



Bangladesh Technical Education Board

Agargaon, Dhaka

Industrial Attachment Guideline for Fabric Manufacturing

Objectives of Industrial attachment

1. **Practical Exposure:**
 - To provide students with hands-on experience in real industrial environments.
 - To help them apply classroom knowledge (theory) into practice.
2. **Skill Development:**
 - To develop technical, managerial, and communication skills.
 - To improve problem-solving and decision-making ability in real workplace situations.
3. **Understanding Industrial Operations:**
 - To familiarize students with industrial processes, machinery, tools, and production systems.
 - To understand workflow, safety standards, and organizational structure.
4. **Professionalism & Work Ethics:**
 - To instill discipline, teamwork, responsibility, and time management.
 - To expose students to workplace culture, ethics, and professional behavior.
5. **Bridging Academia and Industry:**
 - To identify gaps between academic curriculum and industry requirements.
 - To update knowledge about current technologies and practices used in industry.
6. **Career Preparation:**
 - To help students gain confidence and practical competence before entering the job market.
 - To build industry contacts that may lead to employment opportunities.
7. **Research & Innovation:**
 - To encourage students to identify industrial problems and think of innovative solutions.
 - To inspire final-year projects or research work based on real-world challenges.

Outcomes of Industrial Attachment:

1. **Practical Competence:**
 - Students become capable of operating machines, tools, and systems used in the industry.
 - They can apply classroom theories in real-life situations.

2. **Enhanced Technical Knowledge:**
 - Updated understanding of industry standards, processes, and technologies.
 - Ability to identify and solve technical problems in a practical environment.
3. **Professional Skills:**
 - Improved communication, teamwork, and leadership abilities.
 - Development of discipline, responsibility, and work ethics.
4. **Adaptability & Problem-Solving:**
 - Experience in handling real-time challenges and unexpected issues.
 - Ability to adapt to industrial rules, culture, and pressure.
5. **Industry-Academia Linkage:**
 - Students gain insight into the current industry demands, which helps in bridging the gap between theory and practice.
 - Opportunity to use industrial problems as case studies for research or projects.
6. **Career Readiness:**
 - Increased confidence to enter the job market.
 - Work experience that strengthens CV/resume.
 - Networking opportunities with industry professionals, often leading to employment offers.
7. **Innovation & Creativity:**
 - Exposure to industrial problems inspires students to think creatively.
 - Encourages innovative solutions and research-based ideas.

Industrial Attachment Guideline for Weaving Section

Serial No	Section	Activities
1	Winding	✓ Draw the Process flow chart of Weaving Section ✓ Sketch the layout of Weaving Section ✓ Draw the lay out plan of Winding ✓ Identify Model, Country of origin, Winding head, Speed, No. of spindle, Power consumption etc. ✓ Observe employee engaged in winding section. ✓ Different types of Winding process and winding package ✓ Important Terms Related with winding: Tension devices, Yarn Guide, Balloon formation, creeling, Doffing, yarn clearer, piecing, efficiency, winding parameter etc. ✓ Production speed for different yarn count
2	Warping	✓ Draw the lay out plan of Warping. ✓ Identify Model, Country of origin, Warping head, Speed, No. of spindle, Power consumption etc. ✓ Different types of Warping process and flow chart of warping ✓ Important Terms Related with warping: yarn tension, efficiency, warping parameters, end breakage etc. ✓ Production speed for different yarn count
3	Sizing	✓ Machine Name, Model, Country of origin, Total Cylinder , Total Size box , Beam Diameter, Beam Width. ✓ Objective & flow chart Sizing.

		✓ Different Sizing recipe for different Yarn count, Twist, Nature of yarn like cotton, polyester, acrylic etc. ✓ Different ingredients used in Sizing Chemical its commercial name, Purpose of use, country of origin. ✓ Squeezer Pressure applied in Sizing processes. ✓ In case of Denim yarn process No. Chamber for Dyeing & sizing Box, applied pressure in dyeing & sizing box. ✓ Temperature of different size box for different nature of yarn .
4	Drafting, Denting & looming Procedure	✓ Objective of Drafting, Denting & Looming. ✓ Denting for different Ends per inch in reed. ✓ Faults due to Wrong Drafting.
5	Weaving	✓ Different Weaving Loom Observe like Projectile, rapier, Air Jet ,Water Jet . ✓ Model ,name ,country of origin,Air Jet loom Main Nozzle& Sub nozzle air Pressure, RPM, Shedding System(tappet cam, cam dobby, Conventional dobby), Cam profile Picture for 1/1, 2/1,2/2, 3/1 tappet cam loom . ✓ Type of Selvedge used in loom. ✓ Machine pressure, No. of harness, Production per Day . Picks per inch used in different loom. ✓ Grey and Finished Fabric construction for different loom fabric production. ✓ Grey & Finished PPI for different loom. ✓ Observation of different weaving Faults like Stop mark, oil mark its cause & remedy. ✓ Loom Timing Setting for different loom. ✓ Identify different parts used in loom like Drop wire, Reed, Tuck in Device, Weft Sensor, Weft Feeler, Weft feeder, Electronic weft selector ,Tappet cam ,Dobby cam. ✓ Important Terms Related with loom: loom motion, woven fabric structure etc.
6	Woven fabric Quality Control	✓ Quality Assurance Procedure ✓ Quality maintaining policy of the industry. ✓ 4 Point Grading System and 10 point Grading System ✓ Rejection criteria for shade percentage ✓ Fabric faults and remedies ✓ Acceptance Calculation System: ✓ Acceptance Criteria ✓ Machine and Equipment used in Quality Control ✓ Fabric Inspection Machinery
7	Woven Machine Maintenance	✓ Manpower set up for maintenance: ✓ Routine for servicing of machines ✓ Lubrication of different machineries ✓ Maintenance tools and their functions ✓ General Cleaning Schedule ✓ Routine Maintenance of the fiber, fabric and weaving

		- machine ✓ Routine Maintenance of weaving Machine ✓ Common problems of weaving machines in production
8	Utilities	✓ Boiler: Steam, Main parts of the boiler, capacity ✓ Compressed Air/Compressor: Specification of the air compressor ✓ Gas ✓ Electricity ✓ Generator: Specification of Gas & Diesel Generator
9	Store & Inventory	✓ Inventory control system of raw materials weaving process ✓ Inventory control system of spare parts for weaving machinery. ✓ Spares and parts of weaving machinery ✓ Problems in storage ✓ Monthly consumption of raw materials
10	HR and ADMIN	✓ Project Information ✓ Company Vision and Mission ✓ Company Profile ✓ Product range ✓ Daily Production Capacity ✓ Project Cost ✓ History of the Project Development ✓ Different Departments ✓ Physical Infrastructure ✓ Achievements/Certification ✓ Organogram of Manpower ✓ Management System (Shift) ✓ Job Description of Manager, Production officer and Supervisors/ In-charge ✓ Compliance Issues ✓ Skill Development Centre
11	Research & Development (R&D)	✓ Purpose and procedure of development. ✓ Product development of weaving fabric ✓ Study the Characteristics; Analysis of sample, Selection of yarn and fabric, selection of finishing parameters, Checking and testing of the sample, Approval of the sample. ✓ Data Storing System ✓ Lab equipment with their function & Standard Operating Process (SOP).

Industrial Attachment Guideline for Knitting Section

Serial No	Section	Activities
1	Circular Knitting Machine	✓ Layout Plan of Knitting Section ✓ Process flow chart of Circular Knitted Fabric ✓ Selection of yarn Count, stitch length & GSM according to buyer requirements. ✓ Relation among machine gauge, yarn count, Grey and Finished fabric GSM according to requirements ✓ Manufacturing process of various fabrics according to buyer demands: S/J, RIB, Interlock, Single Lacoste, double Lacoste, PK, Fleece, Waffle, Rib etc. ✓ Selection of m/c diameter according to grey and Finished fabric Diameter & GSM ✓ Relation between Grey GSM & Finished GSM with respect to shade% ✓ Important Terms Related with Knitting: M/C Gauge, Machine Pitch, Stitch length, GSM, Yarn Count, Yarn twist, Yarn ply, Yarn tension, Take down tension, cam arrangement, needle arrangement, creel arrangement, sinker arrangement, relation between machine speed and machine diameter, arrangement of dial needle and cylinder needle ✓ Effect of Stitch Length on Color Depth ✓ Factors Influences the Circular Knitted Fabric Production Process
2	Engineering Stripe Machine	✓ Process flow chart of stripe knitted fabric. ✓ Selection of yarn color, count, stitch length, and GSM as per buyer requirements. ✓ Relationship between machine gauge, yarn count, grey GSM, and finished GSM. ✓ Machine diameter selection based on grey/finished fabric diameter and GSM. ✓ Essential knitting terms: machine gauge, pitch, stitch length, GSM, yarn count, twist, ply, yarn tension, take-down tension, cam/needle/creel/sinker arrangements, machine speed vs. diameter, dial & cylinder needle arrangement. ✓ Effect of stitch length on color depth. ✓ Factors influencing knitted fabric production
3	V-bed/Flatbed Knitting Machine	✓ Process flow chart of V-bed stripe knitted fabric. ✓ Selection of yarn color, count, stitch length, and GSM as per buyer specifications. ✓ Relationship among machine gauge, yarn count, grey GSM, and finished GSM. ✓ Machine width and bed gauge selection

		according to fabric diameter and GSM. ✓ Essential knitting terms: machine gauge, pitch, stitch length, GSM, yarn count, twist, ply, yarn tension, take-down tension, cam setting, needle arrangement, carriage speed, feeder arrangement, sinker setup. ✓ Effect of stitch length on fabric density and color depth. ✓ Factors influencing V-bed knitted fabric production.
4	Knit Fabric Quality Control	✓ Quality Assurance Procedure ✓ Quality maintaining policy of the industry. ✓ 4 Point Grading System and 10 point Grading System ✓ Rejection criteria for shade percentage ✓ Knit Fabric faults and remedies ✓ Acceptance Calculation System of Knit fabric ✓ Acceptance Criteria ✓ Machine and Equipment used in Quality Control ✓ Knit Fabric Inspection Machinery
5	Knitting machine Maintenance	✓ Manpower set up for maintenance: ✓ Routine for servicing of machines ✓ Lubrication of different machineries ✓ Maintenance tools and their functions ✓ General Cleaning Schedule ✓ Routine Maintenance of the fiber, fabric and Knitting machine ✓ Routine Maintenance of knitting Machine ✓ Common problems of knitting machines in production
6	Utilities	✓ Boiler: Steam, Main parts of the boiler, capacity ✓ Compressed Air/Compressor: Specification of the air compressor ✓ Gas ✓ Electricity ✓ Generator: Specification of Gas & Diesel Generator
7	Store & Inventory	✓ Inventory control system for raw materials ✓ Inventory control system for spare parts ✓ Spares and parts ✓ Problems in storage ✓ Monthly consumption of raw materials
8	HR and ADMIN	✓ Project Information ✓ Company Vision and Mission ✓ Company Profile ✓ Product range ✓ Daily Production Capacity ✓ Project Cost ✓ History of the Project Development ✓ Different Departments

		✓ Physical Infrastructure ✓ Achievements/Certification ✓ Organogram of Manpower ✓ Management System (Shift) ✓ Job Description of Manager, Production officer and Supervisors/ In-charge ✓ Compliance Issues ✓ Skill Development Centre
9	Research & Development (R&D)	✓ Purpose and procedure of development. ✓ Product development of knit fabric ✓ Study the Characteristics; Analysis of knit fabric sample, Selection of yarn and fabric, selection of finishing parameters, Checking and testing of the sample, approval of the knit sample. ✓ Data Storing System ✓ Lab equipment with their function & Standard Operating Process (SOP).

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