



GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT & ENTREPRENEURSHIP
DIRECTORATE GENERAL OF TRAINING

COMPETENCY BASED CURRICULUM

COMPUTER AIDED EMBROIDERY & DESIGNING

(Duration: One Year)

CRAFTSMEN TRAINING SCHEME (CTS)

NSQF LEVEL- 4



SECTOR – APPAREL

COMPUTER AIDED EMBROIDERY & DESIGNING

(Non-Engineering Trade)



Version: 1.1

CRAFTSMEN TRAINING SCHEME (CTS)

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NSQF LEVEL - 4
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Developed By

Ministry of Skill Development and Entrepreneurship

Directorate General of Training

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ACKNOWLEDGEMENT

The DGT sincerely acknowledges contributions of the Industries, State Directorates, Trade Experts, Domain Experts and all others who contributed in revising the curriculum. Special acknowledgement is extended by DGT to the following expert members who had contributed immensely in this curriculum.

List of Expert members participated for finalizing the course curriculum of Computer Aided Embroidery and Designing.			
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1. COURSE INFORMATION

During the one-year duration of “Computer Aided Embroidery & Designing” trade, a candidate is trained on Professional Skill, Professional Knowledge and Employability Skill. In addition to this, a candidate is entrusted to undertake project work, extracurricular activities and on-the-job training to build up confidence. The broad components covered under Professional Skill subject are as below:-

In this year the trainees will apply safe working practices at work place. They will identify and use embroidery tools, machine and operate with safety precautions. They can Prepare sample basic hand stitches (Temporary & permanent stitch). They will also acquire the skill of prepare sample by both the technique (Hand and Machine). They will able to prepare Indian Dresses, Western Dresses with suitable fabric design using coral draw. They can set up the machine and machine accessories as per requirement and also troubleshoot the machine with proper maintenance procedure. They will also Develop the skill to make computerizes design with the application of software.

The trainees can Setup computerized embroidery machine for transferring the image. They will able to run the computerized embroidery machine for all the digitizing process. They will prepare T-shirt used monogramming & logo design. They can also able to Identify, select and apply the digitizing design and use various techniques e.g. Appliqué work, Sequins work, Taping work, Cording work, Chenille work.

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2.1 GENERAL

The Directorate General of Training (DGT) under Ministry of Skill Development & Entrepreneurship offers a range of vocational training courses catering to the need of different sectors of the economy/ labour market. The vocational training programs are delivered under the aegis of National Council of Vocational Training (NCVT). Craftsman Training Scheme (CTS) and Apprenticeship Training Scheme (ATS) are two pioneer programs of NCVT for propagating vocational training.

‘Computer Aided Embroidery & Designing’ trade under CTS is one of the popular courses delivered nationwide through a network of ITIs. The course is of one year duration. It mainly consists of Domain area and Core area. The Domain area (Trade Theory & Practical) imparts professional skills and knowledge, while the core area (Employability Skill) imparts requisite core skills, knowledge, and life skills. After passing out the training program, the trainee is awarded National Trade Certificate (NTC) by NCVT which is recognized worldwide.

Candidates broadly need to demonstrate that they are able to:

- Read and interpret technical parameters/documents, plan and organize work processes, identify necessary materials and tools;
- Perform tasks with due consideration to safety rules, accident prevention regulations and environmental protection stipulations;
- Apply professional skill, knowledge & employability skills while performing jobs.
- Document the technical parameters related to the task undertaken.

2.2 CAREER PROGRESSION PATHWAYS

- Designer
- Designer Tailor/ Embroiderer
- Pattern Maker
- Pattern Master
- Advance Pattern Master
- Merchandiser
- Supervisor

2.3 COURSE STRUCTURE

Table below depicts the distribution of training hours across various course elements during a period of one year: -

S No.	Course Element	Notional Training Hours
1.	Professional Skill (Trade Practical)	1260
2.	Professional Knowledge (Trade Theory)	252
3.	Employability Skills	110
4.	Library & Extracurricular activities	58
5.	Project Work	160
6.	Revision & Examination	240
	Total	2080

2.4 ASSESSMENT & CERTIFICATION

The trainee will be tested for his skill, knowledge and attitude during the period of the course and at the end of the training program as notified by the Government of India (GoI) from time to time. The employability skills will be tested in the first year itself.

a) The **Internal Assessment** during the period of training will be done by **Formative Assessment Method** by testing for assessment criteria listed against learning outcomes. The training institute has to maintain an individual trainee portfolio as detailed in assessment guideline. The marks of internal assessment will be as per the template (Annexure – II).

b) The final assessment will be in the form of summative assessment method. The All India Trade Test for awarding NTC will be conducted by NCVT as per the guideline of Government of India. The pattern and marking structure is being notified by Govt. of India from time to time. **The learning outcome and assessment criteria will be the basis for setting question papers for final assessment. The examiner during final examination will also check** the individual trainee's profile as detailed in assessment guideline before giving marks for practical examination.

2.4.1 PASS REGULATION

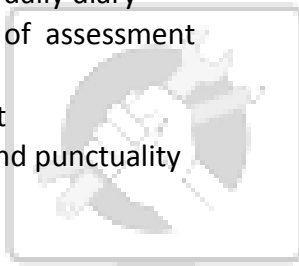
For the purposes of determining the overall result, weightage of 100% is applied for six months and one year duration courses and 50% weightage is applied to each examination for two years courses. The minimum pass percent for Practical is 60% & minimum pass percent for Theory subjects is 33%.

2.4.2 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 the assessment. Due consideration should be given while assessing for teamwork, avoidance/ reduction of scrap/ wastage and disposal of scrap/waste as per procedure, behavioral attitude, sensitivity to the environment and regularity in training. The sensitivity towards OSHE and self-learning attitude are to be considered while assessing competency.

Assessment will be evidence based comprising the following:

- Job carried out in labs/workshop
- Record book/ daily diary
- Answer sheet of assessment
- Viva-voce
- Progress chart
- Attendance and punctuality
- Assignment
- Project work



Evidences of internal assessments are to be preserved until forthcoming examination for audit and verification by examining body. The following marking pattern to be adopted while assessing:

Performance Level	Evidence
(a) Weightage in the range of 60%-75% to be allotted during assessment	
For performance in this grade, the candidate should produce work which demonstrates attainment of an acceptable standard of craftsmanship with occasional guidance, and due regard for safety procedures and practices	<ul style="list-style-type: none"> • Demonstration of good skills and accuracy in the field of work/ assignments. • A fairly good level of neatness and consistency to accomplish job activities. • Occasional support in completing the task/ job.
(b)Weightage in the range of 75%-90% to be allotted during assessment	
For this grade, a candidate should produce work which demonstrates attainment of a reasonable standard of craftsmanship, with little guidance, and regard for safety procedures and practices	<ul style="list-style-type: none"> • Good skill levels and accuracy in the field of work/ assignments. • A good level of neatness and consistency to accomplish job activities. • Little support in completing the task/ job.
(c) Weightage in the range of more than 90% to be allotted during assessment	
For performance in this grade, the candidate, with minimal or no support in	<ul style="list-style-type: none"> • High skill levels and accuracy in the field of work/ assignments.

organization and execution and with due regard for safety procedures and practices, has produced work which demonstrates attainment of a high standard of craftsmanship.

- A high level of neatness and consistency to accomplish job activities.
- Minimal or no support in completing the task/ job.



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Embroidery-Machine Operator (Semi-Automatic); tends semiautomatic sewing machine with multiple-sewing heads controlled by pattern chain that embroiders designs on garments or garment parts: Positions garment or part over embroidery hoops arranged in hoop frame, following edges or markings on fabric. Places hoop frame on machine bed and turns thumbscrews to secure frame to machine. Presses button to start machine that sews design onto garment or part and stops, or sews one colour of multiple colour design and stops. When sewing multiple-colour designs, rethreads machine with subsequent colours of thread and starts machine to complete design. Removes hoop frame from machine on completion of design and removes garment or part from hoops.

Embroider, Machine; embroiders various designs on fabric or garments by machines. Selects size and colour of thread and amounts bobbins of thread or machine. Threads needle and passes yarn through carrier of machine. Adjusts machine for thread tension and type of stitch. Presses lever to raise needle and inserts material under it. Guides material or sewing arm of machine in accordance with drawing or outline or guide points of pantograph on enlarged design. Changes thread as required and replace empty bobbins and broken needles. Removes article when embroidering is complete. Cleans and oils machine. May mark outlines of design on material before embroidery is started. May operate machine which embroiders several articles or designs at one time. May be designated as CROCHETING MACHINE OPERATOR if embroiders designs using crocheting machine.

Framer-Computerized Embroidery Machine; is responsible for preparation and setup of the embroidery machine for embroidery and carries out hooping and framing operations. The Framer is also responsible for removal of frame and fabric panel once the embroidery has been completed. While the embroidery is done through the computerized embroidery machine, the Framer needs to monitor the progress, and ensure the required quality of embroidery is achieved.

Reference NCO-2015:

- (i) 8153.0600 – Embroidery-Machine Operator (Semi-Automatic)
- (ii) 8153.0500 – Embroider, Machine
- (iii) 8153.0701 – Framer-Computerized Embroidery Machine

4. GENERAL INFORMATION

Name of the Trade	Computer Aided Embroidery & Designing
NCO - 2015	8153.0600, 8153.0500, 8153.0701
NSQF Level	Level-4
Duration of Craftsmen Training	One Year
Entry Qualification	Passed 10 th class examination
Unit Strength (No. of Student)	24
Space Norms	96 Sq. m
Power Norms	5 KW
Instructors Qualification for:	
(i) Computer Aided Embroidery & Designing Trade	<p>Degree in Textile Designing/ Fashion Technology/ Costume Design & Dress Making from recognized university with one year post qualification experience in the relevant field.</p> <p style="text-align: center;">OR</p> <p>Diploma in Textile Designing/ Fashion Technology/ Costume Design & Dress Making from a recognized board of education with two-year post qualification experience in the relevant field.</p> <p style="text-align: center;">OR</p> <p>NTC/ NAC passed in the relevant Trade with three-year post qualification experience in the relevant field.</p> <p>Essential Qualification: Craft Instructor Certificate in relevant trade under NCVT.</p> <p>Note: <i>Out of two Instructors required for the unit of 2 (1+1), one must have Degree/Diploma and other must have NTC/ NAC qualifications.</i></p>
(ii) Employability Skill	<p>MBA OR BBA with two-year experience OR Graduate in Sociology/ Social Welfare/ Economics with two-year experience OR Graduate/ Diploma with two-year experience and trained in Employability Skills from DGT institutes.</p> <p style="text-align: center;">AND</p> <p>Must have studied English/ Communication Skills and Basic Computer at 12th/ Diploma level and above.</p>

	OR Existing Social Studies Instructors duly trained in Employability Skills from DGT institutes.			
List of Tools and Equipment	As per Annexure – I			
Distribution of training on hourly basis: (Indicative only)				
Total Hrs./ Week	Trade Practical	Trade Theory	Employability Skills	Extracurricular Activity
40 Hours	30 Hours	6 Hours	2 Hours	2 Hours



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5. NSQF LEVEL COMPLIANCE

NSQF level for ‘**Computer Aided Embroidery & Designing**’ trade under CTS: **Level 4**

As per notification issued by Govt. of India dated- 27.12.2013 on National Skill Qualification Framework total 10 (Ten) Levels are defined.

Each level of the NSQF is associated with a set of descriptors made up of five outcome statements, which describe in general terms, the minimum knowledge, skills and attributes that a learner needs to acquire in order to be certified for that level.

Each level of the NSQF is described by a statement of learning outcomes in five domains, known as level descriptors. These five domains are:

- a. Process
- b. Professional knowledge
- c. Professional skill
- d. Core skill
- e. Responsibility

The Broad Learning outcome of ‘**Computer Aided Embroidery & Designing**’ trade under CTS mostly matches with the Level descriptor at Level- 4.

The NSQF level-4 descriptor is given below:

Level	Process Required	Professional Knowledge	Professional Skill	Core Skill	Responsibility
Level 4	Work in familiar, predictable, routine, situation of clear choice	Factual knowledge of field of knowledge or study	Recall and demonstrate practical skill, routine and repetitive in narrow range of application, using appropriate rule and tool, using quality concepts	Language to communicate written or oral, with required clarity, skill to basic Arithmetic and algebraic principles, basic understanding of social political and natural environment	Responsibility for own work and learning

6. LEARNING OUTCOME

Learning outcomes are a reflection of total competencies of a trainee and assessment will be carried out as per the assessment criteria.

6.1 GENERIC LEARNING OUTCOME

1. Apply safe working practices.
2. Comply with environment regulation and housekeeping.
3. Assist in exigencies and carry out elementary first-aid during emergencies.
4. Work in a team, understand and practice soft skills, technical English to communicate with required clarity.
5. Explain energy conservation, global warming and pollution and contribute in day-to-day work by optimally using available resources.
6. Explain personnel finance, entrepreneurship and manage/organize related task in day-to-day work for personal & societal growth.

6.2 SPECIFIC LEARNING OUTCOME

7. Identify and use embroidery tools, machine and operate with safety precautions.
8. Prepare sample basic hand stitches (Temporary & permanent stitch).
9. Attain the skill to prepare sample by both the technique (Hand and Machine).
10. Embroidery Design the following with suitable fabric design using coral draw software. (Indian Dresses, Western Dresses)
11. Set up the machine and machine accessories as per requirement
12. Identify, select and troubleshoot the machine with proper maintenance procedure
13. Develop the skill to make computerized design with the application of software.
14. Setup computerized embroidery machine for transferring the image.
15. Run the computerized embroidery machine for all the digitizing process.
16. Prepare T-shirt used monogramming & logo design.
17. Identify, select and apply the digitizing design and use various techniques e.g. Appliqué work, Sequins work, Taping work, Cording work, Chenille work

7. LEARNING OUTCOME WITH ASSESSMENT CRITERIA

GENERIC LEARNING OUTCOME	
LEARNING OUTCOME	ASSESSMENT CRITERIA
1. Apply safe working practices	1.1 Follow and maintain procedures to achieve a safe working environment in line with occupational health and safety regulations and requirements, and according to policy.
	1.2 Recognize and report all unsafe situations according to policy.
	1.3 Identify and take necessary precautions on fire and safety hazards and report according to work policy and procedures.
	1.4 Identify, handle and store/ dispose-off dangerous goods and substances according to policy and procedures following safety regulations and requirements.
	1.5 Identify and observe policies and procedures with regard to illness or accident.
	1.6 Identify safety alarms accurately.
	1.7 Report supervisor/ competent of authority in the event of accident or sickness of any staff and record accident details correctly according to accident/injury procedures.
	1.8 Identify and observe evacuation procedures according to site policy.
	1.9 Identify Personal Protective Equipment (PPE) and use the same as per related working environment.
	1.10 Identify basic first-aid and use them under different circumstances.
	1.11 Identify different fire extinguisher and use the same as per requirement.
2. Comply with environment regulation and housekeeping	2.1 Identify environmental pollution & contribute to the avoidance of instances of environmental pollution.
	2.2 Deploy environmental protection legislation & regulations.
	2.3 Take opportunities to use energy and materials in an environmentally friendly manner.
	2.4 Avoid waste and dispose waste as per procedure.
3. Assist in exigencies and carry out elementary first-aid during emergencies.	3.1 Demonstrate use of personal protective dresses.
	3.2 Identify emergency exit route.
	3.3 Demonstrate fire fighting procedure using fire extinguishers.
4. Work in a team,	4.1 Obtain sources of information and recognize information.

understand and practice soft skills, technical English to communicate with required clarity.	4.2 Use documents, regulations and occupationally related provisions.
	4.3 Conduct appropriate and target oriented discussions with higher authority and within the team.
	4.4 Present facts and circumstances, possible solutions & use English and French terminology.
	4.5 Resolve disputes within the team.
	4.6 Conduct written communication.
5. Explain energy conservation, global warming and pollution and contribute in day-to-day work by optimally using available resources.	5.1 Explain the concept of energy conservation, global warming, pollution and utilize the available recourses optimally & remain sensitive to avoid environment pollution.
	5.1 Dispose waste following standard procedure.
6. Explain personnel finance, entrepreneurship and manage/organize related task in day-to-day work for personal & societal growth.	6.1 Explain personnel finance and entrepreneurship.
	6.2 Explain role of various schemes and institutes for self-employment i.e. DIC, SIDA, SISI, NSIC, SIDO, Idea for financing/ non-financing support agencies to familiarize with the Policies/Programmes & procedure & the available scheme.
	6.3 Prepare Project report to become an entrepreneur for submission to financial institutions.

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SPECIFIC LEARNING OUTCOME	
LEARNING OUTCOME	ASSESSMENT CRITERIA
7. Identify and use embroidery tools, machine operates with safety precautions.	7.1 Identify embroidery tools.
	7.2 Identify all parts of equipment and their accessories.
	7.3 Clean all parts of equipment.
	7.4 Plan and operate.
	7.5 Identify basic faults and correct.
	7.6 Safety and maintenance.
8. Prepare sample basic hand stitches (Temporary & permanent stitch)	8.1 Identify and use the embroidery tools with safely.
	8.2 Select raw material for Temporary & permanent basic hand stitches.
	8.3 Prepare sample of Temporary stitches such as basting even, basting uneven, diagonal, slip basting.
	8.4 Prepare sample of permanent stitches such as running, hemming, slip, run & back, over casting.
	8.5 Explain difference between Temporary & Permanent stitch
	8.6 Sample should be properly finished and pressed.
9. Demonstrate and prepare sample both technique (Hand and Machine).	9.1 Identify and use the Pressing and Embroidery tools with safety.
	9.2 Select raw material, tools and equipment for tracing method.
	9.3 Prepare sample of running, back, satin and cross stitch by hand embroidery technique.
	9.4 Prepare sample of same stitches by computerized embroidery machine.
	9.5 Explain difference between hand embroidery and machine embroidery.
	9.6 Sample should be properly finished and pressed.
10. Embroidery designs the following with suitable fabric design using coral draw software. (Indian Dresses, Western Dresses)	10.1 Open the software and do the required page setup for the design.
	10.2 Identify and use the suitable tools for designing.
	10.3 Sketch the garment with suitable fabric design.
	10.4 Follow the designing principal.
	10.5 Select the colors and colour combination.
	10.6 Apply colour using colour filling tools.
	10.7 Save the file in a folder and take the print out of the design using colour printer.
11. Set up the machine and	11.1 Identify and use the Pressing and Embroidery tools with safety.

machine accessories as per requirement	11.2	Decide the features and placement of the design (Border, Spray, Corner, Center, Link, etc) suitable for the part of the garment (Sleeves, Yokes, Cuffs, Neck, etc).
	11.3	Draw the design using already installed by following the elements of design.
	11.4	Apply suitable colors to the design by following color scheme.
	11.5	Press the garment part. Transfer the design on the garment.
	11.6	Fix the garment part properly on the embroidery frame.
	11.7	Select suitable embroidery stitches for the design.
	11.8	Start embroidery and complete the design step by step by applying suitable stitches at the required portions.
	11.9	Remove the frame and trim the excess threads.
	11.10	Follow the safety instructions throughout the process.
	12. Identify, select and troubleshoot the machine with proper maintenance procedure.	12.1
12.2		Trouble shoots the machine whenever required.
12.3		Comply with safe operating principal.
12.4		Follow the safety instructions throughout the process.
13. Develop the skill to make computerizes design with the application of software	13.1	Select correct needle, Pressing and Embroidery tools with safety.
	13.2	Open the software (Embroidery Software) and Select already install Design suitable for a Cushion Cover.
	13.3	Digitized and editing stitches.
	13.4	Apply suitable colours to the design.
	13.5	Decide the placement of the design in the fabric.
	13.6	Fix the cushion cover properly on the embroidery frame.
	13.7	Select suitable Machine embroidery stitches for the design.
	13.8	Do the upper and lower threading of the machine.
	13.9	Start embroidery and complete the design step by step by applying suitable stitches at the required portions.
	13.10	Remove the frame trim extra thread and press the cushion cover neatly.
	13.11	Follow safety precaution
14. Setup computerized embroidery machine for transferring the image.	14.1	Open the software and do the required design.
	14.2	Identify and use the suitable tools for designing.
	14.3	Sketch the garment with suitable fabric design.
	14.4	Follow the designing principal.
	14.5	Select the colors and color combination.
	14.6	Apply color using color filling tools.
	14.7	Decide the features and placement of the design.
	14.8	Fix the pillow cover properly on the embroidery frame.

	14.9 Select suitable Machine embroidery stitches for the design.
	14.10 Do the upper and lower threading of the machine.
	14.11 Start embroidery and complete the design step by step by applying suitable stitches at the required portions.
	14.12 Remove the frame trim extra thread and press the pillow cover neatly.
15. Run the computerized embroidery machine for all the digitizing process.	15.1 Open the embroidery software and do the required design.
	15.2 Identify and use the tools for digitizing.
	15.3 Sketch the garment with suitable fabric design.
	15.4 Follow the designing principal.
	15.5 Select suitable stitches for the design.
	15.6 Select the colors and color combination.
	15.7 Apply color using color filling tools.
	15.8 Decide the features and placement of the design.
	15.9 Select correct needles, frame, scissor and thread.
	15.10 Fix the bed sheet properly on the embroidery frame.
	15.11 Do the upper and lower threading of the machine.
	15.12 Start embroidery and complete the design step by step by applying suitable stitches at the required portions.
	15.13 Maintain hygiene.
	15.14 Maintain safety expects.
	15.15 Maintain quality as per requirement.
	15.16 Remove the frame trim extra thread and press the bed sheet neatly.
	15.17 Produce a estimate and cost sheet.
16. Prepare T-shirt used monogramming & logo design.	16.1 Open the embroidery software and do the required design.
	16.2 Identify and use the tools for digitizing.
	16.3 Sketch the garment with suitable fabric design.
	16.4 Follow the designing principal.
	16.5 Select suitable stitches for the design.
	16.6 Select the colors and color combination.
	16.7 Apply color using color filling tools.
	16.8 Decide the features and placement of the design.
	16.9 Select correct needles, frame, scissor and thread.
	16.10 Fix the T- shirt properly on the embroidery frame.
	16.11 Do the upper and lower threading of the machine.
	16.12 Start embroidery and complete the design step by step by applying suitable stitches at the required portions.
	16.13 Maintain hygiene.
	16.14 Maintain safety expects.
	16.15 Maintain quality as per requirement.

	16.16 Remove the frame trim extra thread and press the T- shirt neatly.
	16.17 Produce a estimate and cost sheet.
17. Identify, select and apply the digitizing design and use various techniques e.g. Appliqué work, Sequins work, Taping work, Cording work, Chenille work.	17.1 Open the embroidery software and do the required design.
	17.2 Identify and use the tools for digitizing.
	17.3 Sketch the garment with suitable fabric design.
	17.4 Follow the designing principal.
	17.5 Select suitable stitches for the design.
	17.6 Select the colors and color combination.
	17.7 Apply color using color filling tools.
	17.8 Decide the features and placement of the design.
	17.9 Select correct needles, frame, scissor and thread.
	17.10 Fix the sari properly on the embroidery frame.
	17.11 Do the upper and lower threading of the machine.
	17.12 Start embroidery and complete the designs use appliqué, sequins, taping, cording and chenille step by step by applying suitable stitches at the required portions.
	17.13 Maintain hygiene.
	17.14 Maintain safety expects.
	17.15 Maintain quality as per requirement.
	17.16 Remove the frame trim extra thread and press the bed sheet neatly.
	17.17 Produce a estimate and cost sheet.

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SYLLABUS - COMPUTER AIDED EMBROIDERY & DESIGNING			
Duration – One Year			
Week No.	Reference Learning Outcome	Professional Skills (Trade Practical) With Indicative Hours	Professional Knowledge (Trade Theory)
1	Apply safe working practices.	1. Familiarization with the present trend of computerized Embroidery by showing samples. (10 hrs.) 2. Familiarization with Machine & software. (10 hrs.) 3. Observe Safety Precautions. (10 hrs.)	Familiarization with the Institute Introduction to the Trade <ul style="list-style-type: none"> • History and Invention • Today's requirements Job Prospects and objective of the course
2	Identify and use embroidery tools, machine and operate with safety precautions.	4. Familiarization & Handling of Tools with Safety Practical Exercises on. (30 hrs.) <ul style="list-style-type: none"> • Color Wheel • Color Schemes • Identify the fabric 	Knowledge of Trade related Tools & their Importance. Knowledge of Color Wheel and color Schemes.
3	Prepare sample basic hand stitches (Temporary & permanent stitch).	5. Basic Hand Stitches (30 hrs.) <ul style="list-style-type: none"> • Temporary <ul style="list-style-type: none"> ➤ Basting even ➤ Basting uneven ➤ Diagonal ➤ Slip basting • Permanent <ul style="list-style-type: none"> ➤ Running stitch ➤ Hemming stitch ➤ Slip stitch ➤ Run and back stitch ➤ Over casting ➤ Whip stitch 	Knowledge of Hand Embroidery & Stitches
4-6	Attain the skill to prepare sample by both the technique (Hand and Machine).	6. Computer embroidery knowledge by showing swatch collection made by different machines. (15hrs.) 7. Start and shutdown process of machine. (15hrs.) 8. Familiarize with different	Different types of Embroidery and Computerized embroidery machine. Computerized embroidery and its importance. <ul style="list-style-type: none"> • Introduction to computer embroidery stitches.

		<p>stitches by running computer embroidery machine. (15hrs.)</p> <p>9. Traditional embroidery: Making Embroidery samples according to different state on traditional fabric and traditional threads and traditional motif. (15hrs.)</p> <p>10. Familiarization with different equipment related to machine. (15hrs.)</p> <p>11. Familiarization with tools of embroidery machines. (15hrs.)</p>	<ul style="list-style-type: none"> • Manual • Run and triple run • Satin • Step/tatami • Piping/contour • Introduction to Traditional Embroidery according to different states • Its origin • Fabric used • Threads used • Traditional motif • Introduction of equipment related to computerized embroidery. • Parts of computerized embroidery machine
7-10	Design the following with suitable fabric design using coral draw software. (Indian Dresses, Western Dresses)	<p>12. Familiarize with personal computer and its parts. (10 hrs.)</p> <p>13. Starting a Personal computer and starting software's like paintbrush, coral draw. (20 hrs.)</p> <p>14. Mouse practice. (05 hrs.)</p> <p>15. Practice on paint brush. (15 hrs.)</p> <p>16. Making designs and colouring. (20 hrs.)</p> <p>17. Practice on coral draw and different software. (30 hrs.)</p> <p>18. Making designs and colouring on software. (15 hrs.)</p> <p>19. Use of scanner. (05 hrs.)</p>	<ul style="list-style-type: none"> • Introduction and function of various parts of computer also relate it to computerized embroidery machine. • Basic knowledge of computer. • Introduction to Corel Draw. • Commands like cut, copy, paste and text writing.
11-12	Set up the machine and machine accessories as per requirement	<p>Machine operation</p> <p>20. How to change needle in details and its tools. (10 hrs.)</p> <p>21. Precautions while changing needle. (20hrs.)</p> <p>22. Needle control according to design. (30hrs.)</p>	<ul style="list-style-type: none"> • Types of Needle and their uses and handling. <ul style="list-style-type: none"> ➤ Needle precautions ➤ Types of needle ➤ Checking the needle ➤ Selection of needle according to fabric
13	-do-	23. Load thread on machine. (10 hrs.)	<ul style="list-style-type: none"> • Types of Embroidery Threads

		<p>24. Winding/installing the bobbin. (10 hrs.)</p> <p>25. Bobbin precaution. (10 hrs.)</p>	<ul style="list-style-type: none"> ➤ Brief knowledge of threads. ➤ Composition ➤ Benefits and disadvantages of different kinds of thread. • Difference between upper thread and bobbin thread.
14	-do-	<p>26. Use of different fabric on computerized embroidery machine. (10 hrs.)</p> <p>27. Practicing on running machine tension making of upper thread and bobbin thread. (20 hrs.)</p>	<p>Type of Fabrics</p> <ul style="list-style-type: none"> • How to handle different-different fabrics. • Benefits and disadvantage of heavy and light fabrics. • Details Knowledge of • Machine Head, tension point, sensors etc. • Embroidery process • Head working area and stitch formation.
15	Identify, select and troubleshoot the machine with proper maintenance procedure	<p>28. Machine oiling and maintenance. (05 hrs.)</p> <p>29. Practice running designs on machine already available in machine. (10 hrs.)</p> <p>30. Machine working in simple embroidery and specialized embroidery like sequins, tapping& cording, Chenilleetc (videos or photo). (15 hrs.)</p>	<ul style="list-style-type: none"> • Maintenance of machines and Safe operating principle.
16	Develop the skill to make computerizes design with the application of software.	<p>Hooping Practice</p> <p>31. Clipping fabric on pantograph. (05 hrs.)</p> <p>32. Placement of design and making origin of design. (10 hrs.)</p> <p>33. Practice deigns already installed in machine. (05 hrs.)</p> <p>34. Familiarize with backing paper or stabilizing material. (10 hrs.)</p>	<ul style="list-style-type: none"> • Stabilizers/backing their typesand uses. • Need of stabilizing fabric.
17-18	-do-	<p>35. Design input and output methods from software to</p>	<ul style="list-style-type: none"> • Knowledge of digitizing software and machine keys.

		<p>machine and machine to software. (30 hrs.)</p> <p>36. Operating a machine and loading designs and setting origin. (30 hrs.)</p>	<ul style="list-style-type: none"> • Description of software and its need. • How software works (x-axis and Y-axis). • How software designs linked with machine. • Introduction of digitizing software like software interface etc.
19-21	-do-	<p>37. Practice of running design with threading, changing needle, loading designs from software to machine etc. (60 hrs.)</p> <ul style="list-style-type: none"> • Loading designs from software to UBS- drive. • Loading design to machine • Setting origin. <p>38. Threading and running designs on fabric.(30 hrs.)</p>	
22-23	<p>Project work/ Industrial visit/ Market survey</p> <p>Broad Areas:</p> <p>a) New design as per requirement of customer - At least 5 types</p>		
24-26	Revision		
27-28	Setup computerized embroidery machine for transferring the image.	<p>39. Transferring of Images and sketches in software design Related to paintbrush and coral draw with the software. (40 hrs.)</p> <p>40. Joining big images. (20 hrs.)</p>	<ul style="list-style-type: none"> • Use of scanner with digitizing software. • Importance of scanner
29-40	Run the computerized embroidery machine for all the digitizing process.	<p>Software digitizing</p> <p>41. Type of stitches. (30 hrs.)</p> <p>42. Digitization process and all commands in software. (150 hrs.)</p> <p>43. Stitch control and smooth running of machine as per digitizing. (100 hrs.)</p> <p>44. Limitation of software. (50 hrs.)</p> <p>45. Benefits of using</p>	<p>Detailed study of digitizing procession software.</p> <ul style="list-style-type: none"> • Learn different stitches with examples on machine. • Making design on software. • Loading digitized designs in machine by students • Information of design on LCD (Liquid Crystal

		software.(30 hrs.)	display) <ul style="list-style-type: none"> • Details knowledge of machine regarding Area and its capabilities.
41-42	-do-	Machine designs functions and tools. 46. Resize design with machine. Flip, rotate etc. (20 hrs.) 47. Move to particular point. (20 hrs.) 48. Placement information and origin making. (20 hrs.)	Setting of design on different articles <ul style="list-style-type: none"> • Placement specification like with printing.
43-44	Prepare T-shirt used monogramming & logo design.	49. Operating machine on self-made design. (20 hrs.) 50. Monogramming and logo making on designs. (40 hrs.)	Knowledge of Monogram & Logo
45	Identify, select and apply the digitizing design and use various techniques e.g. Appliqué work, Sequins work, Taping work, Cording work, Chenille work.	51. Digitizing Chemical lace designs. (10 hrs.) 52. Appliqué/patching. (10 hrs.) 53. Using Two Fabrics, patch works. (05 hrs.) 54. Chemical laces (05 hrs.)	Advance techniques in Machine Embroidery
46-47	-do-	55. Advance Digitizing. (10 hrs.) 56. Digitizing of Sequins. (10 hrs.) 57. Digitizing of Taping & cording. (10 hrs.) 58. Digitizing of Chenille. (10 hrs.) 59. Precautions in handling these special attachments. (10 hrs.) 60. Making embroidery samples on garments: (10 hrs.) <ul style="list-style-type: none"> • Dresses neckline • Patch embroidery • Chanya choli • Logo designing • Blouse • Kurtas 	Detailed knowledge of special Attachments on Operating machine on self-made design. <ul style="list-style-type: none"> • How to handle these attachments • Knowledge of changing guides for sequins and cording tapping device.

		<ul style="list-style-type: none"> • Indo western 	
48-49	Project work/ Industrial visit: a) New design in digitizing technique		
50-51	Revision		
52	Examination		

Note: -

1. Some of the sample project works (indicative only) are given at the mid and end of year.
2. Instructor may design their own project and also inputs from local industry may be taken for designing such new project.
3. The project should broadly cover maximum skills in the particular trade and must involve some problem solving skill. Emphasis should be on Teamwork: Knowing the power of synergy/ collaboration, work to be assigned in a group (Group of at least 4 trainees). The group should demonstrate Planning, Execution, Contribution and Application of Learning. They need to submit Project report.
4. If the instructor feels that for execution of specific project more time is required then he may plan accordingly in appropriate time during the execution of normal trade practical.

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9. SYLLABUS - CORE SKILLS

CORE SKILL – EMPLOYABILITY SKILL	
Duration – 110 hrs.	
1. English Literacy	Duration : 20 hrs. Marks : 09
Pronunciation	Accentuation (mode of pronunciation) on simple words, Diction (use of word and speech)
Functional Grammar	Transformation of sentences, Voice change, Change of tense, Spellings.
Reading	Reading and understanding simple sentences about self, work and environment
Writing	Construction of simple sentences Writing simple English
Speaking/ Spoken English	Speaking with preparation on self, on family, on friends/ classmates, on known people, 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 on messages and filling in message forms, Greeting and introductions, office hospitality, Resumes or curriculum vita essential parts, letters of application reference to previous communication.
2. IT Literacy	Duration : 20 hrs. Marks : 09
Basics of Computer	Introduction, Computer and its applications, Hardware and peripherals, Switching on-Starting and shutting down of the computer.
Computer Operating System	Basics of Operating System, WINDOWS, The user interface of Windows OS, Create, Copy, Move and delete Files and Folders, Use of External memory like pen drive, CD, DVD etc. Use of Common applications.
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.
Computer Networking and Internet	Basic of Computer Networks (using real life examples), Definitions of Local Area Network (LAN), Wide Area Network (WAN), Internet, Concept of Internet (Network of Networks), Meaning of World Wide Web (WWW), Web Browser, Website, Web page and Search Engines. 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. Information Security and antivirus tools, Do's and Don'ts in Information Security, Awareness of IT - ACT, types of cyber crimes.
3. Communication Skills	
	Duration : 15 hrs. Marks : 07
Introduction to Communication Skills	Communication and its importance Principles of effective communication Types of communication - verbal, non-verbal, written, email, talking on phone. Non-verbal communication -characteristics, components-Para-language Body language Barriers to communication and dealing with barriers. Handling nervousness/ discomfort.
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.
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.
Facing Interviews	Manners, etiquettes, dress code for an interview Do's & don'ts for an interview

Behavioral Skills	Problem solving Confidence building Attitude
4. Entrepreneurship Skills	
Duration : 15 hrs. Marks : 06	
Concept of Entrepreneurship	Entrepreneur - Entrepreneurship - Enterprises: Conceptual issue Entrepreneurship vs. management, Entrepreneurial motivation. Performance & record, Role & function of entrepreneurs in relation to the enterprise & relation to the economy, Source of business ideas, Entrepreneurial opportunities, The process of setting up a business.
Project Preparation & Marketing Analysis	Qualities of a good entrepreneur, SWOT and risk analysis. Concept & Application of PLC, Sales & Distribution management. Difference between small scale & large scale business, Market survey, Method of marketing, Publicity and advertisement, Marketing mix.
Institution's 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 familiarize with the policies / programmes, procedure & the available scheme.
Investment Procurement	Project formation, Feasibility, Legal formalities i.e., Shop act, Estimation & costing, Investment procedure - Loan procurement - Banking processes.
5. Productivity	
Duration : 10 hrs. Marks : 05	
Benefits	Personal/ Workman - Incentive, Production linked Bonus, Improvement in living standard.
Affecting Factors	Skills, Working aids, Automation, Environment, Motivation - How it improves or slows down productivity.
Comparison with Developed Countries	Comparative productivity in developed countries (viz. Germany, Japan and Australia) in select industries, e.g. Manufacturing, Steel, Mining, Construction etc. Living standards of those countries, wages.
Personal Finance Management	Banking processes, Handling ATM, KYC registration, safe cash handling, Personal risk and insurance.
6. Occupational Safety, Health and Environment Education	
Duration : 15 hrs. Marks : 06	
Safety & Health	Introduction to occupational safety and health Importance of safety and health at workplace.

Occupational Hazards	Basic hazards, chemical hazards, vibroacoustic hazards, mechanical hazards, electrical hazards, thermal hazards. occupational health, occupational hygiene, occupational diseases/ disorders & its prevention.
Accident & Safety	Basic principles for protective equipment. Accident prevention techniques - control of accidents and safety measures.
First Aid	Care of injured & sick at the workplaces, First-aid & transportation of sick person.
Basic Provisions	Idea of basic provision legislation of India. Safety, health, welfare under legislative of India.
Ecosystem	Introduction to environment. Relationship between society and environment, ecosystem and factors causing imbalance.
Pollution	Pollution and pollutants including liquid, gaseous, solid and hazardous waste.
Energy Conservation	Conservation of energy, re-use and recycle.
Global Warming	Global warming, climate change and ozone layer depletion.
Ground Water	Hydrological cycle, ground and surface water, Conservation and harvesting of water.
Environment	Right attitude towards environment, Maintenance of in-house environment.
7. Labour Welfare Legislation	
Duration : 05 hrs. Marks : 03	
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.
8. Quality Tools	
Duration : 10 hrs. Marks : 05	
Quality Consciousness	Meaning of quality, Quality characteristic.
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.
Quality Management System	Idea of ISO 9000 and BIS systems and its importance in maintaining qualities.
House Keeping	Purpose of housekeeping, Practice of good housekeeping.
Quality Tools	Basic quality tools with a few examples.



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LIST OF TOOLS & EQUIPMENT			
COMPUTER AIDED EMBROIDERY & DESIGNING (for batch of 24 Candidates)			
S No.	Name of the Tools and Equipment	Specification	Quantity
A. TRAINEES TOOL KIT (consumable item)			
1.	Measuring Tape	150 cm	25 Nos.*
2.	Seam Ripper		25 Nos. *
3.	Thimble		25 Nos. *
4.	Thread cutter		25 Nos. *
5.	Color plate		25 Nos. *
6.	Color brush	No. 00,1, 2	25 Nos. each*
7.	Scale plastic	12"	25 Nos. *
8.	Compass		25 Nos. *
9.	Hangers	Wooden hangers	25 Nos. *
10.	Embroidery Ring	Size 1,2,3,4,5,6,7	25 Nos. each*
11.	Stencil	Different shapes and design, Numerical and alphabets,	25 Nos. each*
12.	Pick glass		25 Nos. *
13.	Water colour		25 Nos. *
14.	Eraser, Pencil, Sharpner		25 Nos. *
B. MACHINE LABORATORY			
15.	Computerized embroidery machine (multi needle) with necessary		12 Nos. *
16.	Attachments/accessories		As required
17.	Trade related software		04 Nos.
18.	Coral draw software		04 Nos.
19.	Computer system with UPS, Operating system, Antivirus and Internet	Latest Configuration	10 Nos.
20.	Printer		01 No.
21.	Scanner		01 No.
22.	Automatic Sewing Machine		02 Nos.
23.	Round table with step for embroidery machines		12 Nos. *
24.	Automatic Electric Press		01 No.
25.	Air Conditioner	Split 2 Ton capacity	02 Nos.

26.	Dummy		02 Nos.
27.	Carpet	Size as per requirement	01 No.
28.	Frames/hoops		01 set
29.	Pinking scissors		05 Nos.
30.	Appliqué scissors		04 No.
31.	Cutting scissors		24 Nos. *
32.	Trainees lockers (10 lockers)		02 Unit
33.	Wall clock		01 No.
34.	Calculator		01 No.

C. THEORY ROOM

35.	Single desks for trainees with arrangements of keeping Books etc.	chair with desk	24 Nos. *
36.	Faculty Table & Chair set		01 No.
37.	Computer set with UPS & multimedia projector		01 No.
38.	White Magnetic Board with Felt board & accessories		01 No.
39.	Display Board		02 Nos.
40.	Storage Almirah		03 Nos.
41.	Book Shelf		01 No.
42.	A/C unit split type	2 TR capacity with Stabilizer	As per required

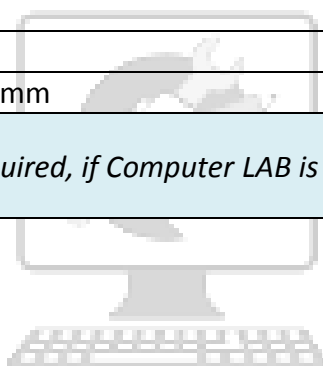
Note: -

1. All the tools and equipment are to be procured as per BIS specification.
2. Quantity marked with * has been increased as per the batch size.
3. Internet facility is desired to be provided in the class room.

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TOOLS & EQUIPMENT FOR EMPLOYABILITY SKILLS		
S No.	Name of the Equipment	Quantity
1.	Computer (PC) with latest configurations and Internet connection with standard operating system and standard word processor and worksheet software.	12 nos. *
2.	UPS - 500VA	12 nos. *
3.	Scanner cum Printer	01 no.
4.	Computer Tables	12 nos. *
5.	Computer Chairs	24 nos. *
6.	LCD Projector	01 no.
7.	White Board 1200mm x 900mm	01 no.

Note: Above Tools & Equipments not required, if Computer LAB is available in the institute.



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FORMAT FOR INTERNAL ASSESSMENT

Name & Address of the Assessor:			Year of Enrollment:											
Name & Address of ITI (Govt./Pvt.):			Date of Assessment:											
Name & Address of the Industry:			Assessment location: Industry / ITI											
Trade Name:		Examination:		Duration of the Trade/course:										
Learning Outcome:														
S No.	Maximum Marks (Total 100 Marks)		15	5	10	5	10	10	5	10	15	15	Total Internal Assessment Marks	Result (Y/N)
	Candidate Name	Father's/Mother's Name	Safety Consciousness	Workplace Hygiene & Economical use of materials	Attendance/ Punctuality	Ability to follow Manuals/ Written instructions	Application of Knowledge	Skills to Handle Tools/ Equipment/ Instruments/ Devices	Economical use of Materials	Working Strategy	Quality in Workmanship/ Performance	VIVA		
1														
2														