplest possible manner.

Hence, systematic efforts should be made to develop soft skills during the training programme. 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 **soft skills / core competencies** to be developed are:

1. Punctuality, discipline and honesty
2. Cordial relationship and Cooperation with co-workers and team Work
3. Positive attitude and behavior
4. Work ethics and dependability
5. Self esteem and confidence
6. Self-motivation and initiative
7. Flexibility/ adaptability
8. Communication Skills
9. Respect for rules and regulations
10. Concern for quality
11. Concern for health and hygiene
12. Responsibility and accountability
13. Care of equipment and tools
14. Safety consciousness and safe working practices
15. Learn continuously
16. Concern for environment and waste disposal
17. Ability to bear stress and work under pressure

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, delegating, appraising, motivating
4. Negotiation
5. Time management ability

In addition to above, **livelihood skills** like how to apply for a job, facing an interview, opening/ operating an bank account may also be covered.

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).

Name : **Basic Wood Work**

Sector : **Wooden Furniture**

Code : **WOO101**

Entry Qualification & Age : Vth Standard,14 Years & Above

Duration : 270 hours

Terminal Competency : The participant will be able to :-

- Identify, select, use and store tools, equipments and materials used in Carpentry in a safe manner.
- Carry out Sawing and planning
- Make joints and simple products

Course Contents:-

| Practical Competencies | Underpinning Knowledge(Theory) |
|--|--|
| <ul style="list-style-type: none"> • Identification of tools and equipments used in carpentry & shuttering • Use of protective clothing, boots, goggles and equipment as applicable to a task • Good house keeping practices, proper handling of materials and waste disposal. • Safety precautions and safety belts while working at site • Store/lay materials at work in safe manner • Use and store of tools and equipments in a safe manner • Measurement length, width & depth in | <ul style="list-style-type: none"> • Role of Carpenter. • Description of trade • Different types of tools and equipments used in Carpentry. • Safety precautions <ul style="list-style-type: none"> ▪ While using different hand tools ▪ While using raw materials ▪ With co-workers • Knowledge of measurements and its conversion to other system |

| MKS & FPS system | |
|--|--|
| <ul style="list-style-type: none"> • Size a raw timber using proper tools to measure • Mark, cut and drill holes within required tolerances and standards. | <ul style="list-style-type: none"> • Identification of timber as per quality and classification, care and safe uses of tools. • Understanding tolerances & house keeping |
| <ul style="list-style-type: none"> • Preparation of a ply piece out of plywood sheet using proper tools to measure, mark, cut and drill holes within required tolerances and standards. | <ul style="list-style-type: none"> • Identification of plywood as per quality, use and classification, care and safe uses of tools. Understanding tolerances. Storage & maintenance of plywood. |
| <ul style="list-style-type: none"> • Preparation of half lap, dove tail, tenon & mortise joints with shaped timbers using proper tools to measure, mark, cut and fit within required tolerances and standards | <ul style="list-style-type: none"> • Identification, care and safe uses of timber jointing tools, knowledge of various joints and appropriate applications, their relative merits and demerits. |
| <ul style="list-style-type: none"> • Produce simple products e.g. stool and box. | |

LIST OF TOOLS AND EQUIPMENTS

| S.No | Description | Quantity | | Total |
|------|---|----------|----------|-------|
| | | Display | Training | |
| 1 | Claw Hammer 2 Lb(1Kg) | 1 | 20 | 21 |
| 2 | Ball Pin Hammer 2 Lb(1Kg) | 1 | - | 1 |
| 3 | Handsaw 18" & Tenon Saw 12" | 1 each | 10 each | 22 |
| 4 | Wooden Jack Planner 15" & Iron Jack Planner 12" | 1 each | 5 each | 12 |
| 5 | Wooden Marking Gauge & Mortise Gauge | 1 each | 5 each | 12 |
| 6 | Spirit Level 12" Long & Tri-square 5" | 1 each | 5 each | 12 |
| 7 | Auger - 1/2", 3/4", 1" | | 5 each | 15 |
| 8 | Steel Measuring Tape - 3 Mtr & 5 Mtr | 1 each | 10 each | 22 |
| 9 | Farmer Chisel - 1/2" | 1 | 20 | 21 |
| 10 | Farmer Chisel 1", 1 1/2" & Mortise Chisel 1/2",1/4" | | 5 each | 20 |
| 11 | Cutting Pliers 8" | 1 | 5 | 6 |
| 12 | Screw Driver 10" & Star Screw Driver 10" | 1 each | 5 each | 12 |
| 13 | Marking Knife / Scriber | 1 | 5 | 6 |
| 14 | Wooden Mallet | 1 | 10 | 11 |
| 15 | Oil Stone (Rough/Smooth) | 1 | 5 | 6 |
| 16 | Cutting Chisel 4" & Centre Punch | 1 each | 2 each | 6 |
| 17 | Bench Vice 10" | 1 | 1 | 2 |
| 18 | Hacksaw Frame with blade 12" | 1 | 2 | 3 |
| 19 | Triangle file - 6 mm (Medium) | 1 | 5 | 6 |
| 20 | Half Round File 1" x 12" Long (Smooth) | 1 | | 1 |
| 21 | Flat File 1" x 12" (Smooth) | 1 | | 1 |
| 22 | Jumper with Bit 8" Dia | 1 | 1 | 2 |
| 23 | Drill Bit – 8, 12, 16, 18, 22 mm (Straight Shaft) | 1 | 1 each | 6 |
| 24 | Plumb Bob - 200 g | 1 | 5 | 6 |
| 26 | Ring Spanner - 21 / 23, 20 / 22, 18 / 19 | 1 | 5 each | 16 |
| 27 | Double End Spanner - 21 / 23, 20 / 22, 18 / 19 | 1 | 5 each | 16 |
| 28 | Screw Spanner 12" LM | 1 | 2 | 3 |

| | | | | |
|----|------------------------------|---|----|----|
| 29 | L Square | 1 | 5 | 6 |
| 30 | Cramp | 1 | 5 | 6 |
| 31 | Gimlet | 1 | 10 | 11 |
| 32 | Gauge Blocks | 1 | 20 | 21 |
| 33 | Thread | | 20 | 20 |
| 34 | Safety Goggles | 1 | 5 | 6 |
| 35 | Safety Helmet | 1 | 20 | 21 |
| 36 | Cotton Hand - Gloves | 1 | 20 | 21 |
| 37 | Tools Bag | 1 | 5 | 6 |
| 38 | Safety Belt | 1 | 10 | 11 |
| 39 | Face Mask | 1 | 2 | 3 |
| 40 | Safety Shoes (Assorted Size) | | 20 | 20 |
| 41 | Ear Muff | | 2 | 2 |

Wooden Furniture Making

| | | |
|--------------------------------------|---|---|
| Name | : | Wooden Furniture Making |
| Sector | : | Wooden Furniture |
| Code | : | WOO202 |
| Entry Qualification & Age | : | Vth standard, 14 years & above MES module on 'Basic Wood Work |
| Duration | : | 270 hours |
| Terminal Competency | : | |

- Identify, select, use and store tools, equipments and materials used in wooden furniture making in a safe manner
- Make Stool, Divan, Dining table, Chair, Single and double beds, Dressing table.

CONTENTS:

| Practical Competencies | Underpinning Knowledge(Theory) |
|---|---|
| <ul style="list-style-type: none">• Use of protective clothing and boots• Identify tools, equipments and materials used in wooden furniture making• Apply good house keeping practices, proper handling of materials and disposal of waste, follow statutory regulations. | <ul style="list-style-type: none">• Safety precautions, use of protective clothing and elementary first aid.• Functions and uses of various tools and equipment.• Reasons for carrying out good housekeeping practices• Care and use of tools, equipment |

| Practical Competencies | Underpinning Knowledge(Theory) |
|---|--|
| <ul style="list-style-type: none"> • Carry out basic first aid treatment/notifying accident. • Store/lay materials at work in safe manner • Use and store tools and equipments in a safe manner • Select proper tools for a particular task • Take measurements using appropriate measuring tool (Measuring tools : measuring tape, Steel rule) • Read and interpret simple blue prints and drawings • Draw freehand sketches of furniture to explain to the customers. (Furniture: Stools, Divan, Dining tables, Chairs, Single and Double beds, Dressing table) • Estimate the types and quantity of materials required for each job (Job: Stools, Divan, Dining tables, Chairs, Single and Double beds, Dressing table) • Select the correct type of timber/ply etc. for a given job • Measure, mark and cut the timber according to the required dimensions. | <p>and materials used in fitting</p> <ul style="list-style-type: none"> • Selection and correct use of tools • Criteria for selection of tool for different operation. • Proper handling and correct use of hand tools • Types of measuring tools • Least count and errors • Measurement procedures • Safety precautions related to measuring tools <ul style="list-style-type: none"> • Introduction of marking tools. Application of marking tools. Safety, proper handling and use of marking tools. • Introduction to sheet metal hand tools and machine tools and safety precautions to be observed while using them. • Types of sheet metal and their applications. Different sizes of sheet metal commercially available |

| Practical Competencies | Underpinning Knowledge(Theory) |
|---|--|
| <ul style="list-style-type: none"> • Make templates for different operations. • Plane the work pieces to accuracy • Make appropriate joints for stability and strength. • Select the adhesives to fix ply, sunmica etc., apply adhesive and fix sunmica etc. • Fix molding beats, wherever required. (Molding beats: Wooden beats, Aluminum beats, P.V.C. beats) • Fix general accessories, if required. (Accessories : Rubber shoes, Wheels handles, Decorative pieces, Handles) • Fix glasses and mirrors according to customer requirements • List out the materials required for the given product • Estimate cost of materials required • Estimate man power and time required for completing the work • Estimate labour cost, overheads and cost of utilities (Power, water) • Estimate the total cost involved in production of a product. | <ul style="list-style-type: none"> • Metal joining method • Types of seams and allowances • Types of flux and selection criteria • Types of rivets and their applications • Types of rivet joints • Defects of riveted joint • Safety precautions • Knowledge of limits, fits, tolerance. • Systematic steps of different operations. Safety consideration in each operation. |

Suggested List of Tools, Equipment & Raw Material

| S.No. | Specifications | Qty. proposed for a batch of 20 students |
|------------------------------|---|--|
| Equipment & Tools | | |
| 1. | Tennon Saw 12" , 14" | 10 |
| 2. | Hand Saws 18" to 24' | 10 |
| 3. | Chielsels (i) Firmer chisel 1/8 to 2" (ii) Dovetail chisel ½ to 2" (iii) Mortise chisel 1/8 to ½" (iv) Gouge 3/8" to 1" | 10 05 10 each |
| 4. | Planers (jack plane) 9" to 18" | 10 |
| 5. | Smooth plane 9" | 10 |
| 6. | Hammers (i) Waring ton 50 Gm. to 1 Kg, (ii) Claw 500 Gm. (iii) Mallet 500 Gm. | 10 each |
| 7. | Foot rules 2 Ft. | 10 |
| 8. | Try squares 4" to 12" | 10 |
| 9. | Marking gauge 8" | 10 |
| 10. | Tape or flexible steel rule 10Ft. | 10 |
| 11. | Bevel square | 10 |
| 12. | Hand drills with bits & Electrical drill (i) Single gear elect. with bits (ii) Double gear elect. bits | 02 each |
| 13. | Turning tools | 1 Set |
| 14. | Pincer 6" , 8" | 10 |

| S.No. | Specifications | Qty. proposed for a batch of 20 students |
|-------|--|--|
| 15. | Auger 3/8" to 1 1/4" | 10 |
| 16. | Adge 1Kg. | 10 |
| 17. | Gimlet Standard size | 10 |
| 18. | Bradawl 4" | 10 |
| 19. | C. Clamp 3" to 9" | 10 |
| 20. | Screw driver 4"to 2' | 10 sets |
| 21. | Bar clamp or T Clamp | 10 |
| 22. | Carpenter vice 10" | 10 |
| 23. | Work Bench 6'X3'X2 1/2' | 10 |
| 24. | Scriber standard size | 10 |
| 25. | Caliper 3" to 9" | 10 |
| 26. | Divider 3" to 9" | 10 |
| 27. | Circular saw (1Hp) | 1 |
| 28. | Centre bit 1/8" to 1" | 2 set |
| 29. | Twist bit 3/8" to 1 1/4" | 1 set |
| 30. | Auger bit 3/8" to 1 1/4 " | 1 set |
| 31. | Rose counter sinking bit 3/8" to 1/2 " | 1 set |
| 32. | Glass cutter | 2 Nos. |
| 33. | Ratchet brace | 5 |
| 34. | Wood rough file smooth file half round 6"x10" rasp 10" file, triangular file 4" to 8" | 5 Nos. each |
| 35. | Oil stone 8" , 2" , 1" | 5 |

LIST OF MEMBERS OF TRADE COMMITTEE

| | | | | |
|-----|----------------|------------------------|---|----------|
| 1. | T.M.Jawaharlal | Secretary | Employees Federation of Southern India | Member |
| 2. | N.Adhimoolam, | Manager | ECC Division, L&T Limited SIPCOT IT Park, Kancheepuram.603 103. | Member |
| 3. | T.Palani , | Carpenter | Tamilnadu Khadi & Village Industries Board, Guindy | Member |
| 4. | S.Subbiah | Joint Director | C E T, Guindy | Chairman |
| 5. | K.Kadirvelu | Deputy Director | C E T, Guindy | Member |
| 6. | R.Maheswaran | Deputy Director | C E T, Guindy | Member |
| 7. | K.Krishnakumar | Charge man | Tamilnadu Khadi & Village Industries Board, Guindy | Member |
| 8. | N.Devaraj , | Steel worker | Tamilnadu Khadi & Village Industries Board, Guindy | Member |
| 9. | Elumalai | Asst. Training Officer | G ITI , North Chennai | Member |
| 10. | Thiruvengadam | Asst. Training Officer | G ITI , North Chennai | Member |
| 11. | G.Vijayamala | Technical Assistant | C E T, CD Cell | Member |