

MACHINE EMBROIDERY WITH CAD (EMMOA)

Syllabus

(Safety Practices 25 Hrs, Theory 100 Hrs, Practical 450 Hrs, Employability Skill 75 Hrs)

Detail of Syllabus

Safety Practices (25 Hours)

Sl. No.	CONTENT	DETAILS	Hours
1.	Trade related hazards and precautions - Part of Employability Skills	1.1 Personal protection in work place 1.2. Basic first aid 1.3. Safety signs for Dangers and Stop Caution and Personal Safety measures 1.4. Safety related to health 1.5. Prevention of accident 1.6 Identification of Sickness	25

Trade Syllabus (550 Hours)

No.	Reference Learning Outcome	Professional Skills (Trade Practical)	Professional Knowledge (Trade Theory)
1	Identify and use embroidery tools, machine and operate with safety precautions	<ul style="list-style-type: none">▪ Familiarization & handling of tools with safety practical exercises<ul style="list-style-type: none">– Colour wheel, colour schemes and identify the fabric	<ul style="list-style-type: none">▪ Knowledge of trade-related tools & their importance.▪ Knowledge of colour wheel and colour schemes.
2	Prepare sample basic hand stitches (temporary & permanent stitch)	Basic hand stitches <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 backstitch– Overcasting– Whipstitch	<ul style="list-style-type: none">▪ Knowledge of hand embroidery & stitches
3	Demonstrate and prepare the sample in both techniques (hand and machine).	<ul style="list-style-type: none">▪ Knowledge of computer embroidery by swatch display made by different machines▪ Start and shutdown process of the machine▪ Familiarize with different stitches by running a computer embroidery machine▪ Traditional embroidery: making embroidery samples according to	<ul style="list-style-type: none">▪ Computerized embroidery machine and embroidery types▪ Computerized embroidery and its importance.<ul style="list-style-type: none">– Introduction to computer embroidery stitches.– Manual– Run and triple run– Satin– Step/Tatami

No.	Reference Learning Outcome	Professional Skills (Trade Practical)	Professional Knowledge (Trade Theory)
		a different state on traditional fabric and traditional threads and traditional motif ▪ Familiarization with different equipment related to the machine ▪ Familiarization with tools of embroidery machines	– Piping/contour ▪ Introduction to traditional embroidery of different states – Traditional motif, its origin, the fabric used, threads used ▪ Introduction of equipment related to computerized embroidery. ▪ Parts of computerized embroidery machine
4	Design the following with suitable fabric design using coral draw software (Indian dresses, western dresses)	▪ Familiarize with a personal computer and its parts ▪ Starting a personal computer and starting software's like a paintbrush, coral draw ▪ Mouse practice ▪ Practice a paintbrush ▪ Making designs and colouring ▪ Practice on Corel draw and different software ▪ Making designs and colouring on software ▪ Use of scanner	▪ The introduction and function of various parts of the computer also relate to the computerized embroidery machine. ▪ Basic knowledge of computer. ▪ Introduction to Corel draw. ▪ Commands like cut, copy, paste and text writing.
5	Set up the machine and machine accessories as per requirement	Machine operation ▪ How to change the needle in details and its tools ▪ Precautions while changing the needle ▪ Needle control according to design ▪ Load thread on the machine ▪ Winding/installing the bobbin ▪ Bobbin precaution	▪ Types of needle and their uses and handling. – Needle precautions – Types of needle – Checking the needle – Selection of needle – According to fabric ▪ Types of embroidery threads – Brief knowledge of threads. – Composition – Benefits and disadvantages of different kinds of thread. ▪ Difference between upper thread and bobbin thread.
		▪ Use of different fabric on a computerized embroidery machine ▪ Practising on running machine tension making of the upper thread and bobbin thread	Type of fabrics ▪ How to handle 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
6	Identify, select	▪ Machine oiling and maintenance	▪ Maintenance and safe

No.	Reference Learning Outcome	Professional Skills (Trade Practical)	Professional Knowledge (Trade Theory)
	and troubleshoot the machine with the proper maintenance procedure	<ul style="list-style-type: none"> Practice running designs on the machine already available in the machine Machine working in simple embroidery and specialized embroidery like sequins, tapping & cording, chenille etc (videos or photo) 	principle. Machines operating
7	Develop the skill to make a computerized design with the application of the software.	Hooping practice <ul style="list-style-type: none"> Clipping fabric on the pantograph Placement of design and making the origin of the design Practice designs already installed in the machine Familiarize with backing paper or stabilizing material 	<ul style="list-style-type: none"> Stabilizers/backing their types and uses Need of stabilizing fabric
		<ul style="list-style-type: none"> Design input and output methods from software to machine and machine to software Operating a machine and loading designs and setting the origin 	<ul style="list-style-type: none"> Knowledge of digitizing software and machine keys. Description of software and its need. How software works (x-axis and y-axis) How software designs linked with the machine. Introduction of digitizing software like software interface etc.
		<ul style="list-style-type: none"> The practice of running design with threading, changing the needle, loading designs from software to machine etc. <ul style="list-style-type: none"> Loading designs from software to UBS- drive. Loading design to machine Setting origin. Threading and running designs on fabric 	<ul style="list-style-type: none">
8	Set computerized embroidery machine for transferring the image	<ul style="list-style-type: none"> Transferring of images and sketches in software design related to paintbrush and coral draw with the software Joining big images 	<ul style="list-style-type: none"> Use of scanner with digitizing software. Importance of scanner
9	Run the computerized embroidery machine for all the digitizing process.	Software digitizing <ul style="list-style-type: none"> Type of stitches Digitization process and all commands in software Stitch control and smooth running of the machine as per digitizing 	Detailed study of digitizing procession software. <ul style="list-style-type: none"> Learn different stitches with examples on a machine. Making design on software. Loading digitized designs Information of design on LCD

No.	Reference Learning Outcome	Professional Skills (Trade Practical)	Professional Knowledge (Trade Theory)
		<ul style="list-style-type: none"> ▪ Limitation of software ▪ Benefits of using the software 	<ul style="list-style-type: none"> ▪ Details knowledge of machine regarding the area and its capabilities.
		Machine designs functions & tools. <ul style="list-style-type: none"> ▪ Resize design with a machine. Flip, rotate etc ▪ Move to a particular point ▪ Placement information and origin making 	The setting of design on different articles <ul style="list-style-type: none"> ▪ Placement specification like with printing.
10	Prepare T-shirt used monogramming & logo design.	<ul style="list-style-type: none"> ▪ Operating machine on self-made design ▪ Monogramming and logo making on designs 	<ul style="list-style-type: none"> ▪ Knowledge of monogram & logo
11	Identify, select and apply the digitizing design. Use various techniques e.g. Appliqué work, Sequins work, Taping work, Cording work, Chenille work.	<ul style="list-style-type: none"> ▪ Digitizing lace designs ▪ Appliqué/patching ▪ Using two fabrics, patchworks ▪ Chenille laces 	<ul style="list-style-type: none"> ▪ Advance techniques in machine embroidery
		<ul style="list-style-type: none"> ▪ Advance digitizing ▪ Digitizing of sequins ▪ Digitizing of taping & cording ▪ Digitizing of chenille ▪ Precautions in handling these special attachments ▪ Making embroidery samples on garments: <ul style="list-style-type: none"> – Dresses neckline – Patch embroidery – Chanya choli – Logo designing – Blouse – Kurtas – Indo western 	<ul style="list-style-type: none"> ▪ 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.

Detail of Employability Skills Syllabus (75 Hours)

Sl. No.	Content	Details
1.	English Literacy & Communication Skills	Accentuation (mode of pronunciation) on simple words, Diction (use of word and speech) Transformation of sentences, Voice change, Change of tense, Spellings. Reading and understanding simple sentences about self, work and environment. Construction of simple sentences, Writing simple English. Speaking with preparation on self, on family, on friends, classmates, on know, picture reading gain confidence through

		<p>role-playing. Taking messages, passing messages on and filling in message forms Greeting and introductions office hospitality, Resumes or curriculum vita essential parts, letters of application reference to the previous communication.</p> <p>Communication and its importance, Principles of Effective communication, Types of communication – verbal, non-verbal, written, email, talking on the phone. Non-verbal communication –characteristics, components-Para-language, Body – language,</p> <p>Barriers to communication and dealing with barriers.</p> <p>Handling nervousness/ discomfort.</p> <p>Self-awareness, Importance of Commitment, Ethics and Values, Ways to Motivate Oneself, Personal Goal setting and Employability Planning.</p> <p>Manners, Etiquettes, Dress code for an interview, Do's & Don'ts for an interview, Problem Solving, Confidence Building, Attitude.</p>
2.	I.T. Literacy	<p>Introduction, Computer and its applications, Hardware and peripherals, Switching on-Starting and shutting down of the computer.</p> <p>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.</p> <p>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.</p> <p>Basics of Excel worksheet, understanding basic commands, creating simple worksheets, understanding sample worksheets, use of simple formulas and functions, Printing of simple excel sheets</p> <p>Internet, Concept of the 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.</p> <p>Information Security and antivirus tools, Do's and Don'ts in Information Security, Awareness of IT – ACT, types of cybercrimes.</p>
3.	Entrepreneurship Skills	<p>Entrepreneurship vs. management, Entrepreneurial motivation. Performance & Record, Role & Function of Entrepreneur, Qualities of a Good Entrepreneur, SWOT and risk analysis. Concept & application of PLC, Sales & Distribution Management. Different Between Small Scale & Large Scale Business, Market Survey, Method of marketing, Publicity and advertisement, Marketing Mix.</p> <p>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 familiarizes with the Policies /Programmes & procedure & the available</p>

		<p>scheme.</p> <p>Project formation, Feasibility, Legal formalities i.e., Shop Act, Estimation & Costing, Investment procedure – Loan procurement – Banking Processes.</p>
4.	Productivity & Quality Tools	<p>Definition, Necessity, Meaning of GDP.</p> <p>Personal / Workman – Incentive, Production linked Bonus, Improvement in living standard. Industry Nation.</p> <p>Skills, Working Aids, Automation, Environment, Motivation.</p> <p>How improves or slows down.</p> <p>Banking processes, Handling ATM, KYC registration, safe cash handling, Personal risk and Insurance.</p> <p>Meaning of quality, Quality characteristic. 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.</p> <p>The idea of ISO 9000 and BIS systems and their importance in maintaining qualities.</p> <p>Purpose of Housekeeping, Practice of Good Housekeeping.</p> <p>Basic quality tools with a few examples</p>

Other activities: Project work/ Industrial visit/ Market survey

Outcomes

Outcomes to be assessed/ NOS's to be assessed	Assessment criteria for the outcome
1. Identify and use embroidery tools, machine and operate with safety precautions.	<p>1.1. Identify embroidery tools.</p> <p>1.2. Identify all parts of equipment and their accessories.</p> <p>1.3. Clean all parts of equipment.</p> <p>1.4. Plan and operate.</p> <p>1.5. Identify basic faults and correct them.</p> <p>1.6. Safety and maintenance.</p>
2. Prepare sample basic hand stitches (temporary & permanent stitch)	<p>2.1. Identify and use the embroidery tools safely.</p> <p>2.2. Select raw material for temporary & permanent basic hand stitches.</p> <p>2.3. Prepare a sample of temporary stitches such as basting even, basting uneven, diagonal, slip basting.</p> <p>2.4. Prepare a sample of permanent stitches such as running, hemming, slip, run & back, overcasting.</p> <p>2.5. Explain the difference between temporary & permanent stitch</p> <p>2.6. The sample should be properly finished and pressed.</p>
3. Demonstrate and prepare the sample in both techniques (hand and machine).	<p>3.1. Identify and use pressing and embroidery tools with safety.</p> <p>3.2. Select raw material, tools and equipment for tracing method.</p> <p>3.3. Prepare a sample of running, back, satin and cross stitch by hand embroidery technique.</p> <p>3.4. Prepare a sample of the same stitches by the computerized embroidery machine.</p> <p>3.5. Explain the difference between hand embroidery and machine embroidery.</p> <p>3.6. The sample should be properly finished and pressed.</p>

4. Embroidery design the following with suitable fabric design using coral draw software. (Indian dresses, western dresses)	4.1. Open the software and do the required page set up for the design. 4.2. Identify and use suitable tools for designing. 4.3. Sketch the garment with a suitable fabric design. 4.4. Follow the designing principle. 4.5. Select the colours and colour combination 4.6. Apply colour using colour filling tools 4.7. Save the file in a folder and take the printout of the design using a colour printer
5. Set up the machine and machine accessories as per requirement	5.1. Identify and use pressing and embroidery tools with safety 5.2. Decide the features and placement of the design (border, spray, corner, centre, link, etc) suitable for the part of the garment (sleeves, yokes, cuffs, neck, etc) 5.3. Draw the design using already installed by following the elements of the design 5.4. Apply suitable colours to the design by following the colour scheme 5.5. Press the garment part. Transfer design to the garment 5.6. Fix the garment part properly on the embroidery frame 5.7. Select suitable embroidery stitches for the design 5.8. Start embroidery and complete the design step by step by applying suitable stitches at the required portions 5.9. Remove the frame and trim the excess threads 5.10. Follow the safety instructions throughout the process
6. Identify, select and troubleshoot the machine with the proper maintenance procedure	6.1. Machine oiling and maintenance 6.2. Troubleshoots the machine whenever required 6.3. Comply with the safe operating principle 6.4. Follow the safety instructions throughout the process
7. Develop the skill to make computerizes design with the application of software	7.1. Select correct needle, Pressing and Embroidery tools with safety 7.2. Open the software (Embroidery Software) and Select already install Design suitable for a Cushion Cover 7.3. Digitized and editing stitches 7.4. Apply suitable colours to the design 7.5. Decide the placement of the design in the fabric 7.6. Fix the cushion cover properly on the embroidery frame 7.7. Select suitable Machine embroidery stitches for the design 7.8. Do the upper and lower threading of the machine 7.9. Start embroidery and complete the design step by step by applying suitable stitches at the required portions 7.10. Remove the frame trim extra thread and press the cushion cover neatly 7.11. Follow safety precaution
8. Setup computerized embroidery machine for transferring the image	8.1. Open the software and do the required design 8.2. Identify and use suitable tools for designing 8.3. Sketch the garment with a suitable fabric design 8.4. Follow the designing principle 8.5. Select the colours and colour combination 8.6. Apply colour using colour filling tools 8.7. Decide the features and placement of the design 8.8. Fix the pillow cover properly on the embroidery frame 8.9. Select suitable Machine embroidery stitches for the design

	8.10. Do the upper and lower threading of the machine 8.11. Start embroidery and complete the design step by step by applying suitable stitches at the required portions 8.12. Remove the frame trim extra thread and press the pillow cover neatly
9. Run the computerized Embroidery machine for all the digitizing process	9.1. Open the embroidery software and do the required design 9.2. Identify and use the tools for digitizing 9.3. Sketch the garment with a suitable fabric design 9.4. Follow the designing principle 9.5. Select suitable stitches for the design 9.6. Select the colours and colour combination 9.7. Apply colour using colour filling tools 9.8. Decide the features and placement of the design 9.9. Select correct needles, frame, scissor and thread 9.10. Fix the bed sheet properly on the embroidery frame 9.11. Do the upper and lower threading of the machine 9.12. Start embroidery and complete the design step by step by applying suitable stitches at the required portions 9.13. Maintain hygiene 9.14. Maintain safety expectations 9.15. Maintain quality as per requirement 9.16. Remove the frame trim extra thread and press the bed sheet neatly 9.17. Produce an estimate and cost sheet
10. Prepare T-shirt used monogramming & logo design	10.1. Open the embroidery software and do the required design 10.2. Identify and use the tools for digitizing 10.3. Sketch the garment with a suitable fabric design 10.4. Follow the designing principle 10.5. Select suitable stitches for the design 10.6. Select the colours and colour combination 10.7. Apply colour using colour filling tools 10.8. Decide the features and placement of the design 10.9. Select correct needles, frame, scissor and thread 10.10. Fix the T-shirt properly on the embroidery frame 10.11. Do the upper and lower threading of the machine 10.12. Start embroidery and complete the design step by step by applying suitable stitches at the required portions 10.13. Maintain hygiene 10.14. Maintain safety expectations 10.15. Maintain quality as per requirement 10.16. Remove the frame trim extra thread and press the T-shirt neatly 10.17. Produce an estimate and cost sheet
11. Identify, select and apply the digitizing design and use various techniques e.g. Appliqué work, Sequins work, Taping work, Cording work, Chenille work	11.1. Open the embroidery software and do the required design 11.2. Identify and use the tools for digitizing 11.3. Sketch the garment with a suitable fabric design 11.4. Follow the designing principle 11.5. Select suitable stitches for the design 11.6. Select the colours and colour combination 11.7. Apply colour using colour filling tools 11.8. Decide the features and placement of the design 11.9. Select correct needles, frame, scissor and thread 11.10. Fix the sari properly on the embroidery frame

	<p>11.11. Do the upper and lower threading of the machine</p> <p>11.12. Start embroidery and complete designs. Use appliqué, sequins, taping, cording and chenille step by step by applying suitable stitches at the required portions</p> <p>11.13. Maintain hygiene</p> <p>11.14. Maintain safety expectations</p> <p>11.15. Maintain quality as per requirement</p> <p>11.16. Remove the frame trim extra thread and press the bed sheet neatly</p> <p>11.17. Produce an estimate and cost sheet</p>
12. Demonstrate knowledge of health, safety and security at the workplace (Machine embroidery works)	<p>12.1. Keep vigilance for potential risks and threats associated with the machine embroidery work and types of equipment used. Proper initiation and shutdown of the machine(s) at the beginning and closure of the day.</p> <p>12.2. Ensure the tools and equipment like sewing machines, shears, needles, etc. are handled safely</p> <p>12.3. Comply with health and safety-related instructions applicable to the workplace</p> <p>12.4. Use and maintain personal protective equipment as per protocol</p> <p>12.5. Carry out own activities in line with approved guidelines and procedures</p> <p>12.6. Maintain a healthy lifestyle and guard against dependency on intoxicants</p> <p>12.7. Follow environment management system related procedures</p> <p>12.8. Store materials and tools in line with manufacturer's and Cooperative Society/NGO/SHG requirements</p> <p>12.9. Safely handle and move waste and debris</p> <p>12.10. Minimize health and safety risks to self and others due to own actions</p> <p>12.11. Monitor the workplace and work processes for potential risks and threats</p> <p>12.12. Carry out periodic walkthrough to keep the work area free from hazards and obstructions, if assigned</p> <p>12.13. Participate in mock drills/evacuation procedures organized at the workplace</p> <p>12.14. Undertake first aid, fire-fighting and emergency response training, if asked to do so</p> <p>12.15. Take action based on instructions in the event of fire, emergencies or accidents</p> <p>12.16. Follow Cooperative Society/NGO/SHG procedures for evacuation when required</p>
13. Understand and practice soft skills	<p>13.1. The assessor will rate the trainee on his ability to practice soft skills, including clear and concise communication, in day to day work with the team and with higher authority</p>
14. Demonstrate knowledge of concept and principles of basic arithmetic and financial calculation. Apply knowledge of the specific area to perform practical operations	<p>14.1. Apply basic knowledge of arithmetic calculations for arriving dimensional parameters as per drawing</p> <p>14.2. Apply basic financial calculation to understand the cost of materials & labour and basic concepts of profit/loss.</p> <p>14.3. Engage in basic banking transactions as a customer</p>

15. Explain time management, entrepreneurship and manage/organize related task in day to day work for personal & social growth	15.1. Ascertain appropriate time for the assigned task 15.2. Execute the assigned task within the time frame 15.3. Manage own work within the specified time 15.4. Explain the importance & factors that affect the development of entrepreneurship 15.5. Identify service providers for developing entrepreneur/business establishment.
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