# COMPUTER AIDED EMBROIDERY & DESIGNING

**NSQF LEVEL- 6**


**SECTORS - APPAREL**

## COMPETENCY BASED CURRICULUM

### CRAFT INSTRUCTOR TRAINING SCHEME (CITS)

GOVERNMENT OF INDIA
Ministry of Skill Development & Entrepreneurship
Directorate General of Training
**CENTRAL STAFF TRAINING AND RESEARCH INSTITUTE**
EN-81, Sector-V, Salt Lake City, Kolkata – 700091

# COMPUTER AIDED EMBROIDERY & DESIGNING

**(Non-Engineering Trade)**

## SECTOR – APPAREL

**(Designed in 2020)**

**Version: 1.0**

**CRAFT INSTRUCTOR TRAINING SCHEME (CITS)**

**NSQF LEVEL - 6**

Developed By

Government of India
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EN-81, Sector-V, Salt Lake City, Kolkata – 700 091
www.cstaricalutta.gov.in

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# 1. COURSE OVERVIEW

The Craft Instructor Training Scheme is operational since inception of the Craftsmen Training Scheme. The first Craft Instructors' Training Institute was established in 1948. Subsequently, 6 more institutes namely, Central Training Institute for Instructors (now called as National Skill Training Institute (NSTI)), NSTI at Ludhiana, Kanpur, Howrah, Mumbai, Chennai and Hyderabad were established in 1960's by DGT. Since then the CITS course is successfully running in all the NSTIs across India as well as in DGT affiliated institutes viz. Institutes for Training of Trainers (IToT). This is a competency based course of one year duration. "Computer Aided Embroidery & Designing" CITS trade is applicable for Instructors of "Computer Aided Embroidery & Designing" Trade.

The main objective of Craft Instructor training programme is to enable Instructors explore different aspects of the techniques in pedagogy and transferring of hands-on skills so as to develop a pool of skilled manpower for industries, also leading to their career growth & benefiting society at large. Thus promoting a holistic learning experience where trainee acquires specialized knowledge, skills & develops attitude towards learning & contributing in vocational training ecosystem.

This course also enables the instructors to develop instructional skills for mentoring the trainees, engaging all trainees in learning process and managing effective utilization of resources. It emphasizes on the importance of collaborative learning & innovative ways of doing things. All trainees will be able to understand and interpret the course content in right perspective, so that they are engaged in & empowered by their learning experiences and above all, ensure quality delivery.

# 2. TRAINING SYSTEM

## 2.1 GENERAL

CITS courses are delivered in National Skill Training Institutes (NSTIs) & DGT affiliated institutes viz., Institutes for Training of Trainers (IToT). For detailed guidelines regarding admission on CITS, instructions issued by DGT from time to time are to be observed. Further complete admission details are made available on NIMI web portal http://www.nimionlineadmission.in.The course is of one-year duration. It consists of Trade Technology (Professional skills and Professional knowledge), Training Methodology and Engineering Technology/ Soft skills. After successful completion of the training programme, the trainees appear in All India Trade Test for Craft Instructor. The successful trainee is awarded NCIC certificate by DGT.

## 2.2 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. | **Trade Technology** | |
| | Professional Skill (Trade Practical) | 640 |
| | Professional Knowledge (Trade Theory) | 240 |
| 2. | **Soft Skills** | |
| | Practical | 100 |
| | Theory | 100 |
| 3. | **Training Methodology** | |
| | TM Practical | 320 |
| | TM Theory | 200 |
| | **Total** | **1600** |

## 2.3 PROGRESSION PATHWAYS

- Can join as an Instructor in vocational training Institute/ technical Institute.
- Can join as a supervisor in Industries.
- Run their own Embroidery unit
- Can progress as Digitizer in relevant Industry

## 2.4 ASSESSMENT & CERTIFICATION

The CITS trainee will be assessed for his/her Instructional skills, knowledge and attitude towards learning throughout the course span and also at the end of the training program.

a) The Continuous Assessment (Internal) during the period of training will be done by **Formative Assessment Method** to test competency of instructor with respect to assessment criteria set against each learning outcomes. The training institute has to maintain an individual trainee portfolio in line with assessment guidelines. The marks of internal assessment will be as per the formative assessment template provided on[www.bharatskills.gov.in](http://www.bharatskills.gov.in)

b) The **Final Assessment** will be in the form of **Summative Assessment Method**. The All India Trade Test for awarding National Craft Instructor Certificate will be conducted by DGT as per the guidelines of DGT. The learning outcome and assessment criteria will be the basis for setting question papers for final assessment**.** The external 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 CRITERIA

| Sl. No. | Subject | | Marks | Internal Assessment | Full Marks | Pass Marks | |
|---|---|---|---|---|---|---|---|
| | | | | | | Exam | Internal Assessment |
| 1. | Trade Technology | Trade Theory | 100 | 40 | 140 | 40 | 24 |
| | | Trade Practical | 200 | 60 | 260 | 120 | 36 |
| 2. | Soft Skills | Practical | 50 | 25 | 75 | 30 | 15 |
| | | Theory | 50 | 25 | 75 | 20 | 15 |
| 3. | Training Methodology | TM Practical | 200 | 30 | 230 | 120 | 18 |
| | | TM Theory | 100 | 20 | 120 | 40 | 12 |
| | Total Marks | | **700** | **200** | **900** | **370** | **120** |

The minimum pass percent for Trade Practical, TM Practical, Soft Skill Practical Examinations and Formative assessment is 60% & for all other subjects is 40%. There will be no Grace marks.

## 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. While assessing, the major factors to be considered are approaches to generate solutions to specific problems by involving standard/non-standard practices.

Due consideration should also 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 of the following:

- Demonstration of Instructional Skills (Lesson Plan, Demonstration Plan)
- Record book/daily diary
- Assessment Sheet
- Progress chart
- Video Recording
- Attendance and punctuality
- Viva-voce
- Practical work done /Models
- Assignments
- Project work

Evidences and records of internal (Formative) 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 be well versed with instructional design, implement learning programme and assess learners which demonstrates attainment of an ***acceptable standard*** of crafts instructorship with ***occasional*** **guidance** and engage students by demonstrating good attributes of a trainer. | • Demonstration of ***fairly good*** skill to establish a rapport with audience, presentation in orderly manner and establish as an expert in the field.<br>• Average engagement of students for learning and achievement of goals while undertaking the training on specific topic.<br>• A fairly good level of competency in expressing each concept in terms the student can relate, draw analogy and summarize the entire lesson.<br>• Occasional support in imparting effective training. |
| (b) Weightage in the range of 75%-90% to be allotted during assessment | |
| For performance in this grade, the candidate should be well versed with | • Demonstration of ***good*** skill to establish a rapport with audience, presentation in |

| | |
|---|---|
| instructional design, implement learning programme and assess learners which demonstrates attainment of a ***reasonable standard*** of crafts instructorship with ***little*** **guidance** and engage students by demonstrating good attributes of a trainer. | orderly manner and establish as an expert in the field.<br>• Above average engagement of students for learning and achievement of goals while undertaking the training on specific topic.<br>• A ***good*** level of competency in expressing each concept in terms the student can relate, draw analogy and summarize the entire lesson.<br>• Little support in imparting effective training. |
| (c) Weightage in the range of more than 90% to be allotted during assessment | |
| For performance in this grade, the candidate should be well versed with instructional design, implement learning programme and assess learners which demonstrates attainment of a ***high standard*** of crafts instructorship with ***minimal or no support*** and engage students by demonstrating good attributes of a trainer. | • Demonstration of ***high*** skill level to establish a rapport with audience, presentation in orderly manner and establish as an expert in the field.<br>• Good engagement of students for learning and achievement of goals while undertaking the training on specific topic.<br>• A ***high*** level of competency in expressing each concept in terms the student can relate, draw analogy and summarize the entire lesson.<br>• Minimal or no support in imparting effective training. |

## 3. GENERAL INFORMATION

| | |
|---|---|
| **Name of the Trade** | **COMPUTER AIDED EMBROIDERY & DESIGNING – CITS** |
| **Trade Code** | DGT/4048 |
| **NCO – 2015** | 2356.0100 |
| **NSQF Level** | Level-6 |
| **Duration of Craft Instructor Training** | One Year |
| **Unit Strength (No. Of Student)** | 25 |
| **Entry Qualification** | Degree / Diploma (Minimum 2 Years) in Fashion Technology / Fashion Designing and Technology from recognized Board / University.<br>OR<br>National Trade Certificate in Computer Aided Embroidery & Designing trade or related trades.<br>OR<br>National Apprenticeship Certificate in Computer Aided Embroidery & Designing trade or related trade. |
| **Minimum Age** | 18 years as on first day of academic session. |
| **Space Norms** | Theory Room - 65 Sq. m<br>Computer Lab - 65 Sq. m<br>Embroidery Lab 120 sq m |
| **Power Norms** | 8 KW |
| **Instructor's Qualification for** | |
| **1. Computer Aided Embroidery & Designing (CITS) Trade** | B.Voc /Degree in Fashion Technology/ Fashion Deigning and Technology from from AICTE/ UGC recognized Board / University with two years experience in relevant field.<br>**OR**<br>Diploma (Minimum 2 years) in Fashion Technology/ Fashion Designing and Technology from recognized Board / University or relevant Advanced Diploma (Vocational) from DGT with five years experience in relevant field.<br>**OR**<br>NTC/ NAC passed in 'Computer Aided Embroidery & Designing' trade with seven years experience in relevant field.<br><br>**<u>Essential Qualification:</u>**<br>National Craft Instructor Certificate (NCIC) in 'Computer Aided Embroidery & Designing', in any of the variants under DGT.<br>(Trainees completed National Craft Instructor Certificate in 'Surface Ornamentation Techniques' from the year 2015 to 2020 are also eligible ) |

| | |
|---|---|
| **2. Soft skills** | MBA/ BBA / Any Graduate/ Diploma in any discipline from AICTE/ UGC recognized College/ university with Three years' experience and short term ToT Course in Soft Skills from DGT institutes.<br>(Must have studied English/ Communication Skills and Basic Computer at 12th / Diploma level and above). |
| **3. Training Methodology** | B.Voc/ Degree in any discipline from AICTE/ UGC recognized College/ university with two years experience in training/ teaching field.<br>**OR**<br>Diploma in any discipline from recognized board / University with five years experience in training/teaching field.<br>**OR**<br>NTC/ NAC passed in any trade with seven years experience in training/ teaching field.<br><br>**<u>Essential Qualification:</u>**<br>National Craft Instructor Certificate (NCIC) in any of the variants under DGT / B.Ed /ToT from NITTTR or equivalent. |
| **4. Minimum Age for Instructor** | 21 Years |

**Distribution of training on Hourly basis: (Indicative only)**

| Total Hrs /week | Trade Practical | Trade Theory | Soft Skills | | TM Practical | TM Theory |
|---|---|---|---|---|---|---|
| | | | Practical | Theory | | |
| 40 Hours | 16 Hours | 6 Hours | 2.5 Hours | 2.5 Hours | 8 Hours | 5 Hours |

## 4. JOB ROLE

**Manual Training Teacher/Craft Instructor;** instructs students in ITIs/Vocational Training Institutes in respective trades as per defined job role. Imparts theoretical instructions for the use of tools & equipment of related trades and related subjects. Demonstrate process and operations related to the trade in the workshop; supervises, assesses and evaluates students in their practical work. Ensures availability & proper functioning of equipment and tools in stores.

**Entrepreneur (Computerized Embroidery):** Entrepreneur can run business by using Computer Aided Machine Embroidery related knowledge and skills by setting his/ her own unit after searching target market. Can set up the machine with accessories and Produces various designs on fabric or garment by multihead computerised embroidery machine. Identify all necessary supplies required e.g. needle, fabric, stabilizers, and threads etc. Able to manage all the embroidery process for mass production. Able to edit designs and conversions of design. Estimates and fix the cost of embroidered article.

**Free Lancer ( Embroidery Design Developer):** Free Lancer can develop own designs for embroidery irrespective of hand or machine embroidery by using CorelDraw or embroidery digitizing software and share with different embroidery units. Can also develop customised/specialised designs. Able to digitize designs for special embroideries.

**Free Lancer (Embroidery Designs by CorelDraw software):** Free Lancer can develop own designs for embroidery irrespective of hand or machine embroidery by using coral draw software and share with different embroidery units. Can also develop customised/ specialised designs. Uses the CorelDraw tools to create and edit vector art work for embroidery digitizing. Able to use all the tool sets for develop and transforming a small motif to a large design. Scans sketches and artwork and traces bitmaps to convert them to vector graphics.

**Embroidery Digitizer:** One who can perform the following functions – Able for transforming pre existing artwork into machine embroidery design file by using Embroidery software, with a series of commands so that embroidery machine can stitch the art work into a finished work. Able to operate the computerised embroidery machine, single head or multi head with accessories and attachments. Able to develop designs by CorelDraw or embroidery digitizing software. Able to run the machine for specialised work like Sequins, cording, chenille, taping & aari work. Able to develop lace work/ cut work with machine.

**Reference NCO-2015:**

a) 2356.0100 – Manual Training Teacher/ Craft Instructor.

# 5. LEARNING OUTCOMES

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

## 5.1 TRADE TECHNOLOGY

1. Develop embroidery design by using CorelDraw software and embroidery digitizing software on basic level.
2. Demonstrate multi head computerized embroidery machine with proper knowledge about its tools.
3. Set up the machine and machine accessories as per requirement and Demonstrate the threading process according to the fabric type, needles and threads used.
4. Identifying defect and their troubleshooting while making designs on machine.
5. Demonstrate the process of digitizing designs on software for mass production on multi head embroidery machine for industrial work.
6. Demonstrate the digitizing process of specialized embroidery designs and set up the attachments.
7. Prepare different specialized embroidery samples with use of special attachments.
8. Create decorative embroidery designs and run the machine to develop various design.
9. Set up the Computerized Aari Embroidery Machine with proper knowledge about parts, maintenance and capabilities
10. Operate Computerized Aari Embroidery Machine and make Aari embroidery designs with safety.
11. Attain knowledge of placement setting of designs on different articles with machine.

## 6. COURSE CONTENT

| SYLLABUS FOR COMPUTER AIDED EMBROIDERY & DESIGNING (CITS TRADE ) | | | |
|---|---|---|---|
| **TRADE TECHNOLOGY** | | | |
| **Duration** | **Reference Learning Outcome** | **Professional Skills (Trade Practical)** | **Professional Knowledge (Trade Theory)** |
| Practical 32 Hrs<br><br>Theory 12 Hrs | Develop embroidery design by using CorelDraw software and embroidery digitizing software on basic level. | 1. Practice of making design in Corel Draw.<br>2. Practice of making design in embroidery digitizing software. | • Knowledge of trade and job prospects<br>• Revision of CTS contents |
| Practical 16 Hrs<br><br>Theory 06 Hrs | Demonstrate multi head computerized embroidery machine with proper knowledge about its tools. | 3. Identify multi head embroidery machine<br>4. Recognize Tools and equipment as per requirement<br>5. Perform Machine oiling and maintenance | • Describe Different types of computerized embroidery machine (Domestic and industrial model)<br>• Identify Related tools and their importance<br>• Memorize Importance of machine maintenance<br>• Memorize Safe operating principal |
| Practical 48 Hrs<br><br>Theory 18 Hrs | Set up the machine and machine accessories as per requirement and Demonstrate the threading process according to the fabric type, needles and threads used. | 6. Practice of Multi head computerized embroidery machine operations<br>• Start and shutdown process of machine<br>• Loading thread on machine<br>• Upper thread tension<br>• Winding/installing the bobbin<br>• Changing needle<br>7. Clipping fabric with stabilizer on pantograph/frame | • Describe the Parts of computerized embroidery machine<br>• Recognize machine area and its capabilities<br>• Understand the fabric classification/construction/weight to select the needle and threads accordingly.<br>• Describe handling of different fabrics<br>• Describe Importance of stabilizers/backing material and sprays |
| Practical 64 Hrs<br><br>Theory 24 Hrs | Identifying defect and their troubleshooting while making design on machine. | 8. Load design to multi head embroidery machine<br>• Setting of origin<br>• Familiarization with control panel | • Describe machine operating system/software<br>• Describe Information of design on control panel (display unit) |

| | | | |
|---|---|---|---|
| | | | Define Troubleshooting<br>• Needle break, thread break, puckering and bird nesting etc. |
| Practical<br>96 Hrs<br><br>Theory<br>36 Hrs | Demonstrate the process of digitizing designs on software for mass production on multi head embroidery machine for industrial work. | 9. Setting of self-made designs for multi head machine and practice operating machine<br>• Repeat set<br>• Stitch control and smooth running of machine<br>10. Practice of making borders and buta designs for running material e.g. saree, suit, bedsheet and duppattas etc. | • Define Different digitizing software. |
| Practical<br>80 Hrs<br><br>Theory<br>30 Hrs | Demonstrate the digitizing process of specialized embroidery designs and set up the attachments. | 11. Practice of Digitizing process of specialized embroidery<br>• Sequins work<br>• Cording work<br>• Chenille work<br>• Taping work<br>• Aari embroidery work | • Describe specialized embroidery with suitable needle, designs, fabric, thread, stabilizers and other material etc. |
| Practical<br>64 Hrs<br><br>Theory<br>24 Hrs | Prepare different specialized embroidery samples with use of special attachments. | 12. Practice of making samples using attachments with safety<br>13. Practice of handling special attachments with precautions. | • Describe different machine attachments<br>• Describe Maintenance of machine attachments |
| Practical<br>112 Hrs<br><br>Theory<br>42 Hrs | Create decorative embroidery designs and run machine to develop various designs. | 14. Practice of Digitizing process of decorative embroideries with complex design editing<br>• Lace work<br>• Cutwork<br>• Develop new fill patterns | Describe types of decorative embroideries<br>• Lace work<br>• Cutwork<br>• Develop new fill patterns |
| Practical<br>16 Hrs<br>Theory<br>06 Hrs | Set up the Computerized Aari Embroidery Machine with proper knowledge about parts, maintenance and capabilities. | 15. Recognise the Aari Embroidery Machine<br>16. Identify Different part of Aari Embroidery Machine<br>17. Practice of Machine oiling and maintenance | • Describe machine operating system/software<br>• Describe computerized Aari embroidery machine<br>• Describe Parts of machine<br>• Work Area and capabilities of machine |
| Practical<br>64 Hrs | Operate Computerized Aari Embroidery | 18. Practice of Computerized Aari Embroidery Machine | Describe computerized Aari embroidery with suitable needle, |

| | | | |
|---|---|---|---|
| Theory<br>24 Hrs | Machine and make Aari embroidery designs with safety. | operations<br>• Start and shutdown process of machine<br>• Loading thread on machine<br>• Upper thread tension<br>• Winding/installing the bobbin<br>• Changing needle<br>19. practice of machine operations on Aari embroidery designs | thread, stabilizer and design etc. |
| Practical<br>48 Hrs<br><br>Theory<br>18 Hrs | Attain knowledge of placement setting of designs on different articles with machine. | 20. Placement of designs on different made-up and garments<br>21. Costing of prepared article during the session.<br>Garments/Designs prepared during the session may be checked as per quality aspects and a report may be prepared for the same | • Define the Standard size charts of made-ups and garments<br>• Name the Types of design settings<br>• Describe Importance of design specification sheet<br>• Define Estimation and costing of articles<br>• Describe Quality control and quality assurance. |
| *Each trainee shall prepare a Garment/Made Up showing different embroidery skills learnt during the session as a project.* | | | |

**Note:**

1. *Trainees Tool kit may be treated as consumables in respect of trainees actually completing the course of one year duration.*
2. *Experts from the Industry may be called for special lectures and demo's as and when required.*
3. *Periodical training of trainers for upgrading/updating their knowledge base, training skills and vision to form the career path of their trainees should be mandatory. This training shall also include discussion on changes in course material whenever they happen.*
4. *The trainers will have the liberty to choose the sequence of contents of the course material to be taught by way of planning weekly/ monthly schedules well in advance, so utilization/practice on machinery at maximum level can be attained.*
5. *With the ever evolving technology, the specification of tools and equipment keep changing rapidly. Whenever tools and equipment are to be procured, the purchase committee should ensure to go for latest version of equipment instead of sticking to what is specified in syllabus, which normally are outdated.*
6. *There should be a provision for up gradation of the software whenever upgraded version of software is launched by the company irrespective of life / validity of the software in use.*
7. *After the final examinations, each trainee will be required to go for a minimum 15 days ON THE JOB TRAINING after completion of which, the trainee will be required to submit copy of the certificate to the Institute.*

| SYLLABUS FOR CORE SKILLS |
| --- |
| 1. Soft Skills (Common for all Non-Engineering CITS trades) (100 Hrs + 100Hrs) |
| 2. Training Methodology (Common for all trades) (320Hrs + 200Hrs) |

Learning outcomes, assessment criteria, syllabus and Tool List of above Core Skills subjects which is common for a group of trades, provided separately in www.bharatskills.gov.in

## 7. ASSESSMENT CRITERIA

| LEARNING OUTCOMES | ASSESSMENT CRITERIA |
|---|---|
| 1. Develop embroidery design by using CorelDraw software and embroidery digitizing software on basic level. | Develop designs in CorelDraw software and embroidery digitizing software |
| | Follow the designing principal. |
| | Maintain quality as per requirement. |
| | |
| 2. Demonstrate multi head computerized embroidery machine with proper knowledge about its tools. | Identify the embroidery tools<br>Use the tool with safely. |
| | Handle tools and equipment with safe practical exercise. |
| | Explain the difference between single head and multi head embroidery machine. |
| | Explain benefits of multi head embroidery machine. |
| | Practice of Machine oiling and maintenance on regular basis. |
| | |
| 3. Set up the machine and machine accessories as per requirement and Demonstrate the threading process according to the fabric type, needles and threads used. | Identify the parts of multi head computerized embroidery machine. |
| | Perform start and shutdown process of machine. |
| | Identify defect of needle. |
| | Identify and use tools to remove the needle with safety precautions. |
| | Select needle according to the fabric. |
| | Fix needle in correct position and place. |
| | Wind bobbin with correct tension of thread. |
| | Identify machine part to install the bobbin case. |
| | Check the thread tension of bobbin case and clean if needed. |
| | Install bobbin case in machine with precautions. |
| | Identify upper thread path of machine. |
| | Identify and use tools to load thread on to the machine and follow the thread path. |
| | Follow the safety instructions throughout the process. |
| | |
| 4. Identifying defect and their troubleshooting while making design on machine. | Open the software (Embroidery Software) and Select Design according to requirement. |
| | Load design to multi head embroidery machine. |
| | Select correct design, needle, frame and stabilizer. |
| | Do upper and lower threading of the machine. |
| | Select colors and color combination. |
| | Decide placement of the design in the fabric. |
| | Fix fabric with appropriate stabilizer properly in the embroidery |

| | |
|---|---|
| | frame/pantograph. |
| | Set the origin of design. |
| | Check all things before start. |
| | Run machine and start embroidery. |
| | Monitor and complete the design. |
| | Use control unit/panel whenever required. |
| | Trouble shoots the machine whenever required. |
| | Remove the frame trim extra thread and press the embroidered fabricneatly. |
| | Maintain hygiene. |
| | Working area should be clean and clutter free. |
| | Follow safety instructions throughout the process. |
| | |
| 5. Demonstrate the process of digitizing designs on software for mass production on multi head embroidery machine for industrial work. | Open digitizing software and do required design such as border and butas etc. |
| | Perform digitizing process using all commands in software. |
| | Set repeats of butas and borders designs for running material like bedsheet, suits, saree and duppattas etc. |
| | Prepare design for production of suit/saree. |
| | Follow designing principle. |
| | Select suitable stitches for the design. |
| | Apply suitable colors to the design by following color scheme. |
| | Run design on multi head embroridery machine and produce running material such as suit, saree and dupattas etc. |
| | Maintain sequence of all elements of designs. |
| | Designs should run smoothly on machine. |
| | Maintain quality as per requirement. |
| | Follow safety instructions throughout the process. |
| | |
| 6. Demonstrate the digitizing process of specialized embroidery designs and set up the attachments. | Perform digitizing process of specialized embroideries such as sequins work, cording work, taping work, chenille work and Aari work. |
| | Set up special attachments according to the requirements. |
| | Designs should run smoothly on machine. |
| | Maintain quality as per requirement. |
| | Follow safety instructions throughout the process. |
| | |
| 7. Prepare different specialized embroidery samples with use of special attachments. | Run machine on specialized embroideries such as sequins work, cording work, taping work, chenille work |
| | Handle special attachments with safe practical exercise. |
| | Designs should run smoothly on machine. |
| | Maintain quality as per requirement. |
| | Follow the safety instructions throughout the process. |
| | |

| | |
|---|---|
| 8. Create decorative embroidery designs and run the machine to develop various designs. | Perform digitizing process of decorative embroideries such as FSL work and cut work. |
| | Create new fill patterns. |
| | Do editing wherever required. |
| | Designs should run smoothly on machine. |
| | Maintain quality as per requirement. |
| | Follow safety instructions throughout the process. |
| | |
| 9. Set up the Computerized Aari Embroidery Machine with proper knowledge about parts, maintenance and capabilities. | Identify parts of computerized Aari embroidery machine. |
| | Oiling and maintenance of machine. |
| | |
| 10. Operate Computerized Aari embroidery Machine and make Aari embroidery designs with safety. | Select design for Aari embroidery |
| | Load design on to the Aari machine. |
| | Run machine and Prepare garment/article using different embroidery stitches and suitable colour scheme. |
| | Trouble shoots the machine whenever required. |
| | Designs should run smoothly on machine. |
| | Follow safety instructions throughout the process. |
| | Maintain quality as per requirement. |
| | Working area should be clean. |
| | |
| 11. Attain knowledge of placement setting of designs on different articles with machine. | Select design for a garment/article. |
| | Decide placement of design. |
| | Setting of design according to requirement. |
| | Explain different types of settings of design. |
| | Prepare costing of given embroidered products. |
| | Produce an estimate and cost sheet. |
| | |

## 8. INFRASTRUCTURE

| LIST OF TOOLS AND EQUIPMENT FOR COMPUTER AIDED EMBROIDERY & DESIGNING - CITS | | | |
|---|---|---|---|
| For batch of 25 candidates | | | |
| **S No.** | **Name of the Tool & Equipment** | **Specification** | **Quantity** |
| **A. TRAINEES TOOL KIT (consumable item)** | | | |
| 1. | Measuring Tape | 150 cm | 26 (25+1) Nos. |
| 2. | Seam Ripper | | 26 (25+1) Nos. |
| 3. | Thimble | | 26 (25+1) Nos. |
| 4. | Thread cutter | | 26 (25+1) Nos. |
| 5. | Scale plastic | 12” | 26 (25+1) Nos. |
| 6. | Eraser, Pencil, Sharpner | | 26 (25+1) Nos. |
| 7. | Water erasable marking Pen | | 26 (25+1) Nos. |
| **B. THEORY ROOM** | | | |
| 8. | Single desks for trainees with arrangements of keeping Books etc. | | 25 Nos. |
| 9. | Revolving Chairs without arms | | 25 Nos. |
| 10. | Faculty Table & Chair set | | 01 No. |
| 11. | Desktop computer with UPS | CPU: 64 Bit, i7 or latest processor, Speed: 3 GHz or Higher. RAM:-8 GB DDR-III or Higher, Nvidia Graphics Card 2GB or Higher, Wi-Fi Enabled. Network Card: Integrated Gigabit Ethernet, with USB Mouse,USB Keyboard and Monitor (Min. 17 Inch). Licensed Operating System and Antivirus compatible with Trade related softwares. | 01 No. |
| 12. | Computer Table and Chair | | 01 No. |
| 13. | Multimedia Projector with accessories | | 01 No. |
| 14. | White Magnetic Board with Felt board & accessories | | 01 No. |
| 15. | Display Board | | 01 No. |
| 16. | Notice board | | 01 No. |

| | | | |
|---|---|---|---|
| 17. | Storage Almirah | | 01 No. |
| 18. | Book Shelf | | 01 No. |
| 19. | A/C unit split type with Stabilizer | 2 TR capacity | As per requirement |
| **C. MACHINE LAB** | | | |
| 20. | Multi Head Computerized Embroidery Machine with necessary attachments (Sequins, Cording, Taping, Beads Etc.) Accessories ,Hoopsand UPS | Minimum 4 head | 01 No. |
| 21. | Computerized Aari Embroidery Machinewith UPS | Minimum 2 head | 01 No. |
| 22. | Single head multi needle computerized embroidery machine with accessories and UPS | | 01 No. |
| 23. | Single Needle Lock Stitch Industrial Sewing Machine with necessary attachments (Zip Fixing, Picot, Gathering Foot etc.) | | 01 No. |
| 24. | Over Lock Machine | 3 Thread | 1 No. |
| 25. | Scissors | 25 cm | 5 No. |
| 26. | Pinking Shears | | 5 No. |
| 27. | Steam Iron | | 01 No. |
| 28. | Pressing Stand (Metal) | | 1 No. |
| 29. | Cutting Tables | | 02 No. |
| 30. | Pigeon Hole Almirah10 Lockers & Separate Locking Arrangements For Trainees | | 2 Nos. |
| 31. | Locks For Above Pigeon Hole | | 20 Nos. |
| 32. | Chair/Stool For Sewing Machines | | 2 No. |
| | Almirah | | 2 No. |
| 33. | Thread Storage Box/stand | | 2 Nos. |
| 34. | A/C unit split type with Stabilizer | 2 TR capacity | As per requirement |
| 35. | Display Board | | 01 No. |
| 36. | Notice board | | 01 No. |
| 37. | Mannequins | lady | 02 Nos. |
| 38. | Garment steamer | | 1 no. |
| 39. | Laptop | Processor-i7 or above, Ram - 8GB or above, Graphics 2 GB or above 1 TB Hard disk 15.6 | 01 No. for each faculty |

| | | | |
|---|---|---|---|
| | | inch screen | |
| **D. COMPUTER LAB TOOLS & EQUIPMENT** | | | |
| 40. | Desktop computer with UPS | CPU: 64 Bit, i7 or latest processor, Speed: 3 GHz or Higher. RAM:-8 GB DDR-III or Higher, Nvidia Graphics Card 2GB or Higher, Wi-Fi Enabled. Network Card: Integrated Gigabit Ethernet, with USB Mouse, USB Keyboard and Monitor (Min. 17 Inch). Licensed Operating System and Antivirus compatible with Trade related software. | 25+1 Nos. |
| 41. | Trade Related Software like Wilcom, Wings, CorelDraw etc. | | 1 each. for each system 25+1 |
| 42. | Computer Tables & Chairs | | 25+1 Nos. |
| 43. | Projector With Accessories | | 01 No. |
| 44. | A3 Size laserjetColour Printer | | 01 No. |
| 45. | A3 colour Scanner (minimum 1200 ), flatbed | | 01 No. |
| 46. | Printer Table | | 01 No. |
| 47. | Scanner Table | | 01 No. |
| 48. | Hard Disk | 2 TB | 01 No. |
| 49. | Book Shelf | | 01 No. |
| 50. | Notice Boards | | 01 No. |
| 51. | Display Boards | | 01 No. |
| 52. | Faculty Table & Chair | | 01 No. |
| 53. | Almirah | | 01 No. |
| 54. | A/C Unit Split Type With Stabilizer | | As per requirement |
| 55. | LAN Connectivity | | As per requirement |

***Note: -***

1. *Internet facility is desired to be provided in the class room.*

# ANNEXURE – I

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 members participated/ contributed for finalizing the course curriculum of Computer Aided Embroidery & Designing (CITS) trade | | | |
|---|---|---|---|
| **S No.** | **Name & Designation Sh /Mr./Ms** | **Organization** | **Remarks** |
| **Members from NSTI** | | | |
| 1. | Sathya Shankar BP, Director | DGT | Chairman |
| 2. | D Shanthi, DDT | NSTI, Bengaluru | Member |
| 3. | Ramesh Babu, TO | NSTI, Trichy | Member |
| 4. | Kanchan Nair, TO | NSTI, Mumbai | Member |
| 5. | Sonu Ghiya, TO | NSTI, Jaipur | Member |
| 6. | Dr Vandana Jarolia, TO | NSTI, Indore | Member |
| 7. | Bhagya Shree, TO | NSTI, Indore | Member |
| 8. | Divya, TO | NSTI, Bengaluru | Member |
| 9. | Chitra, TO | DGT, HQ | Member |
| 10. | Varsha, TO | NSTI, Bengaluru | Member |
| 11. | Kavita Sharma, VI | NSTI, Noida | Member |
| **Members as Data Expert, CSTARI and NIMI** | | | |
| 12. | C. S. Murthy, JDT | CSTARI, Kolkata | Member |
| 13. | Priya, ADT | RDSDE, Bengaluru | Member |
| 14. | S. Bandyopadhyay, TO | CSTARI, Kolkata | Member |
| 15. | R. N. Manna, TO | CSTARI, Kolkata | Member |
| 16. | S Bhowmick, AM | NIMI, Chennai | Member |
| 17. | P.K. Bairagi, TO | CSTARI, Kolkata | Coordinator |
| **Members from State ITI s** | | | |
| 18. | Ms Indira, B M | Govt ITI, Bengaluru, Karnataka | Member |
| 19. | Ms Renuka Devi, ATO | Govt ITI, Cuddalore, Tamilnadu | Member |
| 20. | Mr Jagdish Prasad Yadav, Junior Instructor | ITI, Jaipur, Rajasthan | Member |
| 21. | Ms Rukhsar Anjum, | BV Fatima, Private ITI, Bengaluru | Member |
| **Members from Industry** | | | |

| | | | |
|---|---|---|---|
| 22. | Satheesh Kumar, DGM | Aravind Life Style Brands Ltd, Bengaluru | Member |
| 23. | Ms Nagamani S, GM, | Shahi Exports, Bengaluru | Member |
| 24. | Aseem Kumar, General Secretary | Garment Export Association , Rajasthan | Member |
| 25. | Ms Abha Rasotgi, Retd TO | DGT | Member |
| 26. | Ms Nidhi Rawat, Dy, PMA Head | NRO, Min Of Rural Dev | Member |
| 27. | Mr Bhupender Singh | Creative Arts, Panipat, Haryana | Member |
| **Members from SSC** | | | |
| 28. | Ms Smritee Dwivedee, Director, Operations | AMHSSC | Member |