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INDUSTRIAL GARMENT EXPERT



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CBT CURRICULUM

National Vocational Certificate Level 3

Version 1 - April, 2019



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Introduction

Definition/ Description of the training program for Industrial Garment Expert Level-2

Industrial Garment Experts (Level-3) are responsible for prepare prototype according to customer's requirement for the approval of final production and operate special stitching machines (Feed of chain and waist band) with operate button hole, button attach and bar tack machines. Also they are responsible to perform fabric cutting operations.

Purpose of the training program

The purpose of the training is to provide skilled manpower to improve the existing capacity of garment sector. This training will provide the requisite skills to the trainees to operate special type of stitching machines and fabric cutting operations through various cutting techniques. It will enable the participants to meet the challenges in the field of garment industry. Further, to improve the skill level of the manpower to prepare them for the garment industry to meet the market competition nationally and internationally.

The core purpose of this qualification is to produce employable garment experts who could operate special type of stitching machines used in garment industry according to national and international standards. In addition this qualification will prepare unemployed youth to get employment in garment sector.

Overall objectives of training program

The overall objectives of the Industrial Garment Expert (Level-3) training program are:

- Prepare prototype for approval of the final production.
- Perform fabric cutting operations according to the requirements.
- Operate special type of stitching machines to prepare required garment.
- Selecting tools and equipment used to prepare prototype and stitch the garment.
- Measurement of garment according to spec sheet.
- Sequencing the different stages of stitching the product.
- Stitching the garment as required by customers' orders
- Working safely with required standards

Competencies to be gained after completion of course

At the end of the course, the trainee must have attained the following competencies:

- Prepare prototype
- Verify fabric quality
- Perform fabric cutting for production
- Operate feed of arm chain stitching machine
- Operate waist band stitching machine
- Make button holes
- Operate button attach machine
- Operate bar tack machine

Possible available job opportunities available immediately and later in the future

Industrial Garment Experts (Level-3) are employed in garment industries locally and internationally. Experienced Industrial Garment Experts after declared competent in Level-4 may advance through promotions with the same employer or by moving to more advanced positions with other employers. They can become:

- Stitching machine operator
- Quality Checker
- Line QC
- Production Supervisor
- Line Supervisor
- Production Incharge
- Quality Control Incharge
- Quality Assurance Incharge
- Pattern Master
- Sample Master
- Cutting Supervisor
- Sample Incharge
- Production Manager
- General Manager

Some experienced Industrial Garment Experts achieve a highly respected level of salaries. There are good prospects for travel both within Pakistan and abroad. The employment outlook in this occupation will be influenced by a wide variety of factors including:

- Trends and events affecting overall employment
- Location in Pakistan and abroad
- Employment turnover (work opportunities generated by people leaving existing positions)
- Occupational growth (work opportunities resulting from the creation of new positions that never existed before)
- Size of the industry
- Flexibility of the applicant (concerning location and schedule of work).

Trainee entry level

The entry level of trainee for Industrial Garment Expert (Level-3) is minimum of Class middle with hands on experience or declared competent in Industrial Garment Expert Level-2.

Minimum qualification of trainer

Teaching staff should have at least three years' experience in the minimum role of Stitching operator. They should also hold or be working towards a minimum formal teaching qualification with DAE in Garments technology.

Other formal qualifications or experience in the garment industry would be preferred in addition to the above.

Recommended trainer:trainee ratio

The recommended maximum trainer:trainee ratio for this program is 1 trainer for 20 trainees.

Medium of instruction i.e. language of instruction

Instruction will be Urdu, regional and English. For employment in the Middle East, some Arabic expressions will be helpful.

Duration of the course (Total time, Theory & Practical time)

This curriculum comprises 8 modules. The recommended delivery time is 480 hours. Delivery of the course could therefore be full time, 5 days a week, for 6 months. Training providers are at liberty to develop other models of delivery, including part-time and evening delivery.

The full structure of the course is as follow:

Module	Theory ¹ Days/hours	Workplace ² Days/hours	Total hours
Module 1: Prepare prototype	16	64	80
Module 2: Verify fabric quality	16	64	80
Module 3: Perform fabric cutting for production	12	48	60
Module 4: Operate feed of arm chain stitching machine	20	80	100
Module 5: Operate waist band stitching machine	08	32	40
Module 6: Make button holes	8	32	40
Module 7: Operate button attach machine	8	32	40
Module 8: Operate bar tack machine	8	32	40

Sequence of the modules

This qualification (Level-3) is made up of 8 modules. Two modules relate to operate different types of stitching machines, two modules are related to button operations (button holes and button attach), one each for fabric cutting operation and bar tack machine and two critical modules (Prepare prototype and verify fabric quality)

Each module covers a range of learning components. These are intended to provide detailed guidance to teachers (for example the Learning Elements component) and give them additional support for preparing their lessons (for example the Materials

¹ Learning Module hours in training provider premises

² Training workshop, laboratory and on-the-job workplace

Required component). The detail provided by each module will contribute to a standardized approach to teaching, ensuring that training providers in different parts of the country have clear information on what should be taught.

Summary – overview of the curriculum

Module Title and Aim	Learning Units	Theory Days/hours	Workplace Days/hours	Timeframe of modules
<p>Module 1: Prepare prototype</p> <p>Aim: This competency standard covers the skills and knowledge required to make prototype according to buyer's requirement and get approval for final production.</p>	<p>LU1: Interpret order sheet LU2: Make garment pattern LU3: Perform fabric cutting LU4: Perform stitching on fabric LU5: Perform finishing on product. LU6: Obtain approval from supervisor</p>	16	64	80
<p>Module 2: Verify fabric quality</p> <p>Aim: This competency standard covers the skills and knowledge required to verify fabric quality by using different quality standards and equipment to maintain the product quality as per requirement.</p>	<p>LU1: Perform fabric lab testing LU2: Inspect fabric LU3: Verify fabric shade LU4: Prepare fabric inspection report</p>	16	64	80
<p>Module 3: Perform fabric cutting for production</p> <p>Aim: This competency standard covers the skills and knowledge required to set the marker on lay and perform fabric cutting for production. It also covers spreading the fabric, cutting, bundling and making cutting report as per requirement.</p>	<p>LU1: Perform fabric spreading LU2: Perform range cutting LU3: Perform bundling LU4: Prepare fabric cutting report</p>	12	48	60

Module Title and Aim	Learning Units	Theory Days/hours	Workplace Days/hours	Timeframe of modules
<p>Module 4: Operate feed of arm chain stitching machine</p> <p>Aim: This competency standard covers the skills and knowledge required to perform feed of arm chain stitching machine for production of textile garment.</p>	<p>LU1: Prepare machine for sewing LU2: Perform sewing operation by using feed of arm chain stitching LU3: Clean workstation</p>	20	80	100
<p>Module 5: Operate waist band stitching machine</p> <p>Aim: This competency standard covers the skills and knowledge required to perform waist band stitching machine for production as per requirement.</p>	<p>LU1: Prepare machine for sewing LU2: Perform waist band stitching LU3: Clean workstation</p>	08	32	40
<p>Module 6: Make button holes</p> <p>Aim: This competency standard covers the skills and knowledge required to perform button holes on garment product for buttons.</p>	<p>LU1: Prepare machine for button hole. LU2: make button holes LU3: Clean workstation</p>	8	32	40

Module Title and Aim	Learning Units	Theory Days/hours	Workplace Days/hours	Timeframe of modules
<p>Module 7: Operate button attach machine</p> <p>Aim: This competency standard covers the skills and knowledge required to perform button attach machine for buttons in garment production.</p>	<p>LU1: Prepare machine for button attach</p> <p>LU2: Perform button attaching by using button attaching machine</p> <p>LU3: Clean workstation</p>	8	32	40
<p>Module 8: Operate bar tack machine</p> <p>Aim: This competency standard covers the skills and knowledge required to perform bar tack machine for garment production.</p>	<p>LU1: Prepare machine for bar tack</p> <p>LU2: Perform bar tack</p> <p>LU3: Clean workstation</p>	8	32	40

Modules

Module 1: Prepare prototype

Objective of the module: This competency standard covers the skills and knowledge required to make prototype according to buyer's requirement and get approval for final production.

Duration: 80 hours **Theory:** 16 hours **Practical:** 64 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration In hours	Materials Required	Learning Place
LU1. Interpret order sheet	The trainee will be able to: Evaluate spec sheet for sample making. Arrange fabric, trims and accessories as per spec sheet.	Knowledge of Spec Sheet for Sampling Understanding the trims, accessories required as per spec sheet.	Total 10 Theory: 2 Practical: 8	Computer Calculator	Sewing Lab/ Industry sample room
LU2. Make garment pattern	The trainee will be able to: Collect size set details from spec sheet. Develop pattern according to the spec sheet Control the measurement and the matching of the pattern pieces Develop the cutting pattern including all	Knowledge of different sizes of product. Knowledge of pattern making and cutting techniques as per spec sheet and importance of allowances. Ensuring the measurement of different patterns. Importance of pattern making and its types. Applying seam allowances, shrinkage	Total 10 Theory: 2 Practical: 8	Pattern sheet Measurement tape 60" L-scale French curve Scissor Pencil Rubber Sharpener 25c	Sewing Lab/ Industry sample room

	<p>allowances e.g. shrinkage %age, seam as per product sketch, notches and drills</p> <p>Add nomenclature (pattern piece name, size, model name, grain line and cut information)</p>	<p>%age, notches and drills.</p> <p>Types of notches, drills and their uses.</p> <p>Knowledge of shrinkage %age.</p> <p>Knowledge of pattern grading.</p>		<p>Stapler</p> <p>Hole Punch</p> <p>Set square</p> <p>Marker pen</p> <p>Scotch tape 1”</p> <p>Tracing wheel</p> <p>Curve stick</p> <p>Yard scale</p>	
<p>LU3. Perform fabric cutting</p>	<p>The trainee will be able to:</p> <p>Apply Personal Protective Equipment (PPEs) as per job requirement.</p> <p>Identify and select fabric for prototype.</p> <p>Place pattern on fabric and mark as per requirement.</p> <p>Control placement of the pattern</p> <p>Cut fabric sample on marking for stitching including all notches and drills</p>	<p>The importance of Personal Protective Equipment (PPEs) and their uses at workplace.</p> <p>Identifying tools used in cutting and their purpose</p> <p>Selecting of fabric for prototype</p> <p>Ensuring the grain line on fabric</p> <p>Knowledge of different types of cutting techniques and machines.</p>	<p>Total</p> <p>20</p> <p>Theory:</p> <p>4</p> <p>Practical:</p> <p>16</p>	<p>Fabric</p> <p>Scissor</p> <p>pearl Pins</p> <p>Tailor chalk</p> <p>Metal Gloves</p> <p>Mask</p> <p>Apron</p> <p>First Aid box</p> <p>Round knife cutting machine 6”</p>	<p>Sewing Lab/ Industry sample room</p>
<p>LU4. Perform</p>	<p>The trainee will be able to:</p>	<p>Knowledge of different types sewing</p>	<p>Total</p>	<p>Different Sewing</p>	<p>Stitching lab</p>

<p>stitching on fabric</p>	<p>Prepare machine for sewing.</p> <p>Arrange material for product as per spec sheet.</p> <p>Select sewing needle and sewing thread according to the sewing operation and the fabric in use</p> <p>Sew product as per requirement.</p> <p>Check sewing result according to the requirement.</p> <p>Take corrective measure for faults occur during sewing if required.</p>	<p>machines and it uses</p> <p>Knowledge of different Sewing machine operations</p> <p>Identifying different types of needles</p> <p>Describe stitch types and classes</p> <p>Explaining SPI (Stitches per inch) and its importance.</p> <p>Identifying different seam types & classes and their purpose</p> <p>Analyzing different types of defects (fabric/ sewing/ processing/ handling/pressing) and its remedies</p>	<p>20</p> <p>Theory: 4</p> <p>Practical: 16</p>	<p>machines</p> <p>Thread cones</p> <p>Different Needles for different machines</p> <p>Bobbin</p> <p>Bobbin case</p> <p>Clipper</p> <p>Scissor</p> <p>Steam Iron</p> <p>Fusing</p> <p>Stitch opener</p>	<p>Classroom</p>
<p>LU5.Perform finishing on product.</p>	<p>The trainee will be able to:</p> <p>Perform cropping, checking and pressing as per SOP.</p> <p>Perform folding and packing as per requirement.</p> <p>Prepare Quality Control</p>	<p>Knowledge of finishing procedures</p> <p>Applying Clockwise checking method</p> <p>Ensuring Standards Operating Procedures (SOP)</p> <p>Knowledge of different types of folding and</p>	<p>Total 10 hours</p> <p>Theory: 2 hours</p> <p>Practical: 8 hours</p>	<p>Clippers/Scissors</p> <p>Checking table</p> <p>Measurement tape</p> <p>Steam Iron</p> <p>Tag machine</p> <p>Tag pins</p>	<p>Sewing Lab/ Industry sample room</p>

	(QC) report.	<p>tagging</p> <p>Knowledge of preparing QC Report</p> <p>Knowledge of accessories use for finishing to make prototype like zip, button, adhesive, lining)</p> <p>Importance and proper uses of packing accessories like hang tag, price tag, poly bag etc)</p>		Poly bag	
LU6. Obtain approval from supervisor	<p>The trainee will be able to:</p> <p>Examine stitched sample as per spec sheet / standards.</p> <p>Review QC report for final approval.</p>	Ensuring of all kinds of samples (i.e. measurements, Trims, accessories, Fabric, Pressing, folding, tagging, packing etc)	<p>Total</p> <p>10</p> <p>Theory:</p> <p>2</p> <p>Practical:</p> <p>8</p>		Sewing Lab/ Industry sample room

Module 2: Verify Fabric Quality

Objective of the module: This competency standard covers the skills and knowledge required to verify fabric quality by using different quality standards and equipment to maintain the product quality as per requirement.

Duration: 80 hours **Theory:** 16 hours **Practical:** 64 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration In hours	Materials Required	Learning Place
LU1. Perform fabric lab testing	<p>The trainee will be able to:</p> <p>Collect sample as per job requirement.</p> <p>Perform following tests as per requirement:</p> <ul style="list-style-type: none"> - Count of yarn - Construction of fabric - GSM of fabric - Shrinkage %age of fabric - Blend Ratio - Shade variation - Tear strength - Color fastness tests etc. <p>Document the test result.</p>	<p>Knowledge of AATCC/ISO/ASTM standard manual with related test standards.</p> <p>Knowledge of yarn Count, construction of fabric, GSM, Shrinkage %age of fabric, Blend Ratio, Shade variation, Tear strength etc.</p> <p>Knowledge of fastness tests such as color, rubbing, perspiration, light etc with importance of rating awarded to the tested fastness through blue scale and grey scale.</p> <p>Preparing report of tests result.</p>	<p>Total 50</p> <p>Theory: 10</p> <p>Practical: 40</p>	<p>Fabric, Gray scale Blue scale GSM cutter Light Box Standards manual Computer set Measurement Tape Calculator Dustbin Scissor Beakers Pick glass Weighing scale Yarn count tester HT machine</p>	<p>Textile QC Laboratory and Multimedia</p>

				Automatic washing machine Tensile strength tester Crock meter	
LU2. Inspect fabric	The trainee will be able to: Identify and select fabric for inspection. Calculate lot size as per job requirement. Perform fabric inspection as per requirement (4 point system / 10 point system). Measure fabric width of every roll / than at-least three times (@start/ mid/ end) during inspection. Check skew and bowing of every roll. Check fabric weight (GSM) as per requirement. Document test results	Checking Fabric quality as per required parameters. Knowledge of 4 point / 10 point system for inspection Ensuring Lot sizes Knowledge of Skew and bowing Knowledge of Fabric GSM and GSM cutter Generating inspection report	Total 15 Theory: 3 Practical: 12	Light box GSM cutter Computer set Calculator Fabric Measurement tape Weighing scale Inspection frame	Inspection Room
LU3. Verify fabric	The trainee will be able to: Cut at-least two samples	Knowledge of shade variation and roll to roll variation	Total 15	Light Box Grey scale	Textile QC Laboratory

<p>shade</p>	<p>from start and end of every roll for checking Start End (SE) / left-center-right (LCR) shade variation.</p> <p>Analyze cut samples in lab as per standards and note down shade change (Start/end, LCR, roll to roll) by using gray scale)</p> <p>Prepare fabric blanket for roll to roll variation.</p>	<p>Knowledge of LCR and its disadvantages.</p> <p>Importance of light source to check shade of the color on fabric such as D65, TL84, F, UV.</p> <p>Importance of shade checking at three points of the roll as; Start, Centre and End.</p> <p>Knowledge about preparing fabric blanket for checking the roll to roll shade variations.</p>	<p>Theory: 3</p> <p>Practical: 12</p>		
<p>LU4. Prepare fabric inspection report</p>	<p>The trainee will be able to:</p> <p>Prepare detailed fabric inspection report on given format.</p> <p>Obtain approval from supervisor.</p>	<p>Generating fabric inspection report and get approval from supervisor</p>	<p>Total 20</p> <p>Theory: 4</p> <p>Practical: 16</p>	<p>Test report format</p> <p>Computer set</p> <p>Calculator</p>	<p>Textile QC Laboratory</p>

Module 3: Perform fabric cutting for production

Objective of the module: This competency standard covers the skills and knowledge required to set the marker on lay and perform fabric cutting for production. It also covers spreading the fabric, cutting, bundling and making cutting report as per requirement.

Duration: 60 hours **Theory:** 12 hours **Practical:** 48 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration In hours	Materials Required	Learning Place
LU1. Perform fabric spreading	<p>The trainee will be able to:</p> <p>Select fabric for spreading as per order sheet.</p> <p>Mark range length as per marker on cutting table.</p> <p>Spread calculated plies and remove rejected panels.</p>	<p>Determining relaxation time after spreading</p> <p>Ensuring the Lay height limit as per fabric quality</p> <p>Understanding the fabric defects and its identification with possible remedies.</p> <p>Types of spreading and machines used for spreading & calculations of plies.</p> <p>Knowledge of End cutter machine.</p>	<p>Total 10 Theory: 2 Practical: 8</p>	<p>First Aid Box Spreading table 2 Calculator Scissors Clamp & Rod (1 set) Measurement tape Spreading machine</p>	<p>Sewing machine Lab OR Factory Floor</p>
LU2. Perform range cutting	<p>The trainee will be able to:</p> <p>Use PPEs as per job requirement.</p> <p>Place and set marker on lay.</p> <p>Prepare cutting machine for cutting.</p>	<p>Ensuring Personal Protective Equipment (PPEs) to avoid any unwanted accident.</p> <p>Knowledge of range cutting</p> <p>Knowledge and Types of cutting machines</p> <p>Determining range cutting</p>	<p>Total 30 Theory: 6 Practical: 24</p>	<p>Cutting machine Drill machine First Aid Box Metallic gloves PPEs Cutting Table Calculator</p>	<p>Sewing machine Lab OR Factory Floor</p>

	<p>Operate cutting machine as per marker.(including notches and drills)</p> <p>Collect, segregate and store waste as per organization's policy.</p> <p>Prepare cutting report</p>	<p>Types of drilling & notches and its advantages.</p> <p>Knowledge of Grain line information</p> <p>Determining waste storage policies.</p> <p>Generating reports of cutting department.</p>			
LU3. Perform bundling	<p>The trainee will be able to:</p> <p>Verify all size-wise body parts on bundling table.</p> <p>Mark numbering on garment components (Ready cut) according to size.</p> <p>Bundle and sort with tagging.</p> <p>Replace rejected panels as per SOP.</p>	<p>Types and uses of bundling as company policy</p> <p>Knowledge of marking, numbering and tagging</p> <p>Understanding the fabric defects and its identification and replacement</p> <p>Types of fabric defects and its remedies.</p>	<p>Total 10</p> <p>Theory: 2</p> <p>Practical: 8</p>	<p>First Aid Box</p> <p>PPEs</p> <p>Bundling Table</p> <p>Numbering machine</p> <p>Calculator</p>	<p>Sewing machine Lab</p> <p>OR</p> <p>Factory Floor</p>
LU4. Prepare fabric cutting report	<p>The trainee will be able to:</p> <p>Develop fabric cutting report as per given format by supervisor.</p> <p>Calculate fabric rejection</p>	<p>Knowledge of report formation as per given format</p> <p>Calculations for waste %age.</p> <p>Generating fabric inspection report and get</p>	<p>Total 10</p> <p>Theory: 2</p> <p>Practical:</p>		<p>Sewing machine Lab</p> <p>OR</p> <p>Factory Floor</p>

	%age and waste %age. Collect, segregate and dispose off waste as per company's policy.	approval from supervisor	8		
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Module 4: Operate Feed of arm chain stitching machine

Objective of the module: This competency standard covers the skills and knowledge required to perform feed of arm chain stitching machine for production of textile garment.

Duration: 100 hours **Theory:** 20 hours **Practical:** 80 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration in hours	Materials Required	Learning Place
LU1. Prepare machine for sewing	<p>The trainee will be able to:</p> <p>Prepare workstation for feed of arm chain stitch.</p> <p>Follow safety precautions as per SOP / manual.</p> <p>Check machine parts as per guidelines.</p> <p>Select sewing needle and sewing thread according to the sewing operation and the fabric in use</p> <p>Arrange material for sewing operations.</p> <p>Check Stitch per Inch (SPI) and quality on rough fabric for verifying quality for production.</p>	<p>Importance and setting of workbench Knowledge of seating arrangement as per OH&S practices.</p> <p>Cleaning of machine according to standards for Feed of arm chain stitching machine operations.</p> <p>Knowledge of different parts of machines (Like Disc type tension post , pressure foot I, thread take-up lever and looper)</p> <p>Identifying the needle/needle guides, parts, attachments and folders as required for sewing product.</p> <p>Ensuring the oil level on machine for proper machine running during production. Importance of Stitches per Inch (SPI) and verify it on rough fabric.</p> <p>Problems with equipment, services or surroundings, including equipment not working.</p>	<p>Total 20 Theory: 4 Practical: 16</p>	<p>Feed of Arm chain stitching machine Thread Needles Fabric Folder Machine Oil Tweezers First Aid Box Tool box Mask Dust bin L-key</p>	<p>Sewing machine Lab with multimedia OR Factory Floor</p>
LU2. Perform sewing	<p>The trainee will be able to:</p>	<p>Operational knowledge of Feed of arm sewing machine for sewing the product with</p>	<p>Total 60</p>	<p>Thread Needles</p>	<p>Sewing machine Lab with multimedia</p>

<p>operation by using feed of arm chain stitching</p>	<p>Execute machine control exercise.</p> <p>Perform sewing operations as per requirement.</p> <p>Take corrective measure for faults occur during sewing if required.</p> <p>Complete target as per given time.</p> <p>Review sews operation randomly.</p>	<p>required parameters.</p> <p>Knowledge of machine speed and proper handling of machine according to the type of operations.</p> <p>Understanding fabrics and product type</p> <p>Knowledge of Seam types and their importance.</p> <p>Identifying stitch defects during the operations of Feed of arm sewing machine and their remedies.</p> <p>Conducting sewing operation according to requirement</p> <p>Ensuring the quality standards.</p> <p>Determining the preventive action taken to avoid any defective work.</p> <p>Knowledge of production and handling techniques</p>	<p>Theory: 12</p> <p>Practical: 48</p>	<p>Fabric Folder Machine Oil Scissor Tweezers First Aid box Tool box Mask Dust bin</p>	<p>OR Factory Floor</p>
<p>LU3. Clean workstation</p>	<p>The trainee will be able to:</p> <p>Clean machine after closing the job.</p> <p>Cover machine for safety.</p> <p>Collect and store waste as per company's policy.</p> <p>Put all tools in tool box.</p>	<p>Cleaning of machine according to standards for Feed of arm machine and follow OH&S practices.</p> <p>Knowledge of wastage</p> <p>Collecting all tools and put it into Tool box after closing the job</p>	<p>Total 20</p> <p>Theory: 4</p> <p>Practical: 16</p>	<p>Tool box Machine cover Duster Blower</p>	<p>Sewing machine Lab with multimedia OR Factory Floor</p>

Module 5: Operate Waist band stitching machine

Objective of the module: This competency standard covers the skills and knowledge required to perform waist band stitching machine for production as per requirement.

Duration: 40 hours **Theory:** 08 hours **Practical:** 32 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1. Prepare machine for sewing	<p>The trainee will be able to:</p> <p>Prepare workstation for waist band stitch.</p> <p>Follow safety precautions as per SOP / manual.</p> <p>Check machine parts as per guidelines.</p> <p>Select sewing needle and sewing thread according to the sewing operation and the fabric in use</p> <p>Arrange material for sewing operations.</p> <p>Check Stitch per Inch (SPI) and quality on rough fabric for verifying quality for production.</p>	<p>Importance and setting of workbench</p> <p>Knowledge of seating arrangement as per OH&S practices.</p> <p>Cleaning of machine according to standards for waist band stitching machine.</p> <p>Knowledge of different parts of machines (e.g Tension post, pressure foot , thread take-up lever and looper etc)</p> <p>Identifying the needle/needle guides, parts, attachments and folders as required for sewing product.</p> <p>Ensuring the oil level on machine for proper machine running during production.</p> <p>Importance of Stitches per Inch (SPI) and verify it on rough fabric.</p> <p>Problems with equipment, services or surroundings, including equipment not working.</p>	<p>Total 05</p> <p>Theory: 1</p> <p>Practical: 4</p>	<p>Waist band stitching machine</p> <p>Thread</p> <p>Needles</p> <p>Fabric</p> <p>Folder</p> <p>Machine Oil</p> <p>Scissor</p> <p>Tweezers</p> <p>First Aid box</p> <p>Tool box</p> <p>Mask</p> <p>Dust bin</p>	<p>Sewing machine Lab with multimedia</p> <p>OR</p> <p>Factory Floor</p>
LU2. Perform waist band stitching	<p>The trainee will be able to:</p> <p>Execute machine control</p>	<p>Operational knowledge of waist band machine the product with required parameters.</p>	<p>Total 30</p>	<p>Thread</p> <p>Needles</p>	<p>Sewing machine Lab with multimedia</p> <p>OR</p>

	<p>exercise.</p> <p>Perform sewing operations as per requirement.</p> <p>Take corrective measure for faults occur during sewing if required.</p> <p>Complete target as per given time.</p> <p>Review sew operation randomly.</p>	<p>Knowledge of machine speed and proper handling of machine according to the type of operations.</p> <p>Understanding fabrics and product type</p> <p>Knowledge of Seam types and their importance.</p> <p>Identifying stitch defects during the operations of waist band machine and their remedies.</p> <p>Conducting sewing operation according to requirement</p> <p>Ensuring the quality standards.</p> <p>Determining the preventive action taken to avoid any defective work.</p> <p>Knowledge of production and handling techniques</p>	<p>Theory: 6</p> <p>Practical: 24</p>	<p>Fabric</p> <p>Folder</p> <p>Machine Oil</p> <p>Scissor</p> <p>Tweezers</p> <p>First Aid box</p> <p>Tool box</p> <p>Mask</p> <p>Dust bin</p>	<p>Factory Floor</p>
<p>LU3. Clean workstation</p>	<p>The trainee will be able to:</p> <p>Clean machine after closing the job.</p> <p>Cover machine for safety.</p> <p>Collect and store waste as per company's policy.</p> <p>Put all tools in tool box.</p>	<p>Cleaning of machine according to standards for Feed of arm machine and follow OH&S practices.</p> <p>Knowledge of wastage</p> <p>Collecting all tools and put it into Tool box after closing the job</p>	<p>Total 5</p> <p>Theory: 1</p> <p>Practical: 4</p>	<p>Tool box</p> <p>Machine cover</p> <p>Duster</p>	<p>Sewing machine Lab with multimedia</p> <p>OR</p> <p>Factory Floor</p>

Module 6: Make button holes

Objective of the module: This competency standard covers the skills and knowledge required to perform button holes on garment product for buttons.

Duration: 40 hours **Theory:** 8 **Practical:** 32

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1. Prepare machine for button hole.	<p>The trainee will be able to:</p> <p>Prepare workstation for button hole machine.</p> <p>Follow safety precautions as per SOP / manual.</p> <p>Check machine parts as per guidelines.</p> <p>Select sewing needle and sewing thread according to the sewing operation and the fabric in use</p> <p>Arrange material for sewing operations.</p> <p>Adjust machine according to the fabric in use (thread tension, button hole length, stitch width and number of stitch (SPI)</p>	<p>Importance and setting of workbench</p> <p>Knowledge of seating arrangement as per OH&S practices.</p> <p>Cleaning of machine according to standards for button hole machine.</p> <p>Knowledge of different parts of machines (Like Tensioner, pressure feed lever, thread take-up lever)</p> <p>Knowledge of bobbin and bobbin case and bobbin filling process</p> <p>Identifying the needle/needle guides, parts, attachments as required for product.</p> <p>Ensuring the oil level on machine for proper machine running during production.</p> <p>Knowledge of different types of button hole</p> <p>Problems with equipment, services or surroundings, including equipment not working.</p>	<p>Total</p> <p>10</p> <p>Theory:</p> <p>2</p> <p>Practical:</p> <p>8</p>	<p>Thread</p> <p>Needles</p> <p>Bobbin</p> <p>Bobbin case</p> <p>Fabric</p> <p>Attachment</p> <p>Machine Oil</p> <p>First Aid box</p> <p>Tool box</p> <p>Mask</p> <p>Dust bin</p> <p>Button hole machine</p>	<p>Sewing machine Lab with multimedia</p> <p>OR</p> <p>Factory Floor</p>
LU2. Make button holes	<p>The trainee will be able to:</p>	<p>Operational knowledge of Button hole machine with required parameters.</p>	<p>Total</p> <p>25</p>	<p>Thread</p> <p>Needles</p>	<p>Sewing machine Lab with multimedia</p>

	<p>Execute machine control exercise.</p> <p>Perform button holes as per specifications.</p> <p>Take corrective measure for faults occur during sewing if required.</p> <p>Complete target as per given time.</p> <p>Review button hole operation randomly.</p>	<p>Knowledge of machine speed and proper handling of machine according to the type of operations.</p> <p>Knowledge of bobbin and bobbin case and bobbin filling process</p> <p>Identifying defects during the operations of Button hole machine and their remedies.</p> <p>Conducting button hole operation according to requirement</p> <p>Ensuring the quality standards.</p> <p>Knowledge of production and handling techniques</p>	<p>Theory: 5</p> <p>Practical: 20</p>	<p>Bobbin</p> <p>Bobbin case</p> <p>Fabric</p> <p>Attachment</p> <p>Measuring Tape</p> <p>Machine Oil</p> <p>First Aid box</p> <p>Tool box</p> <p>Mask</p> <p>Dust bin</p>	<p>OR</p> <p>Factory Floor</p>
<p>LU3. Clean workstation</p>	<p>The trainee will be able to:</p> <p>Clean machine after closing the job.</p> <p>Cover machine for safety.</p> <p>Collect and store waste as per company's policy.</p> <p>Put all tools in tool box.</p>	<p>Cleaning of machine according to standards for Button hole machine and follow OH&S practices.</p> <p>Knowledge of wastage</p> <p>Collecting all tools and put it into Tool box after closing the job.</p>	<p>Total 5</p> <p>Theory: 1</p> <p>Practical: 4</p>	<p>Tool box</p> <p>Machine cover</p> <p>Duster</p>	<p>Sewing machine Lab with multimedia</p> <p>OR</p> <p>Factory Floor</p>

Module 7: Operate button attach machine

Objective of the module: This competency standard covers the skills and knowledge required to perform button attach machine for buttons in garment production.

Duration: 60 hours **Theory:** 12 **Practical:** 48

Learning Unit	Learning Outcomes	Learning Elements	Duration in hours	Materials Required	Learning Place
LU1. Prepare machine for button attach	<p>The trainee will be able to:</p> <p>Prepare workstation for button attach machine.</p> <p>Follow safety precautions as per SOP / manual.</p> <p>Check machine parts as per guidelines.</p> <p>Arrange material for sewing operations.</p>	<p>Importance and setting of workbench</p> <p>Knowledge of seating arrangement as per OH&S practices.</p> <p>Cleaning of machine according to standards for button attach machine.</p> <p>Knowledge of different parts of machines (e.g Tension post, pressure foot , thread take-up lever)</p> <p>Identifying the needle/needle guard, parts, attachments as required for button attach .</p> <p>Ensuring the oil level on machine for proper machine running during production.</p>	<p>Total</p> <p>10</p> <p>Theory:</p> <p>2</p> <p>Practical:</p> <p>8</p>	<p>Thread</p> <p>Buttons</p> <p>Needles</p> <p>Fabric</p> <p>Machine Oil</p> <p>First Aid box</p> <p>Tool box</p> <p>Mask</p> <p>Dust bin</p> <p>Duster</p> <p>Button attach machine</p>	<p>Sewing machine Lab with multimedia</p> <p>OR</p> <p>Factory Floor</p>
LU2. Perform button attaching by using button attaching machine	<p>The trainee will be able to:</p> <p>Execute machine control exercise.</p> <p>Sew button as per requirement.</p> <p>Take corrective measure for faults occur during</p>	<p>Operational knowledge of Button attach sewing machine for sewing the product with required parameters.</p> <p>Knowledge of machine speed and proper handling of machine according to the type of operations.</p> <p>Understanding fabrics and product type</p> <p>Knowledge of Seam types and their</p>	<p>Total</p> <p>45</p> <p>Theory:</p> <p>9</p> <p>Practical:</p> <p>34</p>	<p>Thread</p> <p>Needles</p> <p>Fabric</p> <p>Measurement Tape</p> <p>Attachment</p>	<p>Sewing machine Lab with multimedia</p> <p>OR</p> <p>Factory Floor</p>

	<p>sewing if required.</p> <p>Complete target as per given time.</p> <p>Review sew operation randomly.</p>	<p>importance.</p> <p>Identifying stitch defects occurs during the operations of button attach machine and knowledge of machine operations.</p> <p>Ensuring the quality standards.</p> <p>Determining of preventive action taken to avoid any defective work.</p> <p>Knowledge of production and handling techniques</p>		<p>Machine Oil</p> <p>First Aid box</p> <p>Tool box</p> <p>Mask</p> <p>Dust bin</p>	
LU3. Clean workstation	<p>The trainee will be able to:</p> <p>Clean machine after closing the job.</p> <p>Cover machine for safety.</p> <p>Collect and store waste as per company's policy.</p> <p>Put all tools in tool box.</p>	<p>Cleaning of machine according to standards for Button attach sewing machine and follow OH&S practices.</p> <p>Knowledge of wastage</p> <p>Collecting all tools and put it into Tool box after closing the job</p>	<p>Total</p> <p>5</p> <p>Theory:</p> <p>1</p> <p>Practical:</p> <p>4</p>	<p>Tool box</p> <p>Machine cover</p> <p>Duster</p>	<p>Sewing machine Lab with multimedia</p> <p>OR</p> <p>Factory Floor</p>

Module 8: Operate bar-tack machine

Objective of the module: This competency standard covers the skills and knowledge required to perform bar tack machine for garment production.

Duration: 60 hours **Theory:** 12 hours **Practical:** 48 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1. Prepare machine for bartack	<p>The trainee will be able to:</p> <p>Prepare workstation for button attach machine.</p> <p>Follow safety precautions as per SOP / manual.</p> <p>Check machine parts as per guidelines.</p> <p>Select sewing needle and sewing thread according to the sewing operation and the fabric in use</p> <p>Arrange material for sewing operations.</p> <p>Adjust machine according to the fabric in use (thread tension, bar tacking length, number of stitch (SPI)</p>	<p>Importance and setting of workbench</p> <p>Knowledge of seating arrangement as per OH&S practices.</p> <p>Determining the preparation of workstation</p> <p>Cleaning of machine according to standards for bar-Tack machine.</p> <p>Knowledge of different parts of machines (e.g Tension post, pressure foot, thread take-up lever)</p> <p>Knowledge of bobbin and bobbin case and bobbin filling process</p> <p>Identifying the needle/needle guides, parts, attachments and folders as required for sewing product.</p> <p>Ensuring the oil level on machine for proper machine running during production.</p> <p>Importance of Stitches per Inch (SPI) and verify it on rough fabric.</p> <p>Problems with equipment, services or surroundings, including equipment not working.</p>	<p>Total</p> <p>10</p> <p>Theory:</p> <p>2</p> <p>Practical:</p> <p>8</p>	<p>Thread</p> <p>Needles</p> <p>Bobbin</p> <p>Bobbin case</p> <p>Product</p> <p>Machine Oil</p> <p>First Aid box</p> <p>Tool box</p> <p>Mask</p> <p>Dust bin</p> <p>Bar tack machine</p>	<p>Sewing machine Lab with multimedia</p> <p>OR</p> <p>Factory Floor</p>
LU2. Perform	The trainee will be able	Operational knowledge of bar-Tack machine	Total	Thread	Sewing machine Lab

<p>bartack</p>	<p>to:</p> <p>Execute machine control exercise.</p> <p>Perform bar tack operations as per spec sheet.</p> <p>Take corrective measure for faults occurs during sewing if required.</p> <p>Complete target as per given time.</p> <p>Review bar tack operation randomly.</p>	<p>the product with required parameters.</p> <p>Knowledge of machine speed and proper handling of machine according to the type of operations.</p> <p>Understanding fabrics and product type</p> <p>Knowledge of Seam types and their importance.</p> <p>Knowledge of bobbin and bobbin case and bobbin filling process</p> <p>Identifying stitch defects during the operations of bar-Tack machine and their remedies.</p> <p>Conducting sewing operation according to requirement</p> <p>Ensuring the quality standards.</p> <p>Determining the preventive action taken to avoid any defective work.</p> <p>Knowledge of production and handling techniques</p>	<p>45</p> <p>Theory:</p> <p>9</p> <p>Practical:</p> <p>36</p>	<p>Needles</p> <p>Bobbin</p> <p>Bobbin case</p> <p>product</p> <p>Machine Oil</p> <p>First Aid box</p> <p>Tool box</p> <p>Mask</p> <p>Dust bin</p>	<p>with multimedia</p> <p>OR</p> <p>Factory Floor</p>
<p>LU3. Clean workstation</p>	<p>The trainee will be able to:</p> <p>Clean machine after closing the job.</p> <p>Cover machine for safety.</p> <p>Collect and store waste as per company's policy.</p> <p>Put all tools in tool box.</p>	<p>Cleaning of machine according to standards for Bar-tack machine and follow OH&S practices.</p> <p>Knowledge of wastage</p> <p>Collecting all tools and put it into Tool box after closing the job.</p>	<p>Total</p> <p>5</p> <p>Theory:</p> <p>1</p> <p>Practical:</p> <p>4</p>	<p>Tool box</p> <p>Machine cover</p> <p>duster</p>	<p>Sewing machine Lab with multimedia</p> <p>OR</p> <p>Factory Floor</p>

General assessment guidance for Industrial Garment Expert Level-3

Good practice in Pakistan makes use of sessional and final assessments, the basis of which is described below. Good practice by vocational training providers in Pakistan is to use a combination of these sessional and final assessments, combined to produce the final qualification result.

Sessional assessment is going on all the time. Its purpose is to provide feedback on what students are learning:

- to the student: to identify achievement and areas for further work
- to the teacher: to evaluate the effectiveness of teaching to date, and to focus future plans.

Assessors need to devise sessional assessments for both theoretical and practical work. Guidance is provided in the assessment strategy

Final assessment is the assessment, usually on completion of a course or module, which says whether or not the student has "passed". It is – or should be – undertaken with reference to all the objectives or outcomes of the course, and is usually fairly formal. Considerations of security – ensuring that the student who gets the credit is the person who did the work – assume considerable importance in final assessment and declared after performance based assessment at the each module as “Competent” or “Not Yet Competent”

Methods of assessment

For lessons with a high quantity of theory, written or oral tests related to learning outcomes and/ or learning content can be conducted. For workplace lessons, assessment can focus on the quality of planning the related process, the quality of executing the process, the quality of the product and/or evaluation of the process.

Methods include direct assessment, which is the most desirable form of assessment. For this method, evidence is obtained by direct observation of the student’s performance.

Examples for direct assessment of Industrial Garment Expert Level-3 include:

- Work performances, for example stitching and over lock the garment on required parameters, or preparing workstation for performing the job.
- Demonstrations, for example demonstrating the tools and equipment requires for stitching and packing the garment according to the given spec sheet.

- Direct questioning, where the assessor would ask the student why he is making prototype in a certain way, or how the student will find out about the current and future requirements for the garment and at sales outlets.
- Paper-based tests, such as multiple choice or short answer questions on types of needles required to sew the garment on specific stitching machine, preparing the work station for stitching or developing productive working relationships with associates.

Indirect assessment is the method used where the performance could not be watched and evidence is gained indirectly.

Examples for indirect assessment of a Industrial Garment Expert Level-2 include:

- Work products, such as a photo or sample of stitched garment made by trainee are present at portfolio.
- Workplace documents, such as a diary of daily working that has been ready for finishing or packing.

Indirect assessment should only be a second choice. (In some cases, it may not even be guaranteed that the work products were produced by the person being assessed.)

Principles of assessment

All assessments should be valid, reliable, fair and flexible:

Fairness means that there should be no advantages or disadvantages for any assessed person. For example, it should not happen that one student gets prior information about the type of work performance that will be assessed, while another candidate does not get any prior information.

Validity means that a valid assessment assesses what it claims to assess. For example, if stitching skills are to be assessed and certificated, the assessment should involve performance criteria that are directly related to that stitching activity. An interview about the types of the stitching processes on different stitching machine would not meet the performance criteria.

Reliability means that the assessment is consistent and reproducible. For example, if the work performance of cropping and finishing the garment has been assessed, another assessor (eg the future employer) should be able to see the same work performance and witness the same level of achievement.

Flexibility means that the assessor has to be flexible concerning the assessment approach. For example, if there is a power failure during the assessment, the assessor should modify the arrangements to accommodate the students' needs.

Assessment strategy for the Industrial Garment Expert Level-2 Curriculum

This curriculum consists of 7 modules:

- Module 1: Prepare prototype
- Module 2: Verify fabric quality
- Module 3: Perform fabric cutting for production
- Module 4: Operate feed of arm chain stitching machine
- Module 5: Operate waist band stitching machine
- Module 6: Make button holes
- Module 7: Operate button attach machine
- Module 8: Operate bar tack machine

Sessional assessment

The sessional assessment for all modules shall be in two parts: theoretical assessment and practical assessment. The sessional marks shall contribute to the final qualification.

Theoretical assessment for all learning modules must consist of a written paper lasting at least one hour per module. This can be a combination of multiple choice and short answer questions.

For practical assessment, all procedures and methods for the modules must be assessed on a sessional basis. Guidance is provided below under Planning for assessment.

Final assessment

Final assessment shall be in two parts: theoretical assessment and practical assessment. The final assessment marks shall contribute to the final qualification.

The final theoretical assessment shall consist of one 3-hour paper. The paper shall consist of half multiple choice and half short-answer questions. This part shall cover all 8 modules.

For the final practical assessment, each student shall be assessed over a period of two days, with two 3-hour sessions on each day. This represents a total of four sessions totaling 12 hours of practical assessment for each student. During this period, each student must be assessed on his/her ability to Stitch one complete garment as per given in assessment package as trained in different modules of the course.

The assessment team

The number of assessors must meet the needs of the students and the training provider. For example, where two assessors are conducting the assessment, there must be a maximum of five students per assessor. In this example, a group of 20 students shall therefore require assessments to be carried out over a four-day period. For a group of only 10 students, assessments would be carried out over a two-day period only.

Planning for assessment

Sessional assessment: assessors need to plan in advance how they will conduct sessional assessments for each module. The tables on the following pages are for assessors to use to insert how many hours of theoretical and practical assessment will be conducted and what the scheduled dates are.

Final assessment: Training providers need to decide ways to combine modules into a cohesive two-day final assessment program for each group of five students. Training providers must agree the stitching program for practical assessments in advance.

Complete list of machines. (20 trainees for whole course)

Sr#	Description	Quantity
1	Round Knife cutting machine 6"	1
2	Single needle lock stitching machine	5
3	Double needle lock stitching machine	5
4	Five thread safety Over lock stitch machine	5
5	Flat lock stitching machine	5
6	Waist band stitching machine	20
7	Feed of Arm stitching machine	20
8	Button hole machine	1
9	Snap Button Attach machine	1
10	Bar tack machine	20
11	Fully Automatic washing machine	1
12	Tumble Dryer	1
13	HT machine	1
14	Spreading machine	1
15	Drill machine	1
16	Numbering machine	1

Complete list of tools and equipment. (20 trainees for whole course)

Sr#	Description	Quantity
1	Computer set	5
2	Calculator	5
3	L-Scale	25
4	French curve	25
5	Scissor	25
6	Stapler	2
7	Hole Punch	2

8	First Aid Box	1
9	Steam Iron	4
10	Checking table	2
11	Tag Gun	2
12	Grey scale	1
13	Blue scale	1
14	GSM Cutter	1
15	Light Box	1
16	AATTC Manual	1
17	Pick glass	5
18	Weighing scale	1
19	Stitch opener	5
20	Metallic gloves	5
21	Tape Dispenser	1
22	Textile spotting gun	1
23	Crock meter	1
24	Tensile strength tester	1
25	Yarn count tester	1
26	Spreading table	2
27	Clamp and Rod	1 set
28	Cutting table	1
29	Bundling table	1
30	Tweezers	25
31	L-Key	5
32	Blower	1

Complete list of Consumables. (20 trainees for whole course)

Sr#	Description	Quantity
1	Pattern Sheet (24'x32')	5 Rims
2	Measurement Tape (60 inches size)	25
3	Pencil	50
4	Eraser	50
5	Sharpener	2
6	Stapler	2
7	Stapler Pins	10 packets
8	Set Squares	25
9	Marker Pen	25
10	Scotch Tape (1")	25
11	Tracing Wheel	25
12	Curve Stick	25
13	Fabric	200 meters
14	Pearl pins	3 boxes
15	Tailoring Chalk	6 boxes
16	Mask	20
17	Apron	20
18	Nose Covers for respiration safety	20
19	Thread cones (for whole course)	150
20	Bobbin and bobbin case for single needle stitching machine	50
21	Bobbin and bobbin case for double needle stitching machine	50
22	Needles (DB1) for single needle stitching machine	150
23	Needles (DP5) for double needle stitching machine	60
24	Needles (DC27) for over lock stitching machine	60
25	Needles (DV43) for flat lock stitching machine	60
26	Machine Oil	50 liters
27	Clippers	30
28	Measuring Tape (60 inches of length)	30
29	Seam Ripper	30
30	Duster for cleanliness	40
31	Dust bins	20
32	Cleaning Brush	20
33	Fusing	50 meters

34	Tag pins	1 box
35	Poly bags	5 kgs
36	Beakers	20
37	Yard scale	5
38	Zip	20
39	Buttons	20 dozens
40	Hang tag	10 dozen
41	Price tag	10 dozen

Credit values

The credit value of the National Certificate Level 3 in Industrial Garment Expert is defined by estimating the amount of time/ instruction hours required to complete each competency unit and competency standard. The NVQF uses a standard credit value of 1 credit = 10 hours of learning (Following Higher Education Commission (HEC) guidelines).

The credit values are as follows:

Competency Standard	Estimate of hours	Credit
A: Prepare prototype	100	10
B: Verify fabric quality	140	14
C: Perform fabric cutting for production	80	8
D: Operate feed of arm chain stitching machine	140	14
E: Operate waist band stitching machine	50	5
F: Make button holes	40	4
G: Operate button attach machine	40	4
G: Operate bar tack machine	60	6

